



- Data Logging
- Thermocouples
- Flow Transmitters
- Level Transmitters
- Signal Conditioners
- Energy Management
- Humidity Transmitters
- Pressure Transmitters
- PC Control Software
- Process Controllers
- Power Supplies
- Ultrasonic Transmitters
- Calibrators
- RTD Probes
- pH & Conductivity
- Counters & Timers

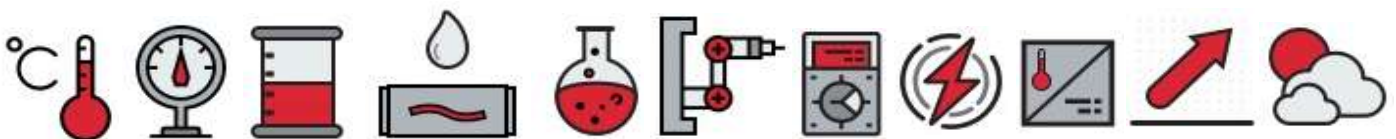


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Mr Signal - Multi-functional Signal Generator

The **MR Signal** PLC Signal Generator is a versatile instrument used for debugging industrial PLC and process instruments, and adjusting valves. The MR Signal has advantages of high precision and powerful functions; it can do input and output signals at the same time with high precision and good linearity.

Small in size for convenience. Functions are easy and programmable through the window menu with a graph to show curves and trends. Easy to use, compact, broad functionality with fast response.

No tool box is complete without it!

Input Types: Current, Voltage, Frequency, mV, Thermocouple, PT100 and Ohm up to 400Ohms.



For more information please see page 118 >>

Contrec 114D - Field Mounting Batch Controller

The Model 114D Batch Controller is designed for flow applications where the precise control of batch quantities is required. Batch Total, Accumulated Total and Preset values can all be displayed on the large LCD display.

The 114D has an input conditioning circuit which will accept pulse or frequency flow signals generated by turbine, positive displacement, paddlewheel or other flowmeters.

Features

- ◆ Displays Batch Total, Accumulated Total and Preset values.
- ◆ One or two stage valve control.
- ◆ Watertight to IP67 (Nema 4X).
- ◆ Wall, Pipe or Panel mounting.
- ◆ Fully programmable.
- ◆ CE Compliant.



For more information please see page 103 >>

Contrec 430D - Panel Mount with Numeric Keypad

The 430D Batch Controller is suited to applications where precise measurement and control of variable batch quantities is required.

The instrument is extremely flexible and easy to operate. Batches can be started, paused, stopped and reset via four operational keys and batch quantities and calibration parameters are entered via a 12 key numeric keypad.

Batch Total, Flow Rate, Accumulated Total and Preset Value can all be displayed in engineering units on the green LED display.

Features

- ◆ Accepts pulse and frequency flow signals
- ◆ Scaled pulse output
- ◆ Overrun compensation
- ◆ One or two stage valve control
- ◆ Optional RS232/422/485 interfaces for computers and printers
- ◆ Remote start/stop
- ◆ No-signal alarm
- ◆ Ticket printing with time and date
- ◆ Displays batch total, preset quantity, flow rate and accumulated total



For more information please see page 103 >>

XU Universal Input Transmitters (Processor)



XU2

- ◆ Programmable via USB (requires XU-USB key).
- ◆ No power supply or calibration required during programming.
- ◆ 2 wire 4~20mA output, loop powered.
- ◆ 3750Vac isolation. ◆ High accuracy 0.1%.
- ◆ Reverse polarity protected. ◆ Heartbeat status LED.
- ◆ Zero adjust pot. ◆ Offset available via XU Software.
- ◆ Compact DIN Rail mount enclosure.
- ◆ Can invert input to: 20mA input / 4mA Output.
- ◆ Available standard or special calibration.

MODEL	DESCRIPTION	PRICE
XU2	Single Universal Input Transmitter. Input types: mV, V, & mA. RTD Pt100 / Pt1000. Thermocouple (T/C). Potentiometer. Output: 2 wire 4~20mA.	\$210.00
XU-USB	USB Programming Key.	\$88.00

All XU series transmitters are USB Programmable!



XU2H

- ◆ Single Temperature (RTD/Thermocouple) Input In-Head Transmitter.
- ◆ Programmable via USB (requires XU-USB key).
- ◆ No power supply or calibration required during programming.
- ◆ 2 wire 4~20mA output, loop powered.
- ◆ High accuracy 0.1%.
- ◆ Reverse polarity protected.
- ◆ Offset available via XU Software.

MODEL	DESCRIPTION	PRICE
XU2HI (Rev 1)	Single Temperature Input Transmitter. For mounting in a probe head. Isolating. Isolation: 3750Vac. Input types: RTD Pt100 / Pt1000. Thermocouple (T/C). Output: 2 wire 4~20mA.	\$198.00
XU2HN (Rev 1)	Single RTD Temperature Input Transmitter. For mounting in a probe head. Non-isolating. Input types: RTD Pt100 / Pt1000. Output: 2 wire 4~20mA.	\$98.00
XU-Spring-Kit	For vibration areas or where wide ambient temperatures exist on the probe head.	\$10.00
XU-USB	USB Programming Key.	\$88.00



Note:

The same **XU-USB** Programming Key can be used to program any of the XU Series transmitters - just change the included cable for DIN or In-Head!



The **XU-USB** Key is also used for programming the 2400-A16, IN-uP4, uP4-Din, Z-2400-Sleeper and Z-2400-A2 Series.



XU4

- ◆ Programmable via USB (requires XU-USB key).
- ◆ No power supply or calibration required during programming.
- ◆ 3750Vac isolation. ◆ High accuracy 0.1%.
- ◆ Reverse polarity protected. ◆ Heartbeat status LED.
- ◆ Zero adjust pot. ◆ Offset available via XU Software.
- ◆ Compact DIN Rail mount enclosure.
- ◆ Available standard or special calibration.
- ◆ Universal ac/dc power supply: 20~265Vac and 21~265Vdc.

MODEL	DESCRIPTION	PRICE
XU4	Single Universal Input Transmitter. Input types: mV, V, & mA. RTD Pt100 / Pt1000. Thermocouple (T/C). Potentiometer. Output types: Current - e.g. 4~20mA. Voltage - e.g. 0~10V.	\$298.00
XU-USB	USB Programming Key.	\$88.00

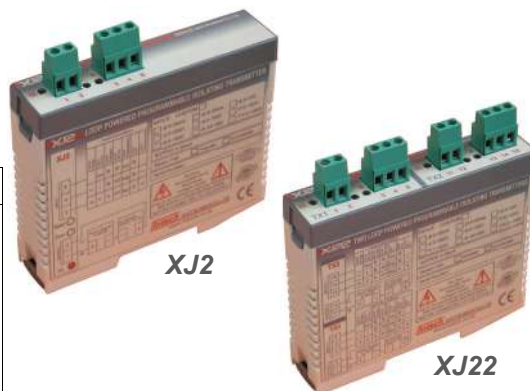


XJ Universal Input Transmitters (Analogue)

XJ2 & XJ22 (2 Wire) Universal Input

Loop Powered

- ◆ Field programmable bi-polar input ranges.
- ◆ 2 wire 4~20mA output(s), loop powered.
- ◆ 2.0 kV isolation.
- ◆ 0.1% accuracy.
- ◆ Reverse polarity protected.
- ◆ LED indication of loop current.
- ◆ Compact DIN Rail mount enclosure.
- ◆ Available standard or special calibration.



MODEL	DESCRIPTION	PRICE
	Input types*: DC: mV, V, & mA. RTD Pt100. Differential RTD. Thermocouple (T/C).# Bridge/Strain Gauge. Potentiometer. Resistance.	
XJ2	Single Transmitter Output: 2 wire 4~20mA	\$234.00
XJ22	Dual Transmitter Outputs: 2 wire 4~20mA	\$382.00

* **Note:** Soldering of jumpers is required when changing input **type** e.g. from RTD Pt100 to DC.

The **XJ2 / XJ22** Thermocouple (T/C) output(s) is NOT linear with temperature. We strongly recommend using the **XU2** for Thermocouple (T/C) applications.

XJ4 (4 Wire) Universal Input

Universal Power Supply

- ◆ Field programmable bi-polar input and output ranges.
- ◆ 2.0 kV isolation.
- ◆ 0.1% accuracy.
- ◆ Transmitter power supply.
- ◆ Compact DIN Rail mount enclosure.
- ◆ On board transmitter power supply (20Vdc) max 30mA.
- ◆ Available standard or special calibration.
- ◆ Universal ac/dc power supply:
85~264Vac/dc or 22~90Vdc selectable.
10~28Vac/dc optional.

MODEL	DESCRIPTION	PRICE
XJ4	Input types*: DC: mV, V, & mA. RTD Pt100. Differential RTD. Thermocouple (T/C).# Bridge/Strain Gauge. Potentiometer. Resistance.	\$354.00
	Field Programmable Output types: Current: Voltage: 4~20mA 0~5V 0~20mA 0~10V -10~10mA 2~10V -20~20mA -5~5V -10~10V	
	Other output current and voltage ranges available.	



* **Note:** Soldering of jumpers is required when changing input **type** e.g. from RTD Pt100 to DC.

The **XJ4** Thermocouple (T/C) output is NOT linear with temperature. We strongly recommend using the **XU4** for Thermocouple (T/C) applications.

Loop Powered Transmitters (Analogue)



LPN-R-H

- ◆ Output, 4~20mA loop powered.
- ◆ 2kV isolation for LPI series.
- ◆ 0.1% accuracy.
- ◆ 40~200mV output test signal.
- ◆ LED indication of loop current.

MODEL	DESCRIPTION	PRICE	
LPI-D-F	DC to DC isolating signal transmitter. Fixed input range: 4~20mA.	\$235.00	DC signal
LPI-D-P	DC to DC isolating signal transmitter. Programmable input ranges from 0~10mV to 150V. And from 0~200uA to 50mA.	\$292.00	
LPI-B	Bridge to DC isolating signal transmitter. Programmable input ranges from 0~1mV to 800mV.	\$330.00	Bridge
LPI-P	Potentiometer to DC isolating transmitter. Programmable input span from 0~10% to 0~100%. Elevated zero or suppressed span. Resistance range from 0~1000 ohm to 0~1 Meg ohm.	\$336.00	Potentiometer
LPI-R-F	RTD to DC isolating transmitter. Pt100, others by request. Fixed ranges within -200 to 600°C.	\$235.00	RTD
LPI-R-P	RTD to DC isolating transmitter. Pt100, others by request. Programmable ranges within -200 to 600°C.	\$285.00	
LPN-R-X1 LPN-R-X2	RTD to DC non-isolating transmitter. Programmable ranges within -100 to 600°C. Standard input Pt100, others by request.	\$162.00	Note: For our isolating programmable (including input type) In-Head transmitters please see the XU2HI on page 4 and the JUMO dTrans T01 on page 58.
	Single RTD to DC non-isolating transmitter. Dual RTD to DC non-isolating transmitter.	\$358.00	
LPN-R-H	RTD Pt100 to DC non-isolating transmitter. For mounting in a probe head. Programmable ranges within -100 to 600°C. Double mounting screw holes are at 40mm or 33mm centres. Option for DIN Rail Mount Foot.	\$115.00	
		\$24.00	
LPI-T-F LPI-T-P	Thermocouple to DC isolating transmitter. Available for type K, J, N, R, S, T. Fixed ranges within -100 to 1700°C.	\$298.00	Thermocouple
	Programmable ranges within -100 to 1700°C. (Available on request)	\$348.00	
LPI-CT-X1 LPI-CT-X2	AC current to DC isolating transmitter. Selectable input: 0~1 amp ac or 0~5 amp ac. Special ranges on request.		AC current
	Single LPI-CT transmitter. Dual LPI-CT transmitters.	\$249.00 \$396.00	

Split Core Current Transmitters & Switch.

MODEL	DESCRIPTION	PRICE
	INCCT Series - Split Core Current Transmitters & Switch. Output: 4~20mA loop powered.	
INCCT-521-SP	Current transmitter. Selectable ranges: 10A, 20A, 50A.	\$168.00
INCCT-2151-SP	Current transmitter. Selectable ranges: 100A, 150A, 200A.	\$168.00
INCCT-521-RMS	Current transmitter. Selectable ranges: 10A, 20A, 50A. True RMS.	\$188.00
INCCT-2151-RMS	Current transmitter. Selectable ranges: 100A, 150A, 200A. True RMS.	\$188.00
INCCS-04K-SW	Current switch. Adjustable: 1.5~200A in 3x ranges, self-powered.	\$136.00



Plug-in Transmitters (Analogue)

- ◆ Input and output ranges are field programmable.
- ◆ Bi-polar - input and output signals.
- ◆ 1.6kV isolation.
- ◆ 0.1% accuracy.
- ◆ Plug-in - DIN rail mount base.
- ◆ Special calibration available.
- ◆ Power supply: 85~264Vac/dc or 22~85Vac/dc selectable.
10~28Vac/dc optional for some models, see below.



MODEL	DESCRIPTION	PRICE	
PI-D	DC to DC isolating signal transmitter. Programmable input ranges from 0~10mV to 150V, 0~200uA to 50mA. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. On board 20Vdc power supply for primary transmitter.	\$452.00	DC signal
PI-F	Frequency to DC isolating signal transmitter. Programmable input ranges from 0~0.4 Hz to 40 kHz. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. On board 12Vdc 50mA power supply for primary signal.	\$570.00	Frequency
PI-B	Bridge to DC isolating signal transmitter. Programmable input ranges from 0~1mV to 1000mV. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. On board precision 10Vdc 30mA power supply for bridge excitation.	\$495.00	Bridge
PI-M	Maths function, DC to DC isolating transmitter with 3 inputs. Programmable V & mA input ranges. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. 32 predetermined programmable math functions. 120 point user defined curve programmability. Note: LV Power supply option <u>not</u> available.	\$620.00	Maths function
PI-RAC	RS232 adapter cable for connecting the PI-M to a computer. Uses Windows Notepad or Excel in conjunction with Windows Hyper Terminal.	\$275.00	
PI-K	Resistance to DC isolating transmitter. Programmable input ranges from 0~10 ohms to 20k ohms. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA.	\$580.00	Resistance
PI-P	Potentiometer to DC isolating transmitter. Resistance range from 0~200 ohms to 0~1M ohms. Programmable input span from 0~10% to 0~100%. Elevated zero or suppressed span available. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. Note: LV Power supply option <u>not</u> available.	\$480.00	Potentiometer
PI-R	RTD Pt100 to DC isolating transmitter. Programmable ranges within -200 to 500°C. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. Note: LV Power supply option <u>not</u> available.	\$530.00	RTD Pt100
PI-S	Set point alarm unit. Two set points, two relay outputs. Programmable input ranges within 0 to 10V and, 0 to 50mA. Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA. The action of the two alarm relays is selectable, high, low, hysteresis & differential Selectable N/O-N/C contacts. Adjustable time delay of 0.2~30 sec.	\$545.00	Set point alarm
OPTION			
LV	Power supply of 10~28Vac/dc fitted. Not available for PI-M, PI-P or PI-R.	\$80.00	

Flow Pulse Amplifier

The TW-FFA Flow Amplifier was designed and manufactured specifically for use with flow transducers (or other ac/dc waveforms), to provide a stable and amplified output for further processing. The input voltage signal from a flow transducer is amplified to a square wave output. Typical applications include flow totalisation and rate of fluids in pipe sizes ranging from ½" to 96" diameter.



MODEL	DESCRIPTION	PRICE
TW-FFA	Flow pulse amplifier. Power supply: 5~32Vdc. Input: Flow meter impeller or mV: ac or dc frequency. Output: Square wave, 200mA @ 24Vdc. 10kHz max.	\$278.00

XI 4~20mA Isolator Series

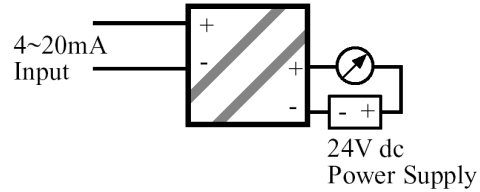
XID-L Loop Powered Isolators



- ◆ Isolating 4~20mA input to 4~20mA output transmitter.
- ◆ Input to output isolation 2.5kV.
- ◆ Input resistance 250Ω.
- ◆ Loop powered. High accuracy 0.03%.
- ◆ Reverse polarity protected.
- ◆ Compact DIN Rail mount enclosure.
- ◆ Available with 1, 2 or 4 transmitters per enclosure.
- ◆ Easy to install. Low cost.

MODEL	DESCRIPTION	PRICE
XID-L1	One Isolator.	\$195.00
XID-L2	Dual Isolators.	\$341.00
XID-L4	Quad Isolators.	\$545.00

Typical Hookup
XID-L / XI-L



XI-L Loop Powered Isolators



- ◆ Isolating 4~20mA input to 4~20mA output transmitter.
- ◆ Input to output isolation 1kV.
- ◆ Input resistance 50Ω.
- ◆ Loop powered. High accuracy 0.1%.
- ◆ Reverse polarity protected.
- ◆ Compact DIN Rail mount enclosure.
- ◆ Available with 1, 2 or 4 transmitters per enclosure.
- ◆ Easy to install.

MODEL	DESCRIPTION	PRICE
XI-L1	One Isolator.	\$228.00
XI-L2	Dual Isolators.	\$428.00
XI-L4	Quad Isolators.	\$620.00

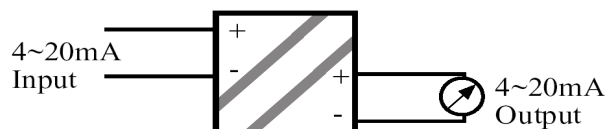
XI-P Input Powered Isolators



- ◆ 4~20mA input powered to 4~20mA output Isolation transmitter.
- ◆ Ideal for isolating a typical 4~20mA loop.
- ◆ Also good for line filtering at the receive end of line.
- ◆ No power supply needed - input powers output.
- ◆ Input to output Isolation 1kV.
- ◆ High accuracy.
- ◆ Reverse polarity protected.
- ◆ Compact DIN Rail mount enclosure.
- ◆ Available with 1, 2 or 4 transmitters per enclosure.
- ◆ Easy to install.

MODEL	DESCRIPTION	PRICE
XI-P1	One Isolator.	\$274.00
XI-P2	Dual Isolators.	\$478.00
XI-P4	Quad Isolators.	\$710.00

Typical Hookup
XI-P



- ◆ Ideal for isolating a typical 4~20mA current loop.
- ◆ Input to output Isolation 2.5kV.
- ◆ High accuracy 0.03%.
- ◆ 24Vdc powered.
- ◆ Reverse polarity protected.
- ◆ Compact DIN rail mount enclosure.
- ◆ Easy to install.
- ◆ Low cost.



MODEL	DESCRIPTION	PRICE
XID-P1	One Isolator.	\$226.00

Wireless Z-2400-A2 Series

If you are looking for wireless monitoring and/or remote control solutions, Intech's Z-2400-A2 Series may be the answer. The Intech Z-2400-A2 devices are integrated with ZigBee® technology to form a mesh network between nodes. This technique allows the range of an individual node to be expanded and multiplied, covering a much larger area. When the mesh network discovers a new Z-2400-A2 node, it will automatically incorporate it into the current wireless network.

MODEL	DESCRIPTION	PRICE
Z-2400-A2IO	The Z-2400-A2IO is the kit set of the Input (Z-2400-A2I) and Output (Z-2400-A2O) wireless nodes, supplied as a complete set paired to each other with a unique mesh ID.	\$924.00
Z-2400-A2I	The Z-2400-A2I is a 2 channel analogue input wireless node, when switched on it looks for the output node to send its input values to via the wireless link. The inputs are individually programmable as follows: <ul style="list-style-type: none"> • RTD: Pt100/Pt1000, -200~800°C. • Thermocouple: B, E, K, J, N, R, S, T, with CJC. • mA: 0~20mA (4~20mA). • mV: -25~25mV to -200~1000mV. • V: 0~1V to 0~18V. • Pulse/Digital Max speed 1Hz. It also comes equipped with 4 digital inputs, 2 digital outputs and 2 relay outputs.	Kit Only
Z-2400-A2O	The Z-2400-A2O is a 2 channel analogue output wireless node. It acts as the base and controls the entire ZigBee wireless network. Like the input node, it comes equipped with the matching 4 digital inputs and 4 digital/relay outputs. The analogue output is 4~20mA only at 24Vdc.	Kit Only
Z-2400-A2R	The Z-2400-A2R is quite simply a ZigBee wireless repeater. It is used to boost the signal strength between the other two nodes, input and output, to extend the range. The maximum number of repeater nodes per wireless mesh network is 15.	\$470.00
XU-USB	USB Programming Key for programming Z-2400-A2 Series using uP Configure Programming Software (version 1.2.8.0 or later). (Same Key as used for programming XU Series transmitters, 2400-A16, Z-2400-Sleeper, IN-uP4 and uP4-Din.)	\$88.00
PSW-10-F	Instrument Quality Power Supply. Output: 24Vdc, 1.0A, Input power supply: 100~264Vac.	\$49.00



Note: The Z-2400-A2I can also be used with the Z-2400 Series as part of a MicroScan SCADA Wireless system. See pages 34~35 >>



Antenna Options (Used when greater distances are involved):

MODEL	DESCRIPTION	PRICE
ZA-OD24-5	ZigBee® Antennas 2.4GHz - for Z-2400-A2 Series. Indoor 5.5dBi Omni Directional Rubber Duck Antenna.	\$41.00
ZA-OD24-2	Outdoor 2.2dBi Omni Directional Whip Antenna c/w 0.5m coax cable with bulkhead.	\$112.00
ZA-OD24-8	Outdoor 8dBi Omni Directional Monopole Antenna c/w 3m coax cable.	\$230.00
ZA-PG24-19	Outdoor 19dBi Directional Parabolic Grid Antenna c/w 3m coax cable.	\$190.00
Z-2400 Turbo (100mW) Performance (2.4GHz). <ul style="list-style-type: none"> • Indoor Urban: <u>With Supplied Whip</u> - 50m Typical. • Outdoor Ideal* Conditions: <u>With ZA-OD24-8</u> - Up to 8km. 		



Notes:

- *Ideal conditions = mounted on 2 metre pole with line of sight and no surrounding trees or buildings, using supplied coax cable only.
- Test results show impressive distance results under ideal line of sight conditions. These distances are rapidly reduced when obstructions to 'line of sight' are experienced.
- For outdoor antennas, the supplied coax-seal must be used between exposed connections to protect from moisture corrosion.
- Use only Intech ZA Antennas with Intech Z-2400-A2 Series wireless modules.

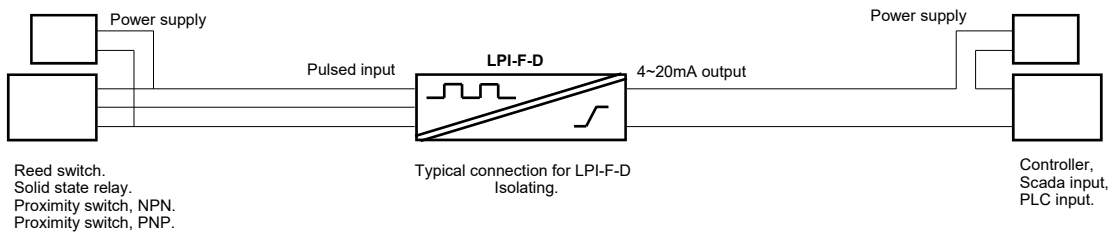
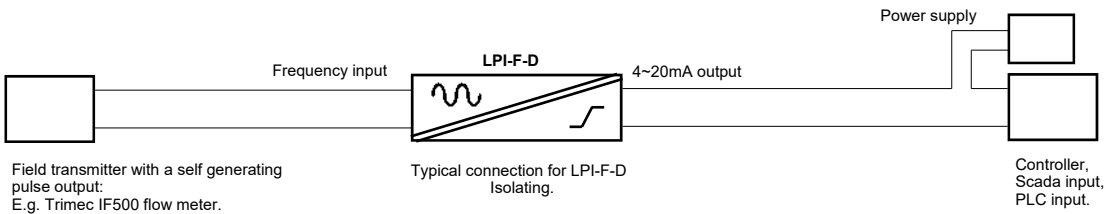
Note: ZigBee® is a Registered trademark of the ZigBee Alliance, Inc.

Frequency to DC - Loop Powered Transmitter



- ◆ Output, 4~20mA loop powered.
- ◆ 2kV isolation.
- ◆ 0.1% accuracy.
- ◆ 40~200mV output test signal.
- ◆ LED indication of loop current.

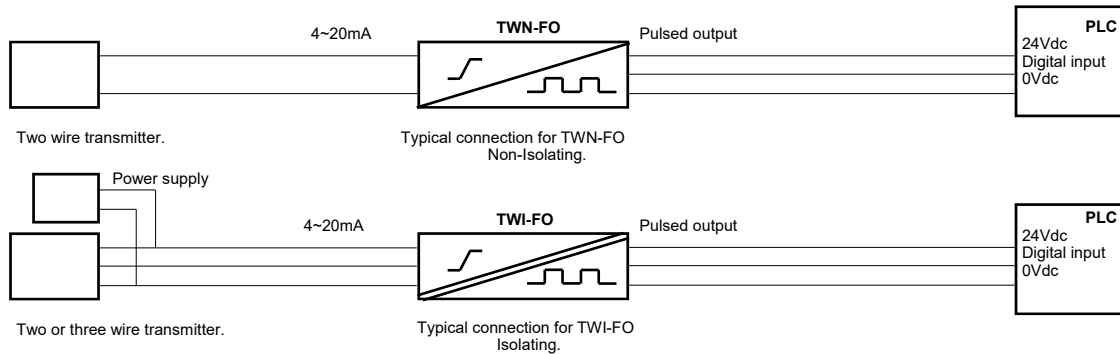
Frequency to DC isolating signal transmitter.		Hz to 4~20mA
Programmable ranges from 0~15Hz up to 0~10kHz.		
Input: 2 wire. Sine, Square, Pulse. Uni-polar or Bi-polar: (Signals < 2V pp Bi-polar only). Minimum input signal: 10mVpp @ 100Hz. 100mVpp @ 1kHz. 1Vpp @ 10kHz. Maximum input signal: 100V pp. (100Hz max for contact closure)		
Output: 2 wire, 4~20mA loop powered.		
MODEL	DESCRIPTION	PRICE
LPI-F-D	DIN rail mount unit.	\$356.00



DC to Frequency Transmitters

MODEL	DESCRIPTION	PRICE
TWI-FO	Isolating DC to frequency interface. Converts a 4~20mA signal to a frequency for direct conversion into a PLC digital input. LED indication of Hz output. 1.6kV isolation. Power supply: 11~28Vdc. Standard input: 4~20mA, others by request. Standard output: 10~1010Hz, others by request.	\$300.00
TWN-FO	Non-isolating DC to frequency interface. As above.	\$300.00

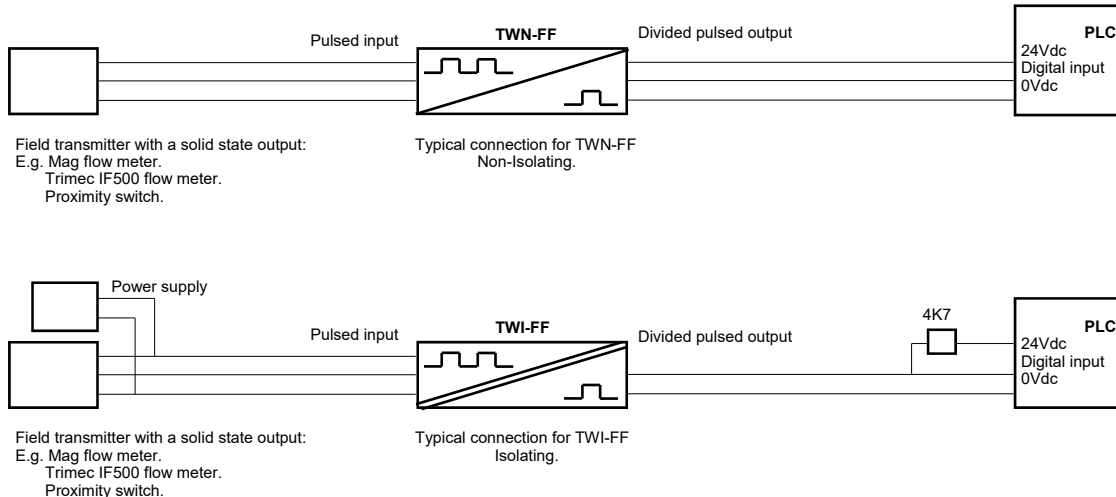
4~20mA to Hz Converter



Frequency to Frequency Transmitters

MODEL	DESCRIPTION	PRICE
TWI-FF	Isolating frequency input, divided, to open collector frequency output interface. LED indication of Hz output. 1.6kV isolation. Power supply: 11~28Vdc. Division factor: 2 to 4096 in 12 binary steps. 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2028, 4096. Input: 5~30Vdc, square wave, (max 100kHz). Output: Open collector 30Vdc, 100mA Maximum. Square wave, (max 5kHz). 50:50 mark space ratio.	\$300.00
TWN-FF	Non-isolating frequency input, divided, to sink/source 100mA @ 24Vdc frequency output interface. As above.	\$300.00

Hz to Hz Divider



Humidity/Temperature Indicator/Transmitter

- ◆ Humidity and Temperature Indicator/Transmitter.
- ◆ This unit is used with a wet and dry sensor system (e.g. WDT-DW).
- ◆ The IN-HWD uses a microprocessor with formulae and look-up tables to obtain better than 1% accuracy for relative humidity over the range of 0~100°C.
- ◆ *Note:* The IN-HWD (rev2) replaces both the 2100-A4-HWD and the older IN-HWD.



MODEL	DESCRIPTION	PRICE
IN-HWD (Rev 2)	Input: 1x wet bulb and 1x dry bulb. Standard: RTD Pt100, 3 wire DIN (0~100°C). Output: 1x humidity and 1x temperature. 2 channels: 4~20mA. Resolution: 0.025% Full scale. 12 bit. Indicator: Dual LED screens for humidity and temperature. Standard Power Supply: 85~264Vac / 95~370Vdc.	\$760.00
OPTIONS		
R4	4x 5A Relay Outputs	\$118.00
WS232	Serial Port RS232: Includes Modbus RTU	\$130.00
WS485	Serial Port RS485: Includes Modbus RTU	\$130.00
LV	Low Voltage Power Supply: 15~48Vac / 10~72Vdc.	\$68.00

Humidity Wet and Dry Tank



- ◆ Humidity tank with wet and dry sensors.
- ◆ For the measurement of relative humidity, RH%.
- ◆ Commonly used with the IN-HWD Humidity Indicator/Transmitter.
- ◆ Constructed of 316 stainless steel.

MODEL	DESCRIPTION	PRICE
WDT-DW	Sensors: RTD, Pt100, Band 5. 4.7ø x 150. Others by request. Fill port: 1/8"BSP nipple. Overflow port: 1/8"BSP nipple. Mount: Wall or duct mount. Cable: 3 metres.	\$560.00
WDT-WICK	Spare wick for wet bulb sensor.	\$10.00

Humidity/Temperature Transmitters



- ◆ Dual output, 4~20mA loop powered.
- ◆ Outputs: % RH and Temp.
- ◆ Sensirion SHT25 digital humidity sensor.
- ◆ Pt100 RTD sensor.

MODEL	DESCRIPTION	PRICE
LPN-H-D (Rev 1)	Humidity and Temperature Transmitter, 220mm Duct mount. Dual output, each loop powered. temperature: 4~20mA = Ranged 0~100°C. humidity: 4~20mA = 0~100% RH. Operating Temperature: -30~70°C.	\$430.00
F2	Optional 100mm Flange for LPN-H-D.	\$145.00
LPN-H-W (Rev 2)	Humidity and Temperature Transmitter, Wall mount. Dual output, each loop powered. temperature: 4~20mA = Ranged 0~100°C. humidity: 4~20mA = 0~100% RH. Operating Temperature: -30~70°C.	\$398.00

Calibration system for LPN-H series Humidity sensors:

LPN-H-CAL	Non Spill calibration kit with 33% and 75% RH salt solutions including adaptor.	\$336.00
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Note: It is recommended, where possible, that the LPN series humidity/temperature sensor is mounted vertically with the orange protective cover at the bottom to help prevent moisture build up on the sensor in high humidity situations. This position can also help during calibration, allowing easier access for the calibration kits with a reduction in the spillage of calibration fluids.

Differential Pressure Transmitters

LPN-DP (Rev 1) Features:

- ◆ Very low pressure resolution.
- ◆ Wide range selection.
- ◆ Integral display.
- ◆ Stable processor technology.
- ◆ Temperature compensation.
- ◆ IP67 enclosure.
- ◆ Fast response time.
- ◆ High accuracy & linearity.
- ◆ Compact size.
- ◆ Reverse polarity protection.
- ◆ Low cost.
- ◆ Easy to install.

Typical Applications:

- ◆ HVAC monitoring of:
 - ◇ Filter differential pressures.
 - ◇ Fan static pressures.
 - ◇ Clean room pressures.
 - ◇ Variable air volume systems.
 - ◇ Velocity pressures.
- ◆ Analytical instruments.
- ◆ Dry non-corrosive Gases.
- ◆ Leak detection.
- ◆ General automation.

MODEL	DESCRIPTION	PRICE	
LPN-DP-100mm	Differential pressure transmitter. Differential range within ± 10 to ± 100 mm W.G. Factory set to 0~100mm W.G.	\$695.00	100mm
LPN-DP-1000mm	Differential pressure transmitter. Differential range within ± 100 to ± 1000 mm W.G. Factory set to 0~1000mm W.G.	\$695.00	1000mm
LPN-DP-100kPa	Differential pressure transmitter. Differential range within ± 10 kPa to ± 100 kPa. Factory set to 0~100kPa.	\$695.00	100kPa



pH Transmitter



- ◆ 4~20mA loop powered.
- ◆ LCD display.
- ◆ 2 kV isolation.
- ◆ 0.1% accuracy.
- ◆ 40~200mV output test signal.
- ◆ LED indication of loop current.
- ◆ IP67 enclosure.

For pH probes available for use with the LPI-pH, refer to pages 54~57 >>

MODEL	DESCRIPTION	PRICE
LPI-pH	pH Voltage to DC Isolating Transmitter with LCD display. pH milli volt input and Pt100 temperature compensation. Slope and offset adjustments for on-site calibration.	\$738.00

	0	ACID H+					NEUTRAL 7					ALKALINE OH-					14
pH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
mV at 25°C	+413							0							-413		

Instrument Power Supplies

The PSW-10-F is an instrument quality isolated switch mode power supply, with an output voltage of 24Vdc and up to 1.0A continuously.

Due to advancements in Switch Mode Power Supply technology, special techniques have been developed that make the PSW-10-F both very low noise and high precision. Both line and load regulation is better than 1% over all conditions. These attributes make the PSW-10-F better than most comparable linear power supplies.



PSW-10-F

- ◆ Fixed Power Supply 24Vdc.
- ◆ Output Current of 1.0A.
- ◆ DC Output OK Signal.
- ◆ LED Power On Indication.
- ◆ Short Circuit, Voltage & Current Overload Protection.
- ◆ Isolated output floats close to earth potential.
- ◆ Compact DIN rail mount enclosure.
- ◆ Cooling by Free Air Convection.
- ◆ Low cost.

MODEL	DESCRIPTION	PRICE
PSW-10-F	Output: 24Vdc, 1.0A. Input Power Supply: 100~264Vac.	\$49.00

The PSW-2 is an isolated switch mode power supply that can supply a wide range of DC output voltages, from 5V to 30V, up to 200mA continuously and operates over a wide range of input voltages. Due to recent advancements in Switch Mode Power Supply technology, special techniques have been developed that make the PSW-2 both very low noise (typically less than 1mV) and high precision. Both line and load regulation is better than 0.1% over all conditions (within specified ranges). These attributes make the PSW-2 better than most comparable linear power supplies, while adding features such as DC input and voltage step-up capability, eg: 12Vdc input can be stepped up to 24Vdc output (PSW-2-L version).



PSW-2

- ◆ Output Adjustable from 5V to 30V.
- ◆ 10V Output: Ideal for load cells.
- ◆ Output Current of 200mA.
- ◆ Low Noise.
- ◆ Precision Regulation.
- ◆ Isolated Output Floats Close to Earth Potential.
- ◆ Short Circuit Tolerant.
- ◆ High Accuracy 0.1%.
- ◆ Universal ac/dc Power Supply.
- ◆ Compact DIN Rail Mount Enclosure.
- ◆ Available Standard or Special Calibration.

MODEL	DESCRIPTION	PRICE
PSW-2	Output Adjustable Voltages: 5, 8, 9, 10, 12, 15, 24, 30, Special. Input Power Supplies: High (100~264Vac/dc), Medium (23~90Vdc).	\$145.00
PSW-2-L	12~28Vac / 10~30Vdc input.	\$165.00

The PSW-10 is an isolated switch mode power supply that can supply a wide range of DC output voltages, from 5V to 30V, up to 1A continuously and operates over a range of input voltages. Due to recent advancements in Switch Mode Power Supply technology, special techniques have been developed that make the PSW-10 both very low noise (typically less than 1mV) and high precision. Both line and load regulation is better than 0.1% over all conditions (within specified ranges). These attributes make the PSW-10 better than most comparable linear power supplies.



PSW-10

- ◆ Output Adjustable from 5V to 30V.
- ◆ 10V Output: Ideal for load cells.
- ◆ Output Current of 1A.
- ◆ Low Noise.
- ◆ Precision Regulation.
- ◆ Isolated Output Floats Close to Earth Potential.
- ◆ Short Circuit Tolerant.
- ◆ High Accuracy 0.1%.
- ◆ Universal ac/dc Power Supply.
- ◆ Compact DIN Rail Mount Enclosure.
- ◆ Available Standard or Special Calibration.

MODEL	DESCRIPTION	PRICE
PSW-10	Output Adjustable Voltages: 5, 8, 9, 10, 12, 15, 24, 30, Special. Input Power Supply: 100~264Vac/dc.	\$235.00

Line Filter

The IN-LF is designed as an economical and reliable protection against high voltage transients and surges and other electrical noise - produced by lightning, switching and electrical noise on AC or DC power lines.

MODEL	DESCRIPTION	PRICE
IN-LF	Line Filter. Voltage: 210~250Vac (others by request). Output: Max. load = 3 amps.	\$150.00



IN-LF

Hand Held Signal Generator

- ◆ Multifunction generator.
- ◆ Outputs instrument signals.
- ◆ Use with your own multimeter.

MODEL	DESCRIPTION	PRICE
IN-GEN	Power supply: 9 volt battery. 50~150 ohms: Simulates Pt100, (-100~100°C). 0~20mA: Simulates 0~20mA. Max 320 ohms. 0~100mV: Simulates thermocouple signals. 0~8 volts: Simulates 0~8 volts.	\$425.00



IN-GEN

Overvoltage Protection unit

- ◆ Overvoltage protection unit for instrument signals.
- ◆ Used extensively for lightning protection.

MODEL	DESCRIPTION	PRICE
LPN-OVP (Rev 1)	Leakage Current: 10µA @ 24Vdc. Transient cut-off voltage: 33V. Added line resistance: 25 ohms for the loop. Standard DIN rail mount.	\$118.00



LPN-OVP

Light Intensity Transmitter

The LPN-LUX incorporates an integrated light sensor within an industrial IP66 rated sealed enclosure and is especially designed for high precision linear applications. The sensor has a flat glass window with a built in colour correction filter, giving an approximation to the spectral response in the human eye.

MODEL	DESCRIPTION	PRICE
LPN-LUX (replaces TWN-LUX)	Light intensity 4~20mA transmitter. Range: Standard Calibration: 0~1000lux Nominal. Special Calibration Ranges available: 0~100, 0~500, 0~5000, 0~10000lux. Output: 2 wire 4~20mA (Loop Powered). Load Resistance: 600Ω @ 24Vdc.	\$226.00



LPN-LUX

Universal Input Indicators

The IN-uP4 / uP4-Din are universal single input indicators, which makes interface with a wide range of sensors easy. The IN-uP4 / uP4-Din have a 4-digit LED display. Options for two relay outputs (with two setpoint indicator LED's) and one analogue output are available. Setup and calibration is simple, using 'uP Configure' programming software, with step-by-step instructions.

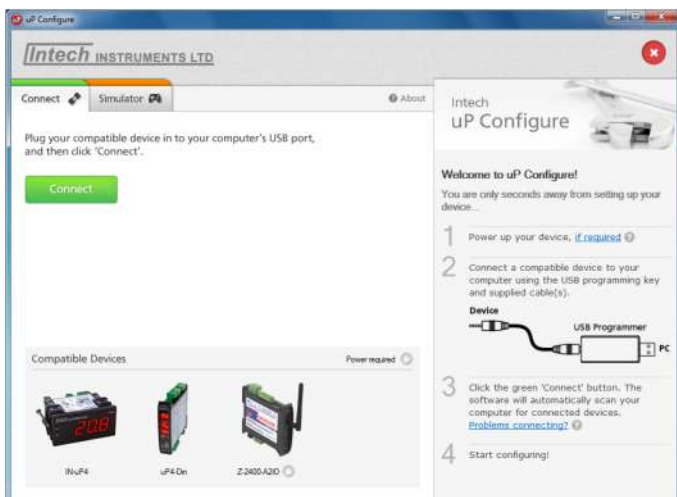


Features:

- ◆ Universal Input.
- ◆ Programmable via USB Port using **uP Configure** software and **XU-USB (Rev 1)** key.
- ◆ Simple setup and calibration.
- ◆ 4-digit LED display.
- ◆ Option to add Two Relay outputs (with two setpoint indicator LED's) plus One Analogue Output.
- ◆ Universal AC or DC supply.
- ◆ Sensor power supply for powering external transmitter.
- ◆ Low cost.

IN-uP4 / uP4-Din Universal Input Indicator.

MODEL	DESCRIPTION	PRICE
	<p>Universal Input Indicator.</p> <p>Accuracy/Repeatability: IN-uP4: 0.2% of FSO / uP4-Din: 0.2% of FSO.</p> <p>Universal Input Types: Pre-programmed for RTD Pt100 input as standard.</p> <p>Voltage DC: -200mV~200mV. 0~1V, 0~10V, -10~30V, 0~300Vdc.</p> <p>Current: 4~20mA (0~20mA), 2 wire.</p> <p>Thermocouple: B, E, J, K, N, R, S, T.</p> <p>RTD: Pt100 or Pt1000 DIN 3-wire Type. (2-wire can be used with offset calibration.)</p> <p>Pulse/Frequency: Open Contact - NPN, PNP. Frequency range: 0~2000Hz.</p> <p>Potentiometer: 3-wire. <1kΩ low pot; 1~4kΩ med pot; 4~20kΩ high pot.</p> <p>Sensor Power Supply: 22Vdc ±10%, 25mA max. Can be used to power 2, 3 and 4 wire sensors.</p> <p>Relay Ratings: Form A, 3A max 120/240Vac or 28Vdc (resistive load).</p> <p>Display: Super bright 4-digit LCD.</p> <p>Temperature: -10°C to +50°C.</p> <p>Universal Power Supply: 24~250Vac, 19.5~250Vdc. (47-63Hz, 6VA max).</p> <p>Protection: IN-uP4: IP65 / uP4-Din: IP20.</p> <p>Dimensions: IN-uP4: H=48, W=95, D=84mm. uP4-Din: H=112, W=23, D=120mm.</p>	
IN-uP4	Universal input indicator, panel mount with no outputs.	\$240.00
IN-uP4X	Universal input indicator, panel mount with two relay outputs (with two setpoint indicator LED's), plus one analogue output 4~20mA.	\$340.00
uP4-Din-R2	Universal input Din Rail indicator, DIN rail mount with two relay outputs.	\$312.00
uP4-Din-R2A	Universal input Din Rail indicator, DIN rail mount with two relay outputs plus one analogue output (4~20mA or 0~10Vdc selectable).	\$388.00
XU-USB (Rev 1)	USB Programming Key for programming IN-uP4 / uP4-Din using uP Configure Programming Software. Note: XU-USB must be (Rev 1) or later! Older versions will NOT connect with the IN-uP4 / uP4-Din. (Same Key as used for programming XU Series transmitters, 2400-A16, Z-2400-Sleeper & Z-2400-A2 Series.)	\$88.00



uP Configure software

FREE DOWNLOAD

Requires an XU-USB (Rev 1) Key to connect with the IN-uP4 / uP4-Din.

Panel Indicators

The LPI-LCD-6 - 4~20mA panel display is ideal for displaying a variety of process variables and is easy to scale to your required engineering units.

4~20mA Panel Display

MODEL	DESCRIPTION	PRICE
LPI-LCD-6	4~20mA Panel Display. Loop powered. Loop powered display backlight. Easy calibration via on-screen menu. 4~20mA calibrator is NOT required! Input: 4~20mA, 2 wire. Display: 5-digit LCD of 17.5mm height. Scaling: Programmable between -99999 to 999999. Max Resolution: 50,000 counts. Accuracy: ±0.02%. Decimal Point: Programmable up to 4 decimal places. Load Resistance: 220Ω Typical. Temperature: -10°C to +60°C. Protection: IP65. Housing: Plastic. 144 x 72 x 25mm.	\$440.00



LPI-LCD-6

MODEL	DESCRIPTION	PRICE
LPI-LCD-5	Panel mount. Loop powered. Easy calibration via on-screen menu. Requires 4~20mA calibrator. Input: 4~20mA, 2 wire. Display: 5-digit LCD of 12.5mm height. Volts Drop: 3.9V @ 20mA. Scaling: Programmable between -19999 to 30000. Max Resolution: 50,000 counts. Accuracy: +/-0.02% of reading plus 2 digits. Decimal Point: Programmable to six positions. Temperature: -10°C to +50°C. Protection: IP65. Housing: Plastic. 96 x 48mm.	\$366.00



LPI-LCD-5

Common Features:

- ◆ Simple setup and calibration.
- ◆ On screen step by step instructions.
- ◆ 5 buttons for easy operator interface.
- ◆ Option to add up to 4 relay outputs.
- ◆ Analogue output retransmission option.
- ◆ IN-RT only: Serial RS485/RS232 port option with Modbus RTU.
- ◆ Wide range of power supply options from 10V to 265V.
- ◆ Excitation supply 24Vdc.

Process Indicators

Note: **IN-P - Multifunction Indicator** also available on request.

MODEL	DESCRIPTION	PRICE
IN-R	Large Display Tachometer Indicator. 4 Digit Large LED display. Microprocessor based for wide range calibration. Inputs: 0~30V, magnetic pickup, NPN, PNP, TTL, Namur. 4 Set Points with delay. 4 LED's for alarm indication. Standard power supply: 85~265Vac / 95~370Vdc.	\$388.00
IN-RT	Flow Rate Indicator with Totaliser. 6 Digit LED display. Inputs: 0~30V, magnetic pickup, NPN, PNP, TTL, Namur. 4 Set Points with delay. Standard power supply: 85~265Vac / 95~370Vdc.	\$478.00
OPTIONS		
R2	2x 5A Relay outputs.	\$88.00
R4	4x 5A Relay outputs.	\$118.00
A	Analogue output retransmission: 4~20mA and 0~10V.	\$98.00
WS232	Serial port RS232: Includes Modbus RTU. IN-RT only.	\$130.00
WS485	Serial port RS485: Includes Modbus RTU. IN-RT only.	\$130.00
LV	Low voltage power supply: 15~48Vac / 10~72Vdc.	\$68.00



IN-R



IN-RT

PLC Analogue Input Expansion

Two 16 channel input multiplexers to choose from:

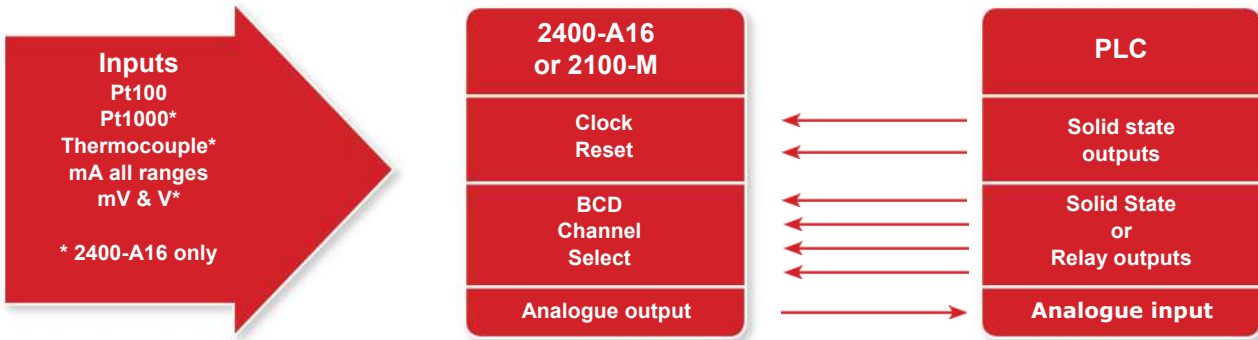
1. 2400-A16 Intelligent Multiplexer.

16 individually configurable inputs.
 RTD Pt100 / Pt1000 any span.
 Thermocouple most types/most spans.
 mA all ranges.
 mV / V.
 Modbus RTU / Modbus TCP.

2. 2100-M Analogue Input Multiplexer.

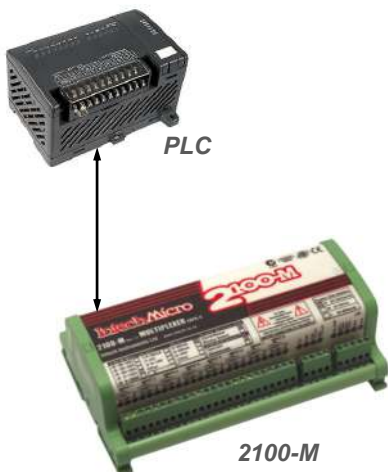
16 analogue inputs.
 High accuracy 0.1%.
 Field programmable ranges within each model.
2100-M-R = RTD Pt100 any span.
2100-M-I = mA any span.

Channel select by PLC is the same for both multiplexers:



MODEL	PLC CHANNEL SELECT		COMMUNICATIONS			PROGRAMMABLE INPUTS		POWER SUPPLY	
	CLOCK-RESET	BCD	MICROSCAN RS485 RS422	MODBUS RTU (RS485)	MODBUS TCP (Ethernet Option)	UNIVERSAL INPUTS	FIXED INPUT TYPE PROGRAMMABLE RANGE	12/24Vac/dc	110/240Vac
2400-A16	✓	✓	✓	✓	✓	✓		✓	✓
2100-M	✓	✓					✓	✓	✓

Analogue Input Multiplexer



- ◆ 16 single ended inputs.
- ◆ Field programmable input ranges.
- ◆ Field programmable output signals.
- ◆ 0.1% accuracy.
- ◆ Universal power supply:
Standard: 85~264Vac/dc. or
23~90Vdc. (Field selectable).
- ◆ Inputs:
RTD Pt100.
milli-Amps.
- ◆ Channel stepping mode, 'clock/reset' or 'binary', is field programmable.
- ◆ DIN rail mount.

MODEL	DESCRIPTION	PRICE
2100-M-R	RTD Pt100 inputs. Programmable input ranges within -200~0~20 to 600°C. Programmable output: 8 ranges within 0~20mA and 0~10Vdc.	\$892.00
2100-M-I	milli-Amp inputs. Programmable input ranges within 0~2 to 20mA. Programmable output: 8 ranges within 0~20mA and 0~10Vdc.	\$882.00

Please Note: Modbus Protocols are **NOT** available with the 2100-M.
 If you require a multiplexer with Modbus Protocols please view the 2400-A16 on page 19 >>

PLC Intelligent Multiplexer

- ◆ Up to 16 Isolated Universal Analogue Inputs.
- ◆ Each input is user selectable in programming software to any of the following: Thermocouple, RTD, mA, mV, Volts, Pulse/Digital.
- ◆ 4 dedicated digital inputs, for counting or on/off status.
- ◆ 2 relay outputs, for control or alarm functions.
- ◆ 2 analogue 4~20mA outputs.
- ◆ Comms – Port 2: Isolated RS232 / RS485.
- ◆ Port 1: Isolated RS422 / RS485 or Ethernet TCP/IP (option).
- ◆ Modbus RTU, Modbus TCP protocols standard.
- ◆ Channel selection: 'binary' or 'clock/reset' (selectable).
- ◆ 0.1% accuracy.
- ◆ DIN rail mount.

2400-A16 Intelligent Universal Analogue Input Multiplexer. Up to 16 Isolated channels.

Universal analogue input ranges, scaled within the following span limits:

RTD: Pt100/Pt1000, -200~320°C to -200~800°C.

Thermocouple: B, E, K, J, N, R, S, T, with CJC.

Range must be within -200~0~1800°C.

mA: 0~20mA, 0~2.5mA.

mV: -25~25mV to -200~200mV.

Volts: 0~1V to 0~15V.

Meter Pulses and Frequency: Max speed 2500Hz.

Resolution: 16 bit.

Dedicated Digital inputs: 4 opto isolated, 5~30Vdc, 8000Hz max.

Power supply: 10VA. 85~265Vac, 95~370Vdc standard.

24~48Vac, 17~72Vdc or 10~30Vdc, optional. (Refer below).

PLC control

Channel select: Clock/reset or binary selectable.

Analogue output: 1 only, 4~20mA only.

Computer control

Analogue output: 1 only, 4~20mA only.

Relay outputs: 2 only, N/O contacts.

Rating, 30Vdc, 3A Max.

Comms: Port 1: Isolated RS422/RS485 or Ethernet TCP/IP. (See below).

Port 2: Isolated RS232/RS485.

USB programming port via **XU-USB** programming key.

Baud rate: 9600, 19200, 57600, 115200, selectable.



PLC



2400-A16 Intelligent Multiplexer

Additional multiplexers

PLC Connection options:

- ◆ Modbus RTU/TCP, or
- ◆ Clock/Reset, or
- ◆ Binary Channel selection.



MODEL	DESCRIPTION	PRICE
2400-A16-I16	16 Isolated universal input channels.	\$1682.00
2400-A16-I8	8 Isolated universal input channels.	\$1196.00
OPTIONS		
-NET	Port 1 fitted with Ethernet TCP/IP connection. MicroScan TCP & Modbus TCP protocols, auto detecting.	\$250.00
-M	Power supply of 24~48Vac, 17~72Vdc fitted.	\$80.00
-L	Power supply of 10~30Vdc fitted (recommend 1A power supply).	\$80.00
2400-RS232	Optional 5m RS232 Cable for the 2400-A16 (Comms Port 2).	\$84.00
XU-USB	USB Programming Key for programming 2400-A16 . (Same Key as used for programming XU Series transmitters, IN-uP4, uP4-Din, Z-2400-Sleeper and Z-2400-A2 Series). 2400-A16-NET: The XPort® Ethernet converter must be programmed via the Ethernet TCP/IP port.	\$88.00

The MicroScan system and the PLC can access the 2400-A16 multiplexer at the same time.

MicroScan V5.1



2400-IS



2400-A16 Multiplexer



PLC

To further Intech 2400-A16 multiplexers

To further 2400-A16 multiplexers

Note: XPort® is a Registered trademark of Lantronix, Inc.

All prices are in NZ\$, are GST exclusive and are subject to change without notice.

ezeio Controllers



eze System

Cloud Based Monitoring

- ◆ Four onboard inputs per ezeio controller.
- ◆ Input types: 0~10Vdc, 0~5Vdc, 4~20mA, Resistive or Pulse.
- ◆ 2 relay outputs, for control or alarm functions.
- ◆ Expansion options for up to 40 inputs per ezeio controller.
- ◆ Input expansion, supports Intech Micro Remote Stations: **2400-A16**, **2300 Series** and **2100-A16**.
- ◆ Output expansion, up to two 16x relay **2400-R2** units (connected to 2400-A16). Or use the 4x relay **2300-RO4**.
- ◆ Comms – Ethernet TCP/IP standard. 3G/GSM optional.
- ◆ Alarms:
 - ◆ Text messages (SMS).
 - ◆ E-mail.
 - ◆ Voice messages.
 - ◆ Local alarm relay output.
- ◆ No loss of data during Internet outages.
- ◆ Secure Web interface via <https://ezecontrol.com>
 - ◆ View SCADA screens anywhere.
 - ◆ Set alarms.
 - ◆ Multi user.
 - ◆ Download data sets.
 - ◆ Visual gauges.
 - ◆ Password protection.
 - ◆ Access from any location worldwide.
 - ◆ All configuration via the web.
- ◆ Easy to Install. Low Cost.



Common Specifications:

Plug Pack AC Power Supply included.
 Dimensions: 153 x 100 x 38 mm (excludes 3G/GSM aerial).
 Operating environment: 0~50°C.
 Embedded protocol support: Modbus RTU RS485.

MODEL	DESCRIPTION	PRICE
ezeio-STD	Communications: Ethernet TCP/IP. **Comes with a limited, free service period.	\$1155.00
ezeio-GSM	Communications: Ethernet TCP/IP, 3G/GSM mobile network*. * Does not include SIM card or ongoing provider charges. Specify your provider when ordering: Spark / 2degrees / Vodafone. **Comes with a limited, free service period.	\$1695.00
eze Cable-485	eze Cable RS485 (1m), if using ezeio with a Intech Remote Station.	\$15.00
Support Charges	Precommission and Remote/Onsite Commissioning/Support. Plus travel and accommodation where applicable.	\$138.00 (per hour)

Up to 40 inputs using the **2400-A16!**

Service Options		
40 Inputs of which up to 5 Inputs are logged	40 Inputs of which up to 15 Inputs are logged	40 Inputs of which up to 40 Inputs are logged
60s minimum log interval	30s minimum log interval	10s minimum log interval
6 months history	13 months history	37 months history
10 SMS/Voice alerts	50 SMS/Voice alerts	100 SMS/Voice alerts
Unlimited email alerts	Unlimited email alerts	Unlimited email alerts
Unlimited reports	Unlimited reports	Unlimited reports

Service Price Options NZ\$			
Service Length	5 Logged Inputs	15 Logged Inputs	40 Logged Inputs
6 months	\$48.00	\$96.00	\$178.00
1 Year	\$87.00	\$172.00	\$288.00
3 Year	\$226.00	\$470.00	\$776.00
Lifetime	\$452.00	\$940.00	\$1552.00

Comms Converters

- ◆ The 2400-IS converts and isolates USB/RS232 from a computer to RS485/422/232 for communication to data high-way stations.

MODEL	DESCRIPTION	PRICE
2400-IS	<p>Isolated Auto-Detecting USB/RS232 to RS485/422/232 converter.</p> <p>Complete with: - USB cable (length = 1m). - RS232 cable (length = 2m).</p> <p>Powered via computer USB port. Fully compatible with USB 2.0. Supports multiple baud rates. Supports using RS485 field stations / controllers on an existing RS422 data hi-way. Stylish compact desktop case. Easy to install.</p>	\$390.00



2400-IS

- ◆ The 2100-IS converts and isolates RS232 from a computer to RS485 or RS422 for communication to data high-way stations.
- ◆ Desk top module, complete with serial cable and power cord.
- ◆ Audible and relay alarms for communication failure with selectable alarm time delays.
- ◆ Radio modem compatible.

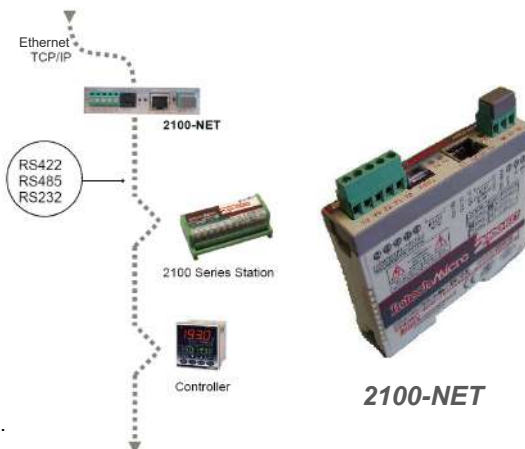
MODEL	DESCRIPTION	PRICE
2100-IS	<p>RS232 to RS485 or RS422 (selectable) Isolating converter.</p> <p>Comms baud rate: 9600 (default): 19200, 4800 (optional).</p> <p>Relay output: 1 relay, change over. Rating, 1 amp, 24Vdc.</p> <p>Power supply: 9V plug pack (supplied with 2100-IS).</p>	\$520.00
OPTIONS	Adaptor kits for modems etc also available - please contact Intech.	POA



2100-IS

- ◆ The 2100-NET brings the convenience of the Ethernet to the MicroScan system, allowing single or groups of remote stations to connect to the plants common Ethernet TCP/IP network. Multiple MicroScan PC's can request data directly from the same stations.

MODEL	DESCRIPTION	PRICE
2100-NET	<p>Ethernet TCP/IP to serial Isolating converter.</p> <p>Comms baud rate: RS485/422/232 (Software Selectable) 19200, 9600, 4800.</p> <p>Power supply: 85~264Vac/dc: 50/60Hz: 10VA, or 23~90Vdc: 10VA (selectable).</p>	\$880.00



2100-NET

Note: The **2100-NET** is used with the **2400/2100 series** I/O Remote Stations and **Shimaden Controllers** when connecting via Ethernet TCP/IP.
For the **2300 series** I/O Remote Stations via Ethernet TCP/IP use the **2300-NET** (page 23).

The **2400-A16-NET** and **2100-A16-NET** connect directly via Ethernet TCP/IP.

Intech Micro 2300 series I/O Remote Stations & PLC

Stand-alone Analogue and Digital Input/Output stations - low cost - Connects to MicroScan V5 software



- ◆ Low Cost I/O Remote Stations.
- ◆ Modbus RTU with Modbus TCP option.
- ◆ MicroScan V5 Compatible - Seamless integration.
- ◆ Also ideal for use when inputs/outputs are required for a PLC and Modbus comms are available.
- ◆ Plug-in connectors makes replacement easy.
- ◆ Programmable ranges within input type.
- ◆ 1.0 kV or greater Isolation.
- ◆ 0.2% accuracy (12 Bit).
- ◆ Compact DIN rail mount enclosure.
- ◆ LEDs indicate I/O status plus comms and power supply.
- ◆ Comms fail alarm (optional).
- ◆ Power supply: 24Vdc.

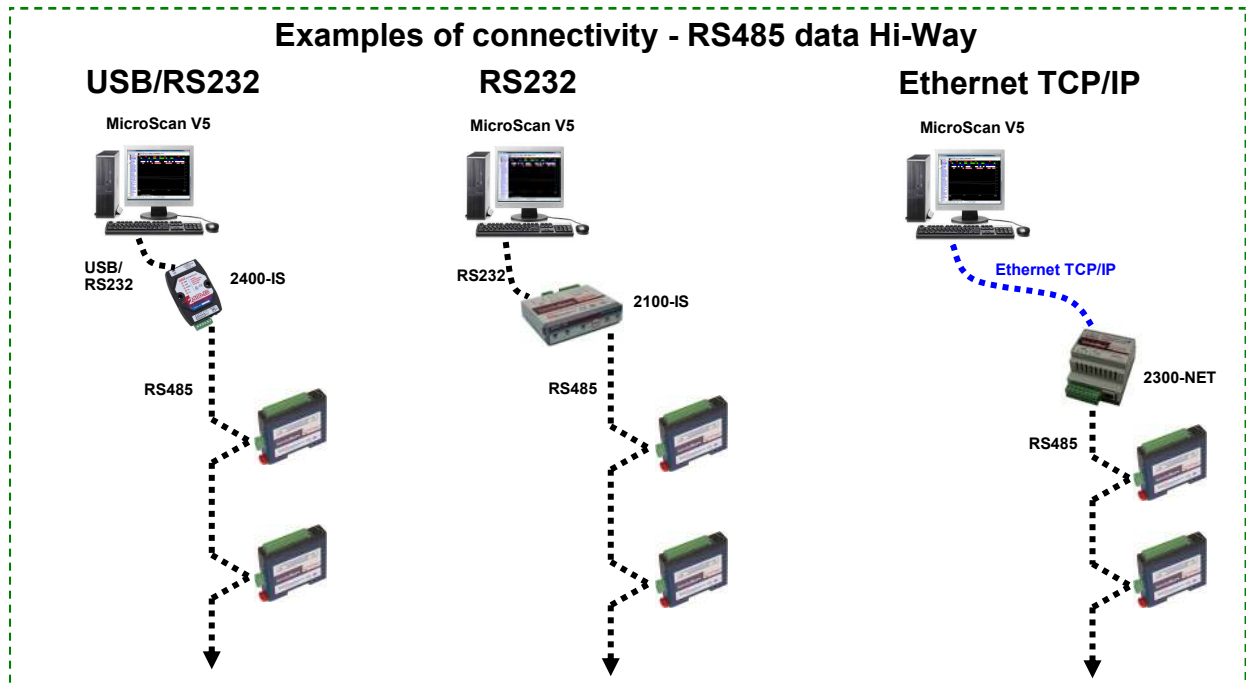
MODEL	DESCRIPTION	PRICE	
2300-A8II	8 x 4~20mA inputs , Isolated 1.0KV isolation between each input. 0~20mA inputs Dip switch selectable. 250 ohms input resistance. 1.5KV isolation between inputs and power supply and comms (RS485). Power Supply = 24Vdc @ 40mA typical.	\$590.00	4~20mA inputs Isolated
2300-A8VI	8 x 0~10Vdc inputs , Isolated 1.0KV isolation between each input. 2~10Vdc inputs Dip switch selectable. 20 Kohms input resistance. 1.5KV isolation between inputs and power supply and comms (RS485). Power Supply = 24Vdc @ 40mA typical.	\$590.00	Voltage inputs Isolated
2300-Tc8	8 x Thermocouple & mV inputs , Isolated 350V peak isolation between each input. Programmable inputs type K, J, T, E, N, B, S, R, with CJC. Programmable mV inputs 0~50mV, -100~100mV. All inputs are set to the same type. 1.5KV isolation between inputs and power supply and comms (RS485). Power Supply = 24Vdc @ 40mA typical.	\$590.00	Thermocouple & mV Isolated
2300-RTD6	6 x RTD inputs , Pt100, Pt1000, Ni120, Ni1000. All inputs are set to the same type. 1.5KV isolation between inputs and power supply and comms (RS485). Resolution = 0.1°C. Power Supply = 24Vdc @ 55mA typical.	\$490.00	RTD input
2300-MULTI	Combination inputs and outputs , single ended. 2 x RTD inputs (Pt100, Pt1000, Ni120, Ni1000); 2 x 0(4)~20mA inputs <u>OR</u> 2 x 0~10Vdc inputs, 1 x 4~20mA output, 4 x Digital inputs, 2 x Digital outputs. 1.5KV isolation between inputs and power supply and comms (RS485). Power Supply = 24Vdc @ 70mA typical. Using the output types requires an independent and isolated power supply.	\$590.00	Combination inputs and Outputs
2300-D16	16 x Digital inputs . Input voltage: 12~24Vdc. 1.5KV isolation between inputs and power supply and comms (RS485). Power Supply = 24Vdc @ 30mA typical.	\$350.00	Digital inputs
2300-RO4	4 x Relay outputs , Change over contacts. Contact rating: 240Vac @ 0.5A 28Vdc @ 1A. 1.0KV isolation between inputs and power supply and comms (RS485). One output can be dedicated to Comms Fail Alarm. Power Supply = 24Vdc @ 100mA typical.	\$320.00	Relay outputs
2300-AO8I	8 x 4~20mA outputs , single ended (all output negatives internally connected). 0~20mA outputs Dip switch selectable. 1.5KV isolation between outputs and power supply and comms (RS485). Power Supply = 24Vdc @ 18mA typical. Requires an independent and isolated power supply to power logic outputs = 24Vdc @ 175mA typical.	\$490.00	4~20mA outputs

24Vdc Instrument Quality Power Supply:

PSW-10-F	Output Voltage: 24Vdc. Max current: 1.0A continuous. Input Power Supply: 100~264Vac.	\$49.00
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Intech Micro 2300 series I/O Remote Stations



Important: The 2300-XX stations cannot share a data hi-way with the 2400-XX / 2100-XX stations and/or Shimaden Controllers.

◆ Comms converters from a computer to RS485 for communication to the 2300 series stations.

MODEL	DESCRIPTION	PRICE
2400-IS	Isolated Auto-Detecting USB/RS232 to RS485 Converter. Complete with: - USB cable (length = 1m). - RS232 cable (length = 2m). Powered via computer USB port.	\$390.00



Isolated Auto-Detecting USB/RS232 to RS485 Converter

2400-IS

MODEL	DESCRIPTION	PRICE
2100-IS	RS232 to RS485 Isolating Converter. Comms baud rate: 9600. Relay output: 1 relay, change over. Rating, 1 amp, 24Vdc. Power supply: 9V plug pack (supplied with 2100-IS). Audible and relay alarms for communication failure with selectable alarm time delays.	\$520.00

RS232 Isolating Converter Alarm for communication failure.



2100-IS

◆ The 2300-NET converts Ethernet TCP/IP to RS485 for communication to the 2300-XX series stations.

MODEL	DESCRIPTION	PRICE
2300-NET	Ethernet TCP/IP to RS485 Isolating Converter. Comms baud rate: 9600. Power supply: 24Vdc. Modbus TCP to Modbus RTU Protocol. Compact DIN rail mount enclosure.	\$490.00
PSW-10-F	Instrument Quality 24Vdc power supply for the 2300-NET. Max Current: 1 Amp continuous. Input power supply: 100~264Vac.	\$49.00

Ethernet TCP/IP to RS485 Isolating Converter



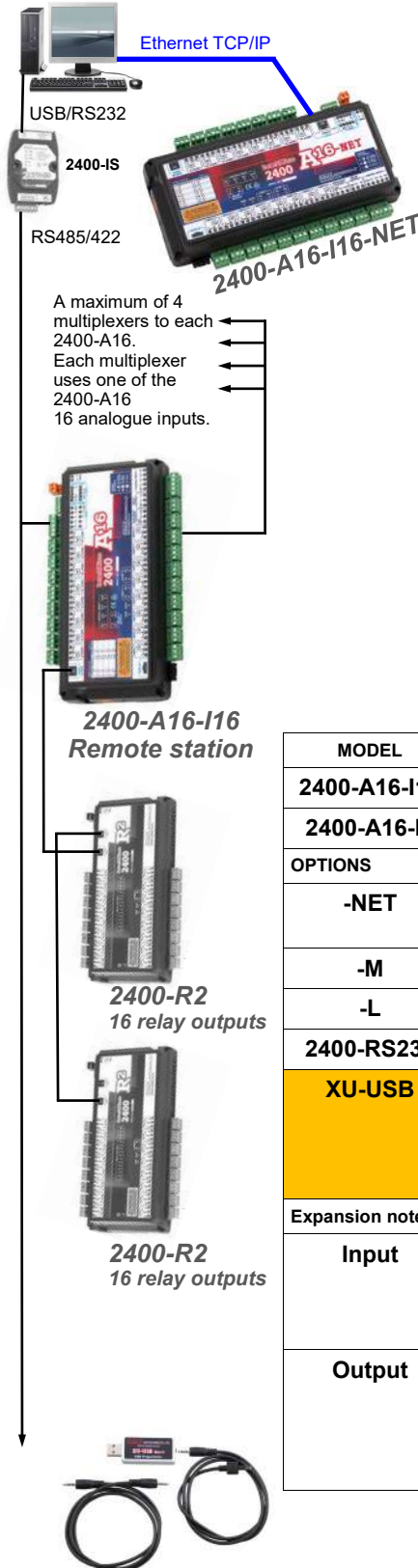
2300-NET

Note: The **2300-NET** is used with the **2300 series** I/O Remote Stations for connecting via Ethernet TCP/IP. For the **2400/2100 series** I/O Remote Stations and **Shimaden Controllers** via Ethernet TCP/IP use the **2100-NET** (page 21).

Universal Analogue Input Station

Intech Micro – Data high-way I/O remote stations.

- ◆ Up to 16 isolated universal analogue inputs.
- ◆ Each input is user selectable in programming software to any of the following: RTD, Thermocouple, mA, mV, Volts, Pulse/Digital.
- ◆ 4 dedicated digital inputs for counting or on/off status.
- ◆ 2 relay outputs, for control or alarm functions.
- ◆ 2 analogue 4~20mA outputs.
- ◆ Comms – Port 2: Isolated RS232 / RS485.
- ◆ Port 1: Isolated RS422 / RS485 or Ethernet TCP/IP (option).
- ◆ Input expansion, up to four 16 input 2100-M units.
- ◆ Output expansion, up to two 16 relay 2400-R2 units.
- ◆ Radio modem compatible.
- ◆ 16 resident 'computer free' on board controllers.
- ◆ Use with the two on board relays or the 2400-R2 unit.



2400-A16 Isolated Universal Analogue Input Remote Station. Up to 16 Isolated channels.

Universal analogue input ranges - scaled within the following span limits:

- RTD: Pt100/Pt1000, -200~320°C to -200~800°C.
- Thermocouple: B, E, K, J, N, R, S, T, with CJC. Range must be within -200~0~1800°C.
- mA: 0~20mA, 0~2.5mA.
- mV: -25~25mV to -200~200mV.
- Volts: 0~1V to 0~15V.
- Meter pulses and Frequency: Max speed 2500Hz.

- Resolution: 16 bit.
- Dedicated digital inputs: 4 opto isolated, 5~30Vdc, 8000Hz max.
- Analogue outputs: 2 isolated channels, 4~20mA only. (Not available when Multiplexers are connected).
- Relay outputs: 2 relays, n/o contacts, Rating, 30Vdc, 3A Max.
- Power supply: 10VA. 85~265Vac, 95~370Vdc standard. 24~48Vac, 17~72Vdc or 10~30Vdc, optional. (Refer below).
- Comms: Port 1: Isolated RS422/RS485 or Ethernet TCP/IP. (Refer below).
- Port 2: Isolated RS232/RS485.
- USB programming port via **XU-USB** programming key.
- Protocols: MicroScan ASCII, Modbus RTU/TCP. Auto detecting.
- Baud rate: 9600 (MicroScan), 19200, 57600, 115200, selectable.
- Control: Set points and hysteresis values for the 16 resident on board controllers are downloaded from the programming software and held in permanent memory.

MODEL	DESCRIPTION	PRICE
2400-A16-I16	16 Isolated universal input channels.	\$1682.00
2400-A16-I8	8 Isolated universal input channels.	\$1196.00
OPTIONS		
-NET	Port 1 fitted with Ethernet TCP/IP connection. MicroScan TCP & Modbus TCP protocols. Auto detecting.	\$250.00
-M	Power supply of 24~48Vac, 17~72Vdc fitted.	\$80.00
-L	Power supply of 10~30Vdc fitted (recommend 1A power supply).	\$80.00
2400-RS232	Optional 5m RS232 cable for the 2400-A16 (Comms Port 2).	\$84.00
XU-USB	USB Programming Key for programming 2400-A16 . (Same Key as used for programming XU Series transmitters, IN-uP4, uP4-Din, Z-2400-Sleeper and Z-2400-A2 Series). 2400-A16-NET: The XPort® Ethernet converter must be programmed via the Ethernet TCP/IP port.	\$88.00
Expansion notes		
Input	Input expansion: Backwards compatible with existing systems. Supports up to four 2100-M multiplexers. Each multiplexer uses one of the 2400-A16 16 analogue inputs. The two analogue outputs are not available with this option.	
Output	Output expansion: Supports up to two 2400-R2 relay output modules. This unit allows the station to 'stand alone' as a 16 channel controller for a combination of (on/off or heat/cool) control and alarm functions. The heat/cool option utilises 2 relays per channel. The 2400-A16 supports 16 heat/cool controllers. For this, 32 relay O/P's are required.	

Note: XPort® is a Registered trademark of Lantronix, Inc.

All prices are in NZ\$, are GST exclusive and are subject to change without notice.

SD Memory Logging for 2400-A16

Intech Micro – Data high-way I/O Remote Stations.

The **SD version** of the **2400-A16-NET** is a great way to achieve a stand-alone method for data logging. The station can be used as a 16 input stand-alone logger, or as part of a **SCADA** data highway with backup logging facility. The user friendly and free to download **Intech Micro Station Programmer software** (version 5.2.3613.5 or later), supports the reading of SD cards from the 2400-A16-SD-NET.



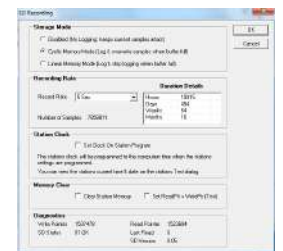
2400-A16-I16-SD-NET

INTECH INSTRUMENTS

FREE DOWNLOAD

Isolated Universal Analogue Input Remote Station. 16 Isolated channels.

- Logging of analogue inputs 1~16, digital inputs 1~4 and ambient sensor onto an SD Card.
- Up to 7858811 data samples.
- Data store rates selectable from 1sec ~ 60min.
- Cyclic or Stop modes when SD Card is Full.
- Internal real time clock with battery backup.
- Read SD memory card by removing SD card and reading from a computer SD port, or using comms.
- Includes a spare SD Card.



Dedicated digital inputs: 4 opto isolated, 5~30Vdc, 8000Hz max.

Analogue outputs: 2 isolated channels, 4~20mA only.
(Not available when Multiplexers are connected).

Relay outputs: 2 relays, n/o contacts, Rating, 30Vdc, 3A Max.

Power supply: 10VA. 85~265Vac, 95~370Vdc standard.
24~48Vac, 17~72Vdc or 10~30Vdc, optional. (Refer below.)

Comms: Port 1: Isolated Ethernet TCP/IP.

Port 2: Isolated RS232/RS485.

USB programming port via **XU-USB** programming key.

Protocols: MicroScan ASCII, Modbus RTU/TCP.
Auto detecting.

See the 2400-A16 on page 24 for more features etc. <<



MODEL	DESCRIPTION	PRICE
2400-A16-I16-SD-NET	16 Isolated universal input channels. SD Memory Logging . Port 1 fitted with Ethernet TCP/IP connection. MicroScan TCP & Modbus TCP protocols. Auto detecting. Standard power supply: 85~265Vac, 95~370Vdc.	\$2230.00
OPTIONS		
-M	Power supply of 24~48Vac, 17~72Vdc fitted.	\$80.00
-L	Power supply of 10~30Vdc fitted (recommend 1A power supply).	\$80.00
XU-USB	USB Programming Key for programming 2400-A16-SD-NET . (Same Key as used for programming XU Series transmitters, IN-uP4, uP4-Din, Z-2400-Sleeper and Z-2400-A2 Series). Note: The XPort® Ethernet converter must be programmed via the Ethernet TCP/IP port.	\$88.00

Note: XPort® is a Registered trademark of Lantronix, Inc.

Relay Expansion Unit for 2400-A16

- ◆ The 2400-R2 plugs into the 2400-A16 to expand the number of relay outputs.
- ◆ 16 relay outputs. Can use 2x 2400-R2 with the 2400-A16 for a total of 32 relay outputs!
- ◆ DIN rail mount.
- ◆ Requires 24Vdc, 10VA power supply.

MODEL	DESCRIPTION	PRICE
2400-R2	Relay output expansion unit for 2400-A16. Relay outputs: 16 relays, change over contacts. Rating, 5 amp, 30Vdc/250Vac. Power supply: 24Vdc ±15%, 10VA.	\$765.00
PSW-10-F	Instrument Quality 24Vdc power supply for the 2400-R2. Max Current: 1 Amp continuous. Input power supply: 100~264Vac.	\$49.00

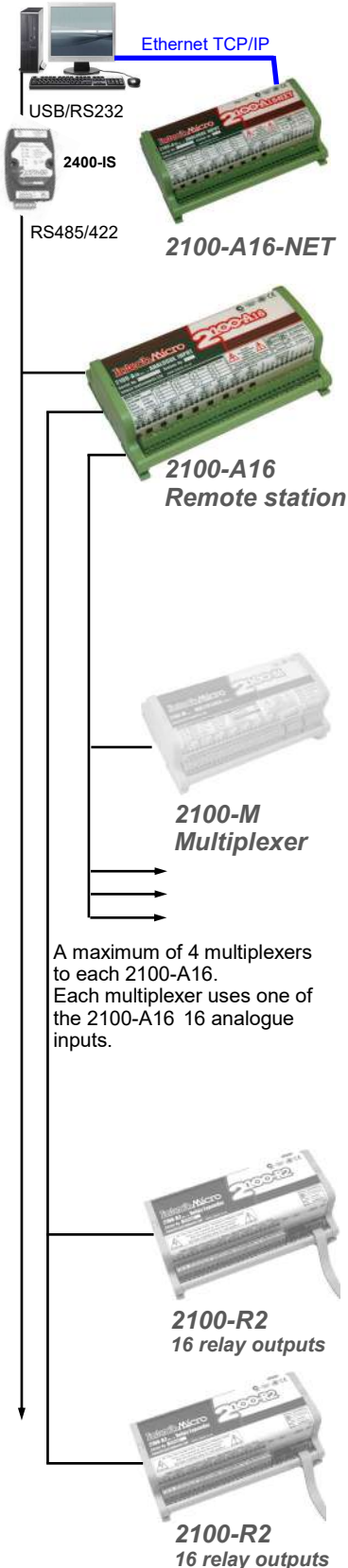


2400-R2

Analogue Input Station

Intech Micro – Data high-way I/O remote stations.

- ◆ Each input is user selectable in MicroScan software to any of the following:
Thermocouple, RTD, mA, mV, volts.
- ◆ 16 analogue differential inputs, (RTD single ended).
- ◆ 4 digital inputs, for counting or on/off status.
- ◆ 2 relay outputs, for control or alarm functions.
- ◆ 2 analogue outputs.
- ◆ Comms – RS485 or RS422 selectable, Modbus RTU Standard, Ethernet TCP/IP optional.
- ◆ Input expansion, up to four 16 input 2100-M units.
- ◆ Output expansion, up to two 16 relay 2100-R2 units.
- ◆ Radio modem compatible.
- ◆ 16 resident 'computer free' on board controllers.
- ◆ Use with the two on board relays or the 2100-R2 unit.



A maximum of 4 multiplexers to each 2100-A16. Each multiplexer uses one of the 2100-A16 16 analogue inputs.

MODEL	DESCRIPTION	PRICE
2100-A16	<p>Analogue input remote station. 16 channels.</p> <p>Analogue input ranges: scaled within the following span limits: mV. 0~25mV to ±500mV. volts. 0~1Vdc to ±15Vdc. mA. 0~1mA to ±100mA (4~20mA default). RTD. 0~25°C to -200~850°C. Pt100/Pt1000 selectable. Thermocouple. RTD inputs must be either Pt100 or Pt1000, not a mixture. K, J, N, T, R, S, B, E, with CJC. Range must be within -200~0~1800°C.</p> <p>Resolution: 16 bit. Differential: 18 volts maximum. Digital inputs: 4 opto isolated, 5~30Vdc, 50Hz max. max count, 16383 and rolls over. Analogue outputs: 2 channels. (Not available when Multiplexers are connected). 4~20mA, 0~20mA. Selectable. 0~10Vdc, 2~10Vdc. Factory option. Relay outputs: 2 relays, n/o contacts, Rating, 1 amp 30Vac/dc. Power supply: 85~264Vac/dc or 23~90Vdc, selectable. Comms: Isolated RS485 (2 wire), RS422 (4 wire), selectable. Modbus RTU standard. Ethernet TCP/IP optional. (Refer below). Baud rate: 9600, 4800, 2400, selectable. Control: Set points and hysteresis values for the 16 resident on board controllers are downloaded from the MicroScan mimic package software and held in permanent memory.</p>	\$1384.00
OPTION		
2100-A16-NET	Analogue input remote station fitted with Ethernet TCP/IP connection. MicroScan TCP & Modbus TCP protocols.	\$454.00
Expansion notes		
Input	<p>Input expansion: This is a standard feature. Supports up to four 2100-M multiplexers. The two analogue outputs are not available with this option.</p>	
Output	<p>Output expansion: Supports up to two 2100-R2 relay output modules. This unit allows the station to 'stand alone' as a 16 channel controller for a combination of (on/off or heat/cool) control and alarm functions. The heat/cool option utilises 2 relays per channel. The 2100-A16 (rev 1.3) can now support 16 heat/cool controllers. For this, 32 relay O/P's are required.</p>	

Relay Expansion Unit for 2100-A16

Intech Micro – Data high-way I/O remote stations.

- ◆ The 2100-R2 plugs into the 2100-A16 to expand the number of relay outputs.
- ◆ 16 relay outputs. Can use 2x 2100-R2 with the 2100-A16 (rev 1.3) for a total of 32 relay outputs!



2100-R2

MODEL	DESCRIPTION	PRICE
2100-R2	Relay output expansion unit for 2100-A16. DIN rail mount. Relay outputs: 16 relays, change over contacts. Rating, 2 amp, 30Vdc/250Vac. Power supply: 85~264Vac/dc or 23~90Vdc, selectable.	\$785.00

Digital I/O Station

- ◆ Remote station with 12 digital inputs and 12 relay outputs.
- ◆ Each input is user selectable in MicroScan software to any of the following:
 - on/off state, flow rate and totalising, counting.
- ◆ Comms - RS485 or RS422 selectable.
- ◆ Radio modem compatible.
- ◆ DIN rail mount.
- ◆ Universal ac/dc power supply.



USB/RS232

2400-IS

MODEL	DESCRIPTION	PRICE
2100-D	Digital input/output remote station. Digital inputs: 12 opto isolated, 5~30Vdc, 500Hz max. (max count: 16383, then resets). Relay outputs: 12 relays. Rating, 2 amp, 30Vdc/250Vac. (10 c/o and 2 n/o contacts). Power supply: 85~264Vac/dc or 23~90Vdc, selectable. Comms: Isolated RS485 (2 wire), RS422 (4 wire), selectable. Baud rate: 9600, 4800, 2400, selectable.	\$1198.00



2100-D

RS485/422

Mini Packs

Complete Chart Recorder replacement packages

UP TO 8 CHANNELS OF RECORDING

Remote stations available for the following: milli-Amps, milli-Volts, Voltage, Thermocouple, RTD, Combination. >>Refer pages 22/23.

SOFTWARE - Supplied with USB Dongle.
1x MICROSCAN V5 RECORDER R8.

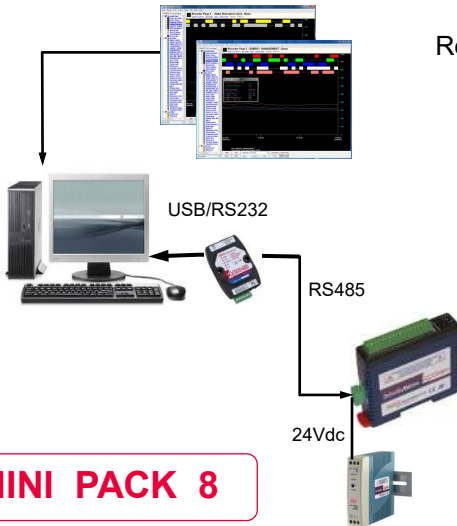
HARDWARE

- 1x ISOLATED AUTO-DETECTING COMMS CONVERTER USB/RS232 to RS485 {2400-IS}**
- 1x INTECH MICRO 2300 Remote Station**
Specify input type when ordering: Current/Voltage/Thermocouple/RTD/Multi.
- 1x PSW-10-F Instrument Quality Power Supply 24Vdc, 1.0A.**

Option 1: If using 2300-RTD6 (6x RTD inputs). **Price = \$2340.00**
Option 2: Using any other 2300 I/O remote station. **Price = \$2440.00**

Alarms - 2300-RO4 - Comms fail alarm and/or Alarm outputs. **add \$320.00**
Ethernet - 2300-NET - Connect via Ethernet TCP/IP {no 2400-IS}. **add \$110.00**

INTECH INSTRUMENTS



MINI PACK 8

N.B. PC not included.

UP TO 16 CHANNELS OF RECORDING

Each input channel can be individually programmed to any of the following: RTD Pt100 / Pt1000, Thermocouple, mA, mV, V, Pseudo Digital.

SOFTWARE - Supplied with USB Dongle.
1x MICROSCAN V5 RECORDER R16.

HARDWARE

- 1x ISOLATED AUTO-DETECTING COMMS CONVERTER USB/RS232 to RS485/RS422 {2400-IS}**
- 1x INTECH MICRO 2400-A16-I16 Remote Station**

PRICE \$3720.00

Ethernet - 1x 2400-A16-I16-NET - Connect via Ethernet TCP/IP {no 2400-IS}.
 Less \$130.00



MINI PACK 16

N.B. PC not included.

UP TO 32 CHANNELS OF RECORDING

Each input channel can be individually programmed to any of the following: RTD Pt100 / Pt1000, Thermocouple, mA, mV, V, Pseudo Digital.

SOFTWARE - Supplied with USB Dongle.
1x MICROSCAN V5 RECORDER R32.

HARDWARE

- 1x ISOLATED AUTO-DETECTING COMMS CONVERTER USB/RS232 to RS485/RS422 {2400-IS}**
- 2x INTECH MICRO 2400-A16-I16 Remote Station**

PRICE \$5600.00

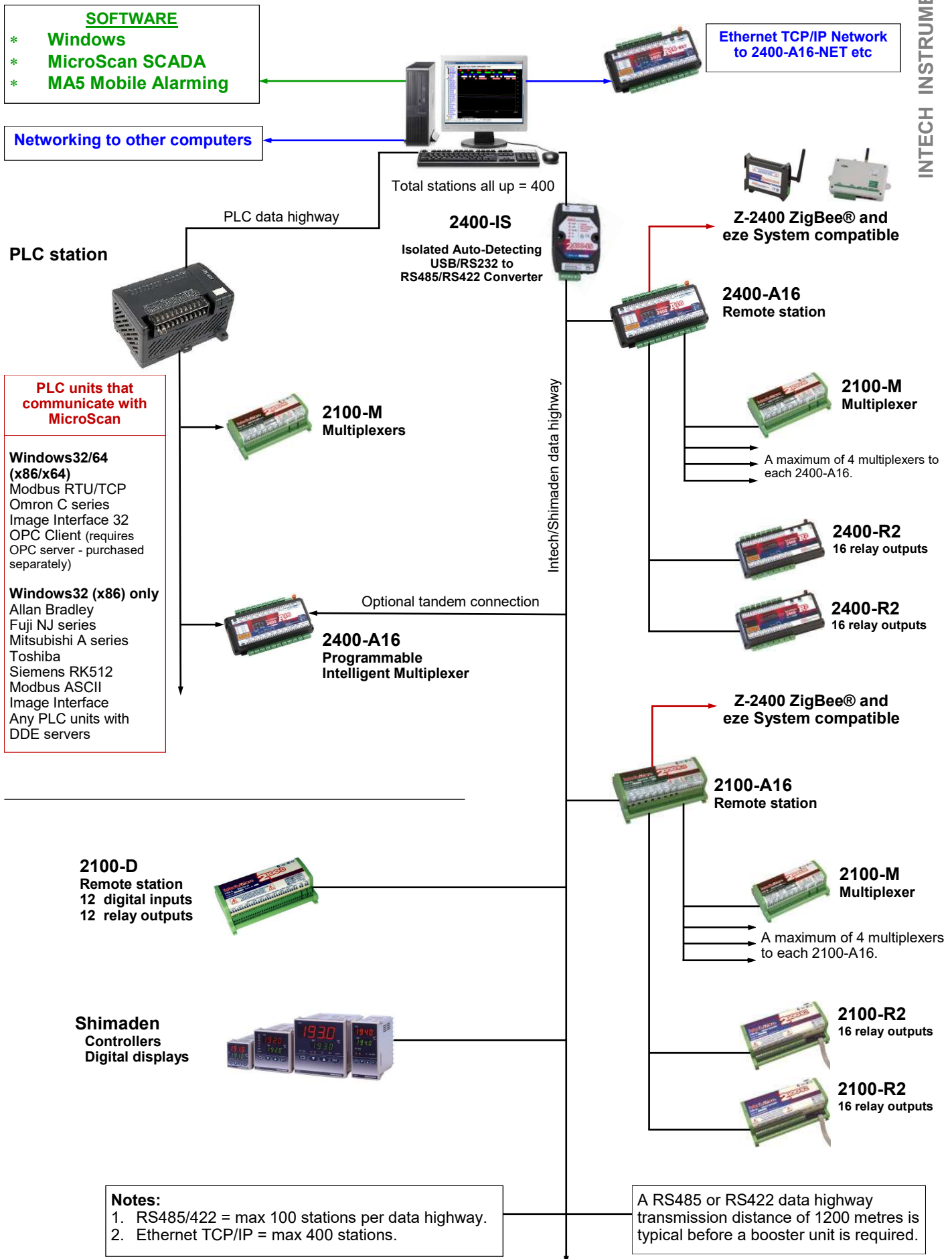
Ethernet - 2x 2400-A16-I16-NET - Connect via Ethernet TCP/IP {no 2400-IS}.
 add \$120.00



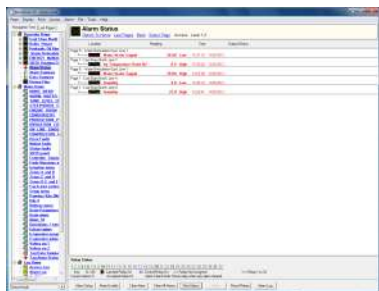
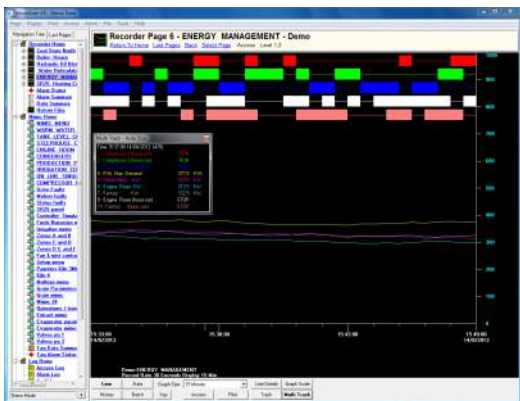
MINI PACK 32

N.B. PC not included.

Intech Micro I/O Stations - Schematic Layout



Data logging and SCADA software (version 5).

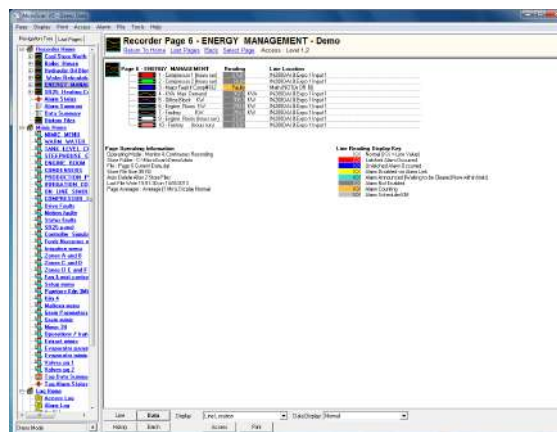
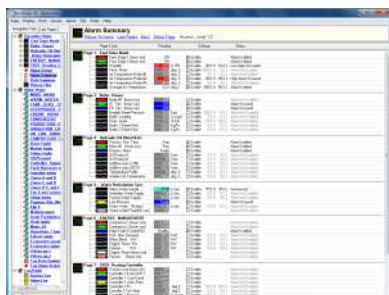
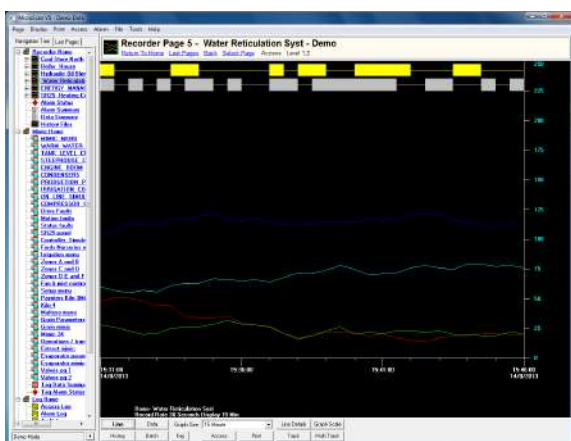
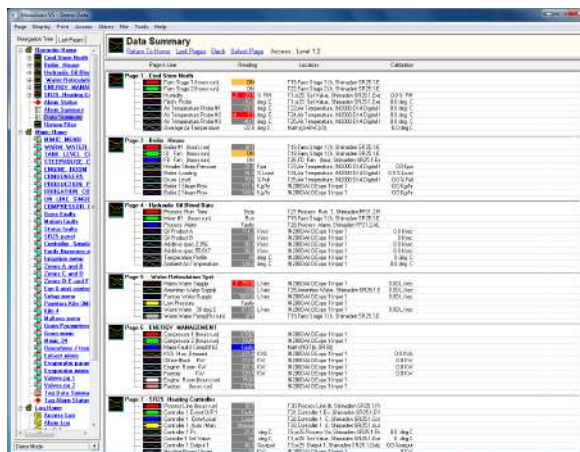


RECORDER MODULE



- ◆ Real-time line graphs.
- ◆ Real-time data screens.
- ◆ Data analysis.
- ◆ Batch recording.
- ◆ Continuous recording.
- ◆ Mathematical blocks e.g.
 - subtraction
 - addition
 - multiply
 - divide
 - Sq root
 - average
 - min/max
 - nat. log.
- ◆ Totalising in engineering units.
- ◆ Total hours run facility.
- ◆ Data logs to printer.
- ◆ ISO 9000 support.
- ◆ Data storage to disk.
- ◆ Help screens.
- ◆ Historical retrieval.
- ◆ Historical search.
- ◆ History replay.
- ◆ Function key support.
- ◆ Alarm handling and printing.
- ◆ Event handling and printing.
- ◆ Comment entry by operators.
- ◆ Report generator.
- ◆ User log-on and audit.
- ◆ DDE support.
- ◆ Communicates with:
 - Intech field stations.
 - Most PLC's.
- ◆ Multi-level passwords.
- ◆ Excel support.
- ◆ Cost effective field interface hardware.

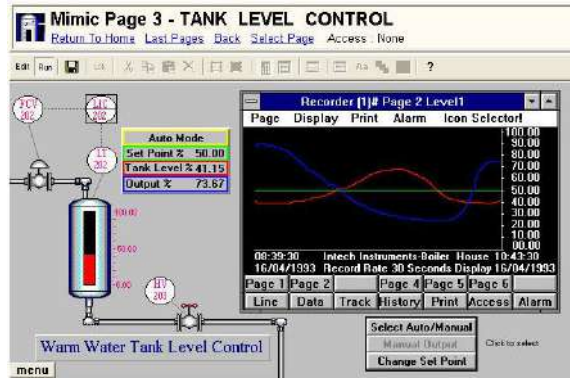
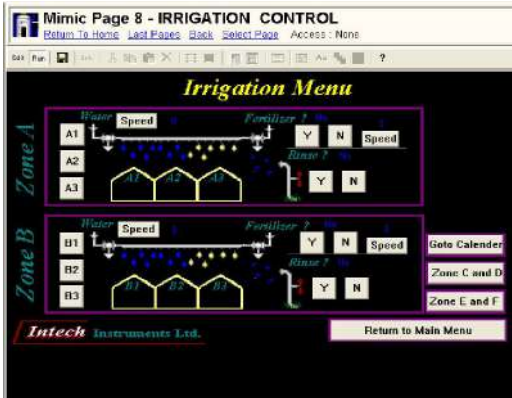
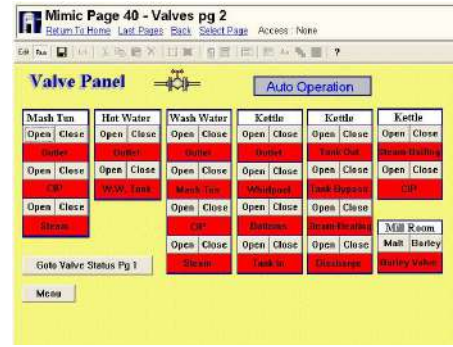
- ◆ MicroScan is a complete Windows based SCADA software product, meeting the demands of industrial, commercial, and research environments.
- ◆ Start off small with the world's best 'Recorder Module' for QA, mandatory data collections, plus plant wide monitoring, or jump straight into a full system with Recorder and Mimic (MM1) modules.
- ◆ Add the powerful 'Network Module' to share the data with managers, accountants, engineers, and others.



Data logging and SCADA software (version 5).

MIMIC MODULE

- ◆ Live screen graphics.
- ◆ PLC operator control.
- ◆ Current plant values and configuration.
- ◆ **Intech Micro** remote station support.
- ◆ Alarm handling and printing.
- ◆ Alarm logs.
- ◆ Controller support.
- ◆ DDE support.
- ◆ Network support.
- ◆ Up to 512 on/off software controllers each with:
 - Set point with differential adjustment.
 - Deviation high and low alarms.



CONTROLLER MODULE

- ◆ Up to 99 Shimaden Controllers.
- ◆ Complete set up and monitoring of Controllers and Indicators.
See pages 64~67 for Shimaden Controllers and Indicators >>



PLC INTERFACE MODULE

- ◆ Allows communication between PLC's and Recorder/Mimic modules.
- ◆ **Note:** Check with Intech engineers to ensure that the interface is available for the PLC to be used.



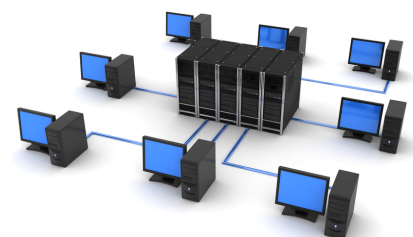
MICROSCAN TOOL BOX MODULE

- ◆ Data transfer.
- ◆ Mathematical formulas.
- ◆ Passwords.
- ◆ Audit tracking.
- ◆ Step controller.
- ◆ Time clock.
- ◆ Data average & min/max.
- ◆ Time functions.
- ◆ Data base.
- ◆ Time clocks.
- ◆ Other special functions:
 - e.g. relative humidity.
 - cylindrical tank volume.
 - list – look-up table.
 - rate of change.



NETWORK MODULE

- ◆ The ability to store files on a file server computer instead of the local computer to which the field hardware is connected.
- ◆ More than one computer can store files on the file server, these files can be picked up by any computer on the network with MicroScan installed.
- ◆ Price for the network module does not include the Network itself.
- ◆ Data file duplication for security.
- ◆ The Network should be installed and successfully running Windows before installing the MicroScan package.



Data logging and SCADA software (version 5). SOFTWARE MODULES

FOR FURTHER INFORMATION
REFER TO THE PREVIOUS TWO PAGES.

INTECH INSTRUMENTS

MicroScan Software "Recorder Packages". Comes complete with USB dongle.

MODEL	DESCRIPTION	PRICE
R16	MicroScan recorder. 16 inputs, 16 outputs.	\$1880.00
R32	MicroScan recorder. 32 inputs, 32 outputs.	\$2095.00
R50	MicroScan recorder. 50 inputs, 160 outputs.	\$2215.00
R100	MicroScan recorder. 100 inputs, 160 outputs.	\$2824.00
R200	MicroScan recorder. 200 inputs, 160 outputs.	\$3822.00
R300	MicroScan recorder. 300 inputs, 160 outputs.	\$4460.00
R400	MicroScan recorder. 400 inputs, 160 outputs.	\$5090.00
R600	MicroScan recorder. 600 inputs, 160 outputs.	\$6205.00
R800	MicroScan recorder. 800 inputs, 160 outputs.	\$7335.00
R1000	MicroScan recorder. 1000 inputs*, 160 outputs.	\$8280.00



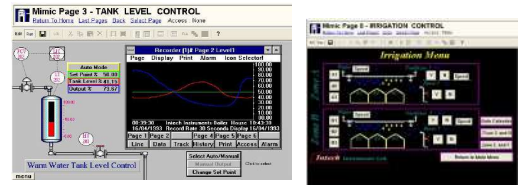
* Maximum recorder lines = 1000 made up of 100 pages with 10 lines on each page.

MicroScan Software "Tag Packages". Comes complete with USB dongle. Includes: Recorder, Mimics, Shimaden and DDE.

MODEL	DESCRIPTION	PRICE
T50	MicroScan software package. 50 tags.	\$2674.00
T75	MicroScan software package. 75 tags.	\$3162.00
T150	MicroScan software package. 150 tags.	\$4586.00
T300	MicroScan software package. 300 tags.	\$5985.00
T500	MicroScan software package. 500 tags.	\$7380.00
T750	MicroScan software package. 750 tags.	\$8790.00
T5000	MicroScan software package. 5000 tags.*	\$10190.00
Note 1	Mimics (Only available with Tag option): No. of pages: 100 max. / I/O per page: 380 max. Controllers: 500 on/off software controllers, Each with individual: Set point, Differential adjustment, Deviation alarms.	
SYM	Symbol Factory Library for Mimics images.	POA

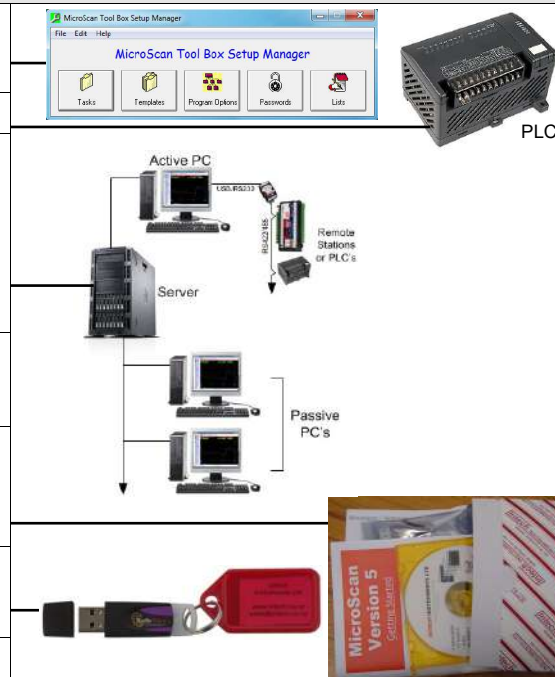


* Maximum Tags = 5000 (max I/O = 5000).



Optional Software Modules.

TB+	MicroScan Tool Box. Data transfer, mathematical formulas, time clocks, step controller, recipes, data base and remote editor.	\$1840.00
PLC	PLC Interface - specify PLC make and model to confirm.	\$630.00
P1	Network Drivers: Active PC will support 1 Passive PC.	\$998.00
P2	Active PC will support 2 Passive PC's.	\$1525.00
P3	Active PC will support 3 Passive PC's.	\$2050.00
P4	Active PC will support 4 Passive PC's.	\$2580.00
P5	Active PC will support 5 Passive PC's.	\$3070.00
P6+	Active PC will support 6 or more passive nodes.	\$3470.00
Version Upgrades (Example from V4 to V5). Price = 35% of the equivalent V5 list price including all modules. Plus New dongle or License as per below.		
Moving to a larger package and/or modules combination. Price is the dollar difference between packages plus \$230 plus a new Dongle or License Key as per below. Also if increasing modules.		Price difference + \$230.00
USB Dongle. Includes license key. Notes: Old Sentinel-C dongles are now redundant and must be returned to Intech. Software Locking is NOT available!		\$480.00
New MicroScan License Key. Charge for issuing new license key (License only, no dongle).		\$198.00



MicroScan Cloud Access made eze



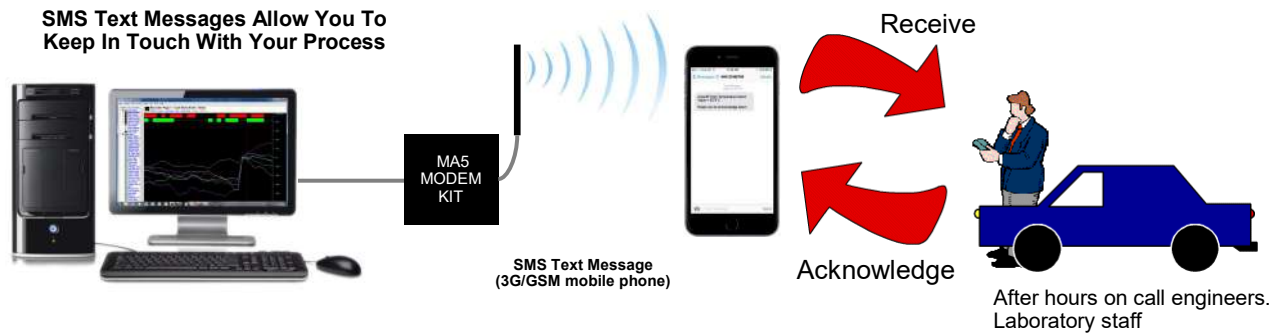
Now you can have your current and historical MicroScan data on all your portable devices. The secure and professional web interface is managed by eze System, with multiple servers located in three geographically separate data centres worldwide, so your data is safe and accessible from anywhere in the world.

The MicroScan Cloud system is designed to be easy to deploy and can be used for anything from a single temperature probe, to a multiple combination system. Monitor, log, alarm, control and automate – all in a single integrated system via a web browser.

Alarms: Text (SMS), email, voice and alarm relay.



MicroScan MA5 Mobile Alarm and SMS Text Messaging



MicroScan MA5 (Mobile Alarming 5) software. Runs with MicroScan <u>Version 5</u> software & Microsoft .NET 2.0		
MODEL	DESCRIPTION	PRICE
MA5 (Software)	For MicroScan V5 software packages.	POA
MA5-Lite (Software)	For MicroScan V5 R8, R16 and R32 packages only. Includes all features of MA5.	POA
MA5 Modem Kit* (Hardware)	3G/GSM message hardware kit. * Does not include SIM card or ongoing provider charges.	POA



Features

- ◆ Receive Alarms.
- ◆ Acknowledge Alarms.
- ◆ Check Alarms Acknowledged.
- ◆ Change Alarm setpoints, Delay, Enable/Disable.
- ◆ Monitor Critical Parameters.
- ◆ Request Plant Parameters.
- ◆ Change Plant Parameters.
- ◆ Activate Plant Equipment.

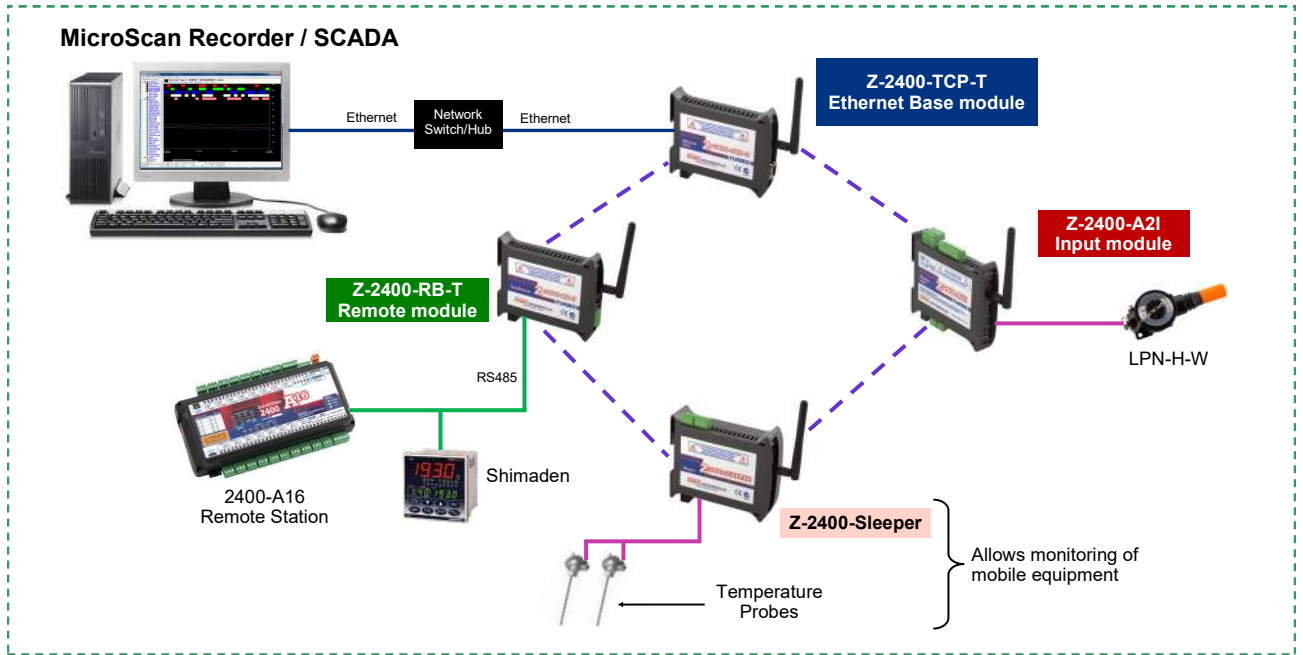
- ◆ Alarms immediately sent as SMS text message to mobile phone.
- ◆ Alarms can be sent sequentially until acknowledged.
- ◆ Alarm message acknowledgment from mobile phone by returning alarm SMS text message.
- ◆ Request any plant parameter by sending a SMS text message from mobile phone.
- ◆ A log file is kept of all communications and is stored on the PC for audit tracking.
- ◆ Daily email reports of activity.

Wireless MicroScan Connections - ZigBee® Z-2400 Series

ZigBee® is a new technology designed for short range mesh networking that allows easy expansion. Ideal for sites where wireless is preferred over cable connections. Applications: Hospitals, Labs, Blood banks and Industry.

Wireless ZigBee® Technology empowers MicroScan SCADA

Example schematic showing MicroScan Software and the 2400-A16 Remote Station plus Sleeper for mobile monitoring:



Z-2400 Series

* 2.4GHz high gain antennas available on page 35 >>

Common Specifications:

Wireless standard:	IEEE 802.15.4-2006.	Power supply:	9~36Vdc.
Wireless range:	Up to 100m max line of sight.*	Power Consumption:	5 VA.
Wireless Frequency:	2405~2485MHz.		
Frequency Hopping:	16 Channels.		

MODEL	DESCRIPTION	PRICE
Z-2400-RB-T	Base or Remote Module. Communications: RS232, RS422, RS485. Duty: Configurable as Base or Remote. Embedded protocol support: MicroScan default ASCII. Wireless Power: 100mW.	\$486.00
Z-2400-TCP-T	Ethernet Base Module. Communications: Ethernet TCP/IP. Duty: Base only. Embedded protocol support: MicroScan TCP. Wireless Power: 100mW.	\$795.00
Z-2400-A2I	Input Module. Set as MicroScan mode. Universal channel data inputs: 2x RTD/Tc/mV/V/mA/Pseudo Digital. Digital inputs: 4x 0~1Hz. Wireless Power: 100mW. Digital outputs: 2x 30Vdc, 1A max. Relay outputs: 2x 250Vac/30Vdc, 5A max.	\$448.00
Z-2400-Sleeper	Sleeper Module. Universal channel data inputs : 2x RTD/Tc/mV/V/mA/Pseudo Digital. Selectable update rate: 1, 2, 5, 15, 30, 60 minutes. Wireless Power: 1mW. Embedded protocol support: MicroScan default ASCII. Battery life: Approx 2 years life when wake up interval set to 2 minutes. Poor signal strength reduces battery life. Option to permanently power with plug pack power supply.	\$618.00
Z-2400-BAT	Replacement battery for Z-2400-Sleeper.	\$69.00
XU-USB	USB Programming Key for programming Z-2400-Sleeper and Z-2400-A2I . (Same Key as used for programming XU Series transmitters, 2400-A16, IN-uP4, uP4-Din and Z-2400-A2 Series).	\$88.00
PSW-10-F	Instrument Quality Power Supply. Output: 24Vdc, 1.0A, Input power supply: 100~264Vac.	\$49.00

For Comms converters with the **Z-2400-RB-T** (set as Base) See page 21 <<



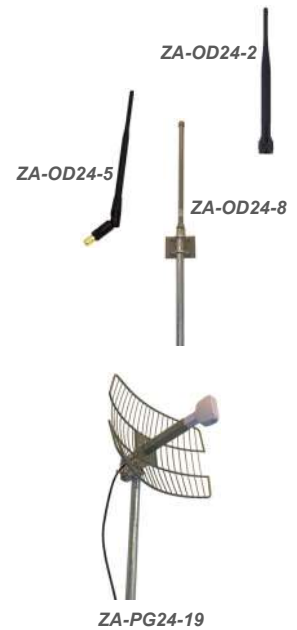
Note: ZigBee® is a Registered trademark of the ZigBee Alliance,

All prices are in NZ\$, are GST exclusive and are subject to change without notice.

Wireless MicroScan Connections - 2.4GHz High Gain Antennas

Antenna Options (Used when greater distances are involved):

MODEL	DESCRIPTION	PRICE
ZA-OD24-5	2.4Ghz Indoor Antenna for Z-2400 Series. Indoor 5.5dBi Omni Directional Rubber Duck Antenna.	\$41.00
ZB-P-45	Extension Coax for Z-2400 Series Indoor Antenna. RP-SMA Type with Bulkhead 0.2m.	\$32.00
ZA-OD24-2	2.4Ghz Outdoor Antennas for Z-2400 Series. Outdoor 2.2dBi Omni Directional Whip Antenna c/w 0.5m coax cable with bulkhead.	\$112.00
ZA-OD24-8	Outdoor 8dBi Omni Directional Monopole Antenna c/w 3m coax cable.	\$230.00
ZA-PG24-19	Outdoor 19dBi Directional Parabolic Grid Antenna c/w 3m coax cable.	\$190.00
ZC-OD24-2	2.4Ghz Outdoor Antennas for Z-2400 Series with Longer Coax. Outdoor 2.2dBi Omni Directional Whip Antenna c/w 3m coax cable.	\$138.00
ZC-OD24-8	Outdoor 8dBi Omni Directional Monopole Antenna c/w 10m coax cable and 0.5m coax with bulkhead.	\$319.00
ZC-PG24-19	Outdoor 19dBi Directional Parabolic Grid Antenna c/w 10m coax cable and 0.5m coax with bulkhead.	\$279.00



Z-2400 Turbo (100mW) Performance (2.4GHz).

- Indoor Urban: With Supplied Whip - 50m Typical.
- Outdoor Ideal* Conditions: With ZA-OD24-8 - Up to 8km.

Notes:

- *Ideal conditions = mounted on 2 metre pole with line of sight and no surrounding trees or buildings, using supplied coax cable only.
- Test results show impressive distance results under ideal line of sight conditions. These distances are rapidly reduced when obstructions to 'line of sight' are experienced.
- Use only Intech ZA/ZC Antennas with Intech wireless modules.
- For outdoor antennas, the supplied coax-seal must be used between exposed connections to protect from moisture corrosion.
- Refer to the Antenna Installation Guide for further wireless considerations.

Communication Modules for RS485/422 - Digi® Radio Modems

The Digi® Radio Modems are used for long-range, low speed wireless communications. Powered by DigiMesh® networking protocol, featuring dense network operation using mesh technology with frequency hopping spread spectrum capability. Operating in the 900MHz license-free ISM band (Industrial, Scientific and Medical bands), the Digi® Radio Modems can wirelessly connect a variety of Intech RS485/422 devices across many applications including remote monitoring.

MODEL	DESCRIPTION	PRICE
DIGI485	Digi® Radio Modem for RS485/422	\$535.00 each



Example of Digi Radio Modem Connections:



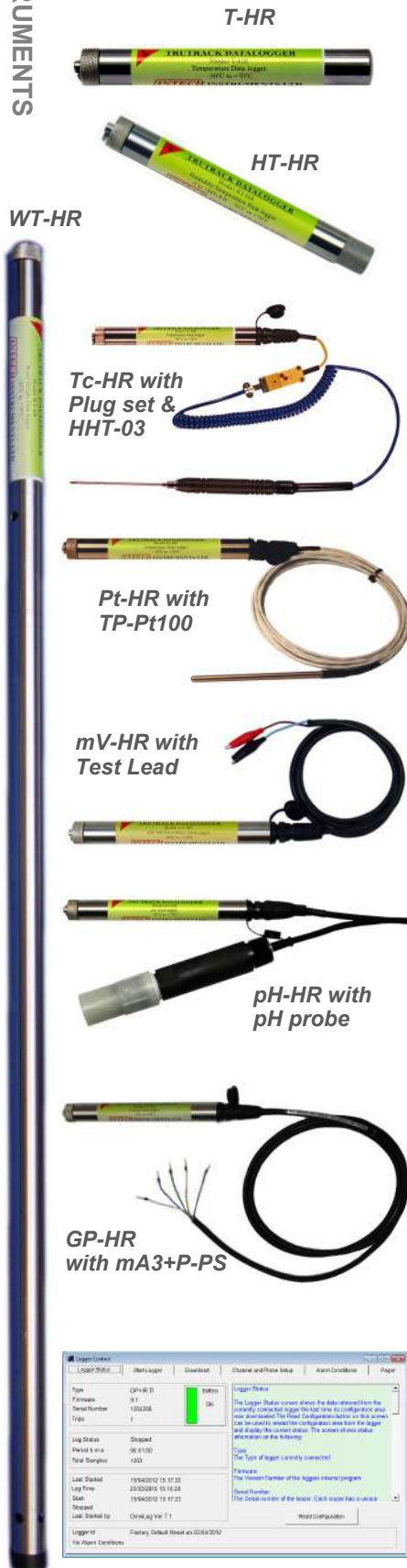
Note: Digi® and DigiMesh® are Registered trademarks of Digi International Inc.

All prices are in NZ\$, are GST exclusive and are subject to change without notice.

Data loggers

HR Series:

- ◆ Stainless steel case.
- ◆ IP66 rating (excludes Humidity types).
- ◆ One to Five year battery life (depending on usage).
- ◆ High Accuracy 12 bit or 16 bit.
- ◆ Over 500,000* readings can be stored!
- ◆ Sampling rate from 1 sec to 10 hrs.



MODEL	DESCRIPTION	PRICE
T-HR	Single temperature. Internal temperature sensor, range -30~70°C.	\$380.00
HT-HR	Humidity and temperature. Humidity and internal temperature sensor, range -30~70°C.	\$465.00
Tc-HR	Dual temperature, Thermocouple (does not include probe). One internal and one external temperature sensor. Internal temperature sensor, range -30~70°C. External temp. sensor, Types J, K, N, R, T. Ranges -250~1760°C.	\$440.00
HHT-03	Type K temperature probe for Tc-HR. Range -30~300°C. Spear probe 2m pvc cable with handle & Mini plug. Others available, refer to temperature probe section.	\$43.00
Tc-HR Plug Set	70mm lead (specify Thermocouple type). Includes Switchcraft plug (logger end) and Mini jack (connects to a T/c Mini plug). Mini plugs are also available - see page 51 >>	\$48.00
Pt-HR	Dual temperature, RTD Pt100/Pt500/Pt1000 (does not include probe). One internal & one external temperature sensor. Internal temperature sensor, range -30~70°C. External temperature sensor, Pt100/Pt500/Pt1000 (-200~600°C).	\$450.00
TP-Pt100	Pt100 temperature probe for Pt-HR. Range -100~150°C. 4.7 x 100mm SS probe with 2m tefzel cable.	\$108.00
mV-HR mV-HR Lead	Milli-volt. Ranges: ±50mVdc, ±100mVdc, ±200mVdc, ±400mVdc. Test Lead Set.	\$440.00 \$93.00
WT-HR-250 WT-HR-500 WT-HR-1000 WT-HR-1500 WT-HR-2000 316	Water level, air temperature and water temperature. Air temp: -30~70°C. Water temp: 0~45°C. *64,000 samples. To log water level between 0~0.25m. To log water level between 0~0.5m. To log water level between 0~1.0m. To log water level between 0~1.5m. To log water level between 0~2.0m. Option for 316 S/S for Salt water applications add.... Replacement battery available - please contact Intech.	\$635.00 \$655.00 \$725.00 \$780.00 \$830.00 \$123.00
pH-HR	pH and temperature. For use with a Pt100 temperature compensated pH probe (not included). See pages 54~57 for pH probes available from Intech >>	\$450.00
pH-HR Plug Set	Fit plug set to pH sensor for use with pH-HR logger.	\$48.00
GP-HR	4 Input General Purpose Logger. 3 Analogue inputs – individually configurable using Omni7 software. 1 Digital pulse input channel. Also has internal temperature sensor. *Now Over 1,000,000 8 bit samples: or over 500,000 12 bit samples!	\$495.00
mA1-PS mA3+P-PS ##VD3-PS	Standard External Sensors & Plug Sets for GP-HR. One 4~20mA or 0~20mA input. Three 4~20mA or 0~20mA inputs c/w One pulse input. Three DC voltage inputs. ## = Specify voltage up to 32Vdc. (Maximum voltage input for the GP-HR is 32Vdc (32VD3-PS) - for voltages >32Vdc use an intermediary transmitter like the PI-D).	\$58.00 \$80.00 \$80.00
L-PS Pt3-PS	Light energy cable Three Pt1000 temp probes: Temperature range -50~130°C. (Logger maximum Pt1000 temperature range is -100~400°C).	\$80.00 \$230.00
P100-HR-PS P300-HR-PS	Pressure sensor. Range = -15~100psi (Overload 200psi, Burst 500psi). Pressure sensor. Range = -15~300psi (Overload 600psi, Burst 1500psi). All pressure sensors have 1/8 inch NPT thread and 1500mm cable.	\$575.00 \$575.00
R-PS Flow-mA2-PS ACM-mA2-PS	One Slow Pulse for Rain Gauge input. Coil or open collector plus two 4~20mA inputs. Flow metering off the pump run contact plus two 4~20mA inputs.	\$60.00 \$125.00 \$110.00
Note: Please contact Intech for other available options.		
DLC3USB Omni7	Spare HR Series USB download cable (2m). Omni7 Software (supplied on Mini CD) (Free from Website)	\$126.00 \$34.00
HR-Battery mk4	Replacement HR Series Mark 4 Battery Kit.	\$55.00

View more Data loggers on pages 38 & 39 >>

Data loggers

HR Series loggers:

- ◆ Stainless steel case. IP66 rating (excludes Humidity types).
- ◆ Over 500,000* readings can be stored!
- ◆ One to Five year battery life (depending on usage).
- ◆ Using the logger in temperatures below -5°C (23°F) will reduce battery life.
- ◆ A **DLC3USB** [USB] **download cable** is required to connect HR Series loggers to a computer. Download cable length = 2m.
- ◆ Sampling rate from 1 sec to 10 hrs in 1 sec increments.
- ◆ Each channel can be set to log all or any of the following:
 1. Instantaneous readings.
 2. Average reading.
 3. Maximum reading.
 4. Minimum reading.
- ◆ **Warning:** When using the Average, Maximum or Minimum reading(s), the logger reads the attached sensor(s) every second. **This will reduce battery life.**
- ◆ Start modes:
 1. On date/time.
 2. Immediately.
 3. On input condition.
- ◆ Stop modes:
 1. On date/time.
 2. When memory is full.
 3. Loop around (continues logging).
- ◆ Continually connected to the computer for instant readings.
- ◆ Interrogation over phone lines using a standard modem link.
- ◆ Send SMS messages on an alarm condition.

GP-HR General purpose four channel logger:

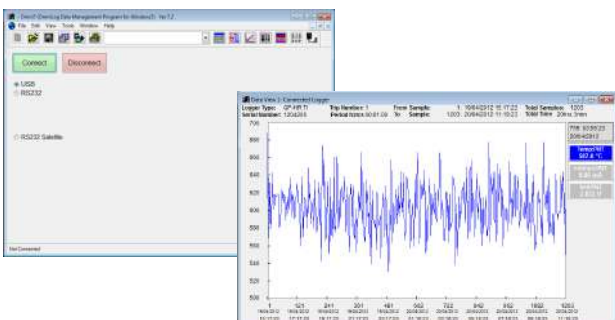
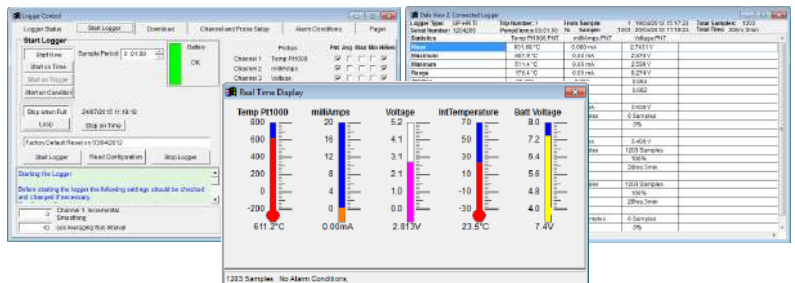
Select any (up to four) of the following channels:

- ◆ **Three analogue** input channels, to log any combination of:
 1. Temperature.
 2. Humidity.
 3. Pressure.
 4. Light.
 5. Voltage.
 6. Current.
 7. Wind direction.
- ◆ **One digital** pulse input channel, to log:
 1. Rainfall.
 2. Wind speed.
 3. Flow.
 4. Counter (up to 65535).
 5. Frequency (up to 60 kHz).
- ◆ **Internal temperature** sensor channel may be activated to log the ambient temperature of the logger.
- ◆ User replaceable battery.
- ◆ **Over 1,000,000 8 bit samples:**
or Over 500,000 12 bit samples!
Over 600 days logging 3x Hi-Res Channels every 5 minutes.



Omni7 Software:

- ◆ The Omni7 (OmniLog) Data Management software is an application for reading, displaying, analysing, organising and exporting data that has been downloaded from TruTrack data loggers.
- ◆ Data can be read from data loggers or retrieved from previously saved data files.
- ◆ A connected data logger can be configured, calibrated, started, read and stopped by this application.
- ◆ Data retrieved from data loggers and previously saved data files can be viewed and printed in a values spread sheet list, as a graph or as a statistics report. These values, graphs and statistics can be displayed and printed for all data or from a user selected block of data.
- ◆ Data can also be exported in a large range of industry standard formats so as to be used by other applications.



- ◆ Battery Status.
- ◆ Graph & Values.
- ◆ Modem Control.
- ◆ Pager.
- ◆ Exporting Datasets.
- ◆ Offset Calibration.
- ◆ Pager Alarm.
- ◆ Graph Colours.
- ◆ Sample Period.
- ◆ Graph.
- ◆ Joining Graphs.
- ◆ Channel & Probe Setup.
- ◆ Reports.
- ◆ Light Energy.
- ◆ Change Dataset units.
- ◆ Formats.
- ◆ Pulse Input.
- ◆ High Precision Graph Draw.
- ◆ Print.
- ◆ Leaf Wetness.
- ◆ Quick Graph Draw.
- ◆ Overviews.
- ◆ Probe Selection.
- ◆ Typographical Conventions.
- ◆ Dew Point.
- ◆ Saving Log Files.
- ◆ Calibration Procedures.
- ◆ Trips.
- ◆ Serial Number.
- ◆ Humidity Calibration.
- ◆ Tutorial.
- ◆ Dataset History.
- ◆ Light Intensity Calibration limits.
- ◆ Log File.
- ◆ Wind Chill Factor.
- ◆ Units & Scaling.
- ◆ Log Status.
- ◆ Real Time Screen.
- ◆ Displaying Real Time readings.
- ◆ Multi channel.
- ◆ Viewing Data in values.

Multi Purpose Data logger

GP-MC Multi purpose data logger:

The GP-MC is a high resolution (12 bit) multi purpose data logger with eight analogue and two digital pulse inputs. It also provides a Start on Trigger input and two alarm outputs. The logger also has an integral internal temperature sensor which can be used to log ambient temperature if desired.

A **DLC5USB** [USB] download cable is required to connect the GP-MC logger to a computer.



GP-MC



MODEL	DESCRIPTION	PRICE
GP-MC	10 Input Multi Purpose Data Logger. 8 Analogue inputs – individually configurable using Omni7 software. 2 Digital pulse input channel. 1,000,000 8 bit samples: 500,000 12 bit samples.	\$750.00
Seahorse	Option: IP66 Weatherproof enclosure. <i>Add</i>	\$340.00
Standard External Sensors & Plug Sets for GP-MC: Others available - contact Intech. GP-MC inputs are individually configurable using Omni7 software. Each input requires conditioning using a 'Probe set'. Probe set prices are per input as follows:		
mA-MC-PS	One 4~20mA or 0~20mA input.	\$45.00
5VD-MC-PS	One 0~5Vdc input.	\$56.00
10VD-MC-PS	One 0~10Vdc input. Maximum voltage input for the GP-MC is 32Vdc (32VD-MC-PS) - for voltages >32Vdc use an intermediary transmitter like the PI-D .	\$56.00
Pt1000-MC-PS	Pt1000 temperature probe: Range -50~130°C. (Logger maximum Pt1000 range is -100~400° C).	\$109.00
P100-MC-PS	Pressure sensor. Range = -15~100psi (Overload 200psi, Burst 500psi)	\$550.00
P300-MC-PS	Pressure sensor. Range = -15~300psi (Overload 600psi, Burst 1500psi) All pressure sensors have 1/8 inch NPT thread and 1500mm cable.	\$550.00
Flow-MC-PS	Coil or open collector.	\$125.00
ACM-MC-PS	Flow metering off the pump run contact.	\$110.00
Note: Please contact Intech for other available options.		
DLC5USB	Spare GP-MC USB download cable (2m).	\$126.00
Omni7	Omni7 Software (supplied on Mini CD) (Free from Website)	\$34.00

LCD Data loggers

LCD Series loggers are handheld, high resolution (16 bit) data loggers with a liquid crystal display. The LCD display allows the convenience of viewing realtime readings without having to connect the logger to a computer. The logger contains an integral internal temperature sensor which can be used to log ambient temperature separately from the loggers main function if desired.

High accuracy and large storage capacity make the LCD series ideal for most industrial and commercial applications. LCD series loggers are designed for indoor use (IP40), but can be supplied with an optional IP66 Weather Proof Enclosure for outdoor use.

All TruTrack loggers will connect directly to a modem for remote downloading of data and can also send SMS messages on an alarm condition.

Features:

- ◆ Temperature can be set to any combination of Point, Average, Maximum & Minimum readings.
- ◆ Storage capacity of over 500,000 samples!
- ◆ High accuracy 16 bit.
- ◆ One to five year battery life (depending on usage), user replaceable. Data is retained in the event of battery failure. Battery status monitor on LCD display and in Omni7 software.
- ◆ **Warning:** When using the Average, Maximum or Minimum reading(s), the logger reads the attached sensor(s) every second. **This will reduce battery life.**
- ◆ User selectable sampling rate from 1 second to 10 hours in 1 second increments.
- ◆ Operating range of -20°C to +70°C (-4°F to +158°F).
- ◆ Using the logger in temperatures below -5°C (23°F) will reduce battery life.
- ◆ Dimensions = 130mm x 80mm x 30mm.
- ◆ Optional IP66 weatherproof logger enclosure available for outdoor use.
- ◆ A **DLC8USB** [USB] **download cable** is required to connect LCD Series loggers to a PC.

MODEL	DESCRIPTION	PRICE
HT-LCD	Humidity and temperature. Range -30~70°C. Internal humidity and internal temperature sensor. ±3.0%RH accuracy from 20%RH to 80%RH.	\$475.00
THT-LCD	Humidity and dual temperature. Range -30~70°C. (Includes HT11-Probe). External humidity with temperature, one internal temperature sensor.	\$725.00
HT11-Probe	Digital humidity sensor giving ±3.0%RH accuracy from 20%RH to 80%RH. Humidity sensor probe cable length is 1.5m.	\$260.00
Tc-LCD	Accepts type J, K, N, R and T thermocouple probes with Universal thermocouple connector socket. Ranges -250~1760°C. (Does not include probe).	\$455.00
HHT-03	Type K temperature probe for Tc-LCD , Range -30~300°C. Spear probe 2m pvc cable with handle & mini plug. Others available, please contact Intech. See page 50/100.	\$43.00
Pt-LCD	External RTD temperature sensor, range -200~600°C. (Does not include probe). Accepts Pt100, Pt500 and Pt1000 probes.	\$455.00
TP-Pt100-LCD	Pt100 temperature probe for Pt-LCD , range -100~150°C. 4.7 x 100mm SS probe with 2m tefzel cable.	\$150.00
P-LCD	Pressure. Can display the pressure in kPa, Bar or psi on the LCD screen (more pressure display options are available using Omni7 software). [Does not include Pressure sensor.]	\$455.00
P100-PS	Pressure sensors available for the P-LCD - 500mm cable length: Pressure sensor. Range = -15~100psi (Overload 200psi, Burst 500psi).	\$390.00
P300-PS	Pressure sensor. Range = -15~300psi (Overload 600psi, Burst 1500psi). All pressure sensors have 1/8 inch NPT thread.	\$390.00
DLC8USB	Spare LCD Series USB download cable (2m).	\$126.00
Omni7	Omni7 Software (supplied on Mini CD) (Free from Website)	\$34.00
OPTION		Add Price:
Seahorse	IP66 weatherproof enclosure for LCD Series logger outdoor use.	\$340.00



End view of THT-LCD with external probe connected.



Environmental Monitoring Systems

Environmental Monitoring Systems are fully scalable, providing the flexibility of monitoring only the inputs needed for a given application. The systems use our popular and well tested general purpose data loggers, which means that inputs other than weather types can also be logged if required [E.g. 4~20mA or Voltage signal(s)]!

SMALL System



GP-HR-LB with Air Temp and Humidity sensors in Shield & Solar Radiation sensor.



MODEL	DESCRIPTION	PRICE
GP-HR-LB	GP-HR in L-Bar with attachment plate and two 50mm U bolts.	\$645.00
Options:		
add any three of the following	add Ground Temp. add Air Temp and Humidity in Shield (Note: counts as 2 channels). add Leaf Wetness. add Solar Radiation. add Wind Direction. add 4~20mA input. add Voltage input.	\$116.00 \$530.00 \$315.00 \$220.00 \$610.00 \$80.00 \$80.00
add any one of the following	add Windspeed. add Rain Gauge input. add 1mm Rain Gauge. add 0.2mm Rain Gauge.	\$570.00 \$80.00 \$285.00 \$398.00
T-BAR	If you require Windspeed and Direction, use a T-Bar rather than an L-Bar.	\$55.00
Add download cable: DLC3USB Omni7	Spare DLC3USB USB download cable (2m). Omni7 Software (supplied on Mini CD) (Free from Website)	\$126.00 \$34.00

<< Please refer to pages 36 & 37 for more information on the **GP-HR** general purpose data logger.

MEDIUM System



Optional IP66 Logger Enclosure



MODEL	DESCRIPTION	PRICE
GP-MC	10 Input Multi Purpose Data Logger. Option: IP66 Weatherproof Logger enclosure. add External Socket on Logger enclosure.	\$750.00 \$340.00 \$77.00
Options:		
add any eight of the following	add Ground Temp. add Air Temp and Humidity in Shield (Note: counts as 2 channels). add Leaf Wetness. add Solar Radiation. add Wind Direction. add 4~20mA input. add Voltage input.	\$116.00 \$530.00 \$315.00 \$220.00 \$610.00 \$80.00 \$80.00
add any two of the following	add Windspeed. add Rain Gauge input. add 1mm Rain Gauge. add 0.2mm Rain Gauge.	\$570.00 \$80.00 \$285.00 \$398.00
add any five of the following	add Air Temp, Humidity, Pressure in Radiation Shield. add Air Temp, Humidity in Radiation Shield.	\$790.00 \$640.00
Mounting	add L-Bar with attachment plate and two 50mm U bolts. add T-Bar with attachment plate and two 50mm U bolts.	\$215.00 \$270.00
Add download cable: DLC5USB Omni7	Spare GP-MC USB download cable (2m). Omni7 Software (supplied on Mini CD) (Free from Website)	\$126.00 \$34.00

<< Please refer to page 38 for more information on the **GP-MC** multi purpose data logger.

4~20mA Weather Sensor Transmitters

Weather Sensor Transmitters are a tool for the observation and recording of meteorological data. The sensors can monitor air temperature, humidity, barometric pressure, light intensity, wind speed, wind direction and rainfall. The output signals from the sensors are industrial standard 4~20mA (loop powered). This allows for easy integration into a SCADA or PLC monitoring system.

Individual Sensors:		
MODEL	DESCRIPTION	PRICE
Weather Sensor Transmitters. All with 4~20mA output signal (loop powered).		
H-CL-E	Humidity sensor c/w 1.5m cable (0~100%).	\$275.00
T-CL-E	Temperature sensor c/w 1.5m cable (-30~70°C).	\$235.00
BP-CL-E	Barometric Pressure sensor c/w 1.5m cable (700~1100hPa).	\$275.00
LE-CL	Light Energy sensor c/w base plate and 5m cable (0~1500 w/m ²).	\$515.00
WS3-CL	Wind speed (3 cup Anemometer) c/w 5m cable (1.5m/sec start, 20mA = 60m/sec).	\$798.00
WS6-CL	Wind speed (6 cup Anemometer) c/w 5m cable (0.45m/sec start, 20mA = 80m/sec).	\$1135.00
WD-CL	Wind direction c/w 5m cable (0°~360°). Damping: 2min Nominal over 90°.	\$798.00
RAIN-CL	0.2mm Rain Gauge (4~20mA output via included PI-F transmitter, 0~55mm/hr).	\$980.00
Mounting Options:		
LB	L-Bar with attachment plate and two 50mm U bolts.	\$140.00
TB	T-Bar with attachment plate and two 50mm U bolts.	\$190.00
Shield	Solar Radiation Shield - used for more accurate measurement of temperature, humidity and barometric pressure sensors (Does not include Sensors). Must be attached to an L-Bar or T-Bar.	\$330.00



Other Output types available on request,



*Solar Radiation Shield
(shown attached to LB L-Bar)*



LE-CL
*Solar Radiation /
Light Energy
(Pyranometer)*



WD-CL
Wind Direction



Note:
The L-Bar and T-Bar mounting arms have an attachment plate with holes that can be used for mounting to 50mm (2inch) or 25mm (1inch) diameter pipe or bolting to posts or buildings. The L-Bar and T-Bar are supplied complete with two 50mm (2inch) U bolts.

Fully Mounted Options:		
MODEL	DESCRIPTION	PRICE
WS3-WD-TB-CL	Weather Sensor Transmitters. 4~20mA Outputs. Wind Direction Damping = 2min Nominal over 90°.	\$1840.00
WS3-WD-THP-TB-CL	Wind speed 3 cup (starting speed = 1.5m/sec, 20mA = 60m/sec), wind direction, mounted on T-Bar mounting arm c/w 5m cable.	\$3080.00
THP-LB-CL	Wind speed 3 cup (starting speed = 1.5m/sec, 20mA = 60m/sec), wind direction, Temperature, Humidity & Barometric Pressure sensors housed in Solar Radiation Shield mounted on T-Bar mounting arm c/w 5m of cable.	\$1373.00
Options:		
LE-CL	Light Energy Sensor.	\$515.00
WS6	Fit WS6 (Wind speed 6 cup), instead of WS3 on above T-Bar options (for lower starting speed = 0.45m/sec, 20mA = 80m/sec).	\$340.00



WS3-WD-THP-TB-CL

Miscellaneous



RTD Elements complete with tails.		
CODE	DESCRIPTION	PRICE
Pt100-FF	Flat film (Standard)	
Pt100-FF-3-350	Pt100 5 x 2mm Class A with 350mm tails - 2 wire	\$41.00
Pt100-FF-3-600	Pt100 5 x 2mm Class A with 350mm tails - 3 wire	\$49.00
Pt1000-FF	Pt1000 10 x 2mm Class A with 600mm tails - 3 wire	\$58.00
	Pt1000 10 x 2mm Class A with 350mm tails - 2 wire	\$41.00
Pt100-FF-DX	Flat film Duplex. Pt100 5 x 2mm Class A with 350mm PTFE tails - 4 wire	\$82.00
Pt100-min	Ceramic miniature.	
Pt100-min-3	Pt100 1.6ø x 15mm Class A with PTFE tails 350mm - 2 wire	\$59.00
	Pt100 1.6ø x 15mm Class A with PTFE tails 350mm - 3 wire	\$60.00
Pt100-std	Ceramic standard	
Pt100-std-3	Pt100 3.0ø x 15mm Class A with PTFE tails 350mm - 2 wire	\$44.00
	Pt100 3.0ø x 15mm Class A with PTFE tails 350mm - 3 wire	\$49.00
Pt100-DX	Ceramic Duplex. Pt100 3.0ø x 15mm Class A with PTFE tails 350mm - 4 wire	\$104.00

Note: RTD Elements only - available on request.



Heat transfer paste.		
Silicone based Heat Transfer compound with exceptional thermal conductivity. Wide operating temperature range with excellent non-creep properties make it ideal for numerous applications, where thermal control is necessary.		
HSC	Silicone based Heat Transfer compound. 35ml Syringe. Wide operating temperature range: -50~200°C. Excellent non-creep characteristics. Low evaporation weight loss. Excellent thermal conductivity even at high temperatures: 0.9 W/m.K.	\$35.00

Surface Pt100 Patch



MODEL	DESCRIPTION	PRICE
Pt100 Patch	Surface Pt100 Patch. Pt100 Class B in moulded silicone rubber patch. Dimensions: 40mm x 13mm x 5mm. PFA insulated screened cable 7/0.1mm x 2m with 75 mm tails. Temperature range: -50~150°C. Oil and chemical resistant.	\$115.00

Pockets, Flanges, Fittings

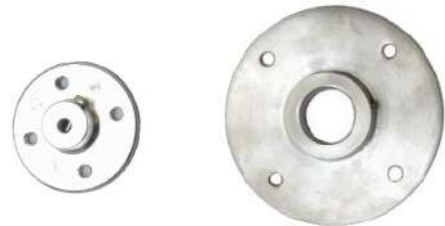
Pockets.		Welded construction.
Stock pockets.		Others sizes on request.
CODE	DESCRIPTION	PRICE
P1-xx	Pocket Fabricated construction. Stem: Diameter: OD 9.5mm, ID 7mm. Lengths: 70, 120, 170, 220, 270mm. 316 Stainless steel. Process connection: 1/2 inch BSPT. Instrument connection: 1/4 inch BSPP.	\$69.00
P2-xx	Pocket Fabricated construction. Stem: Diameter: OD 9.5mm, ID 7mm. Lengths: 120, 170, 220, 270mm. 316 Stainless steel. Process connection: 1/2 inch BSPT. Instrument connection: 1/2 inch BSPP.	\$87.00
xx = length.		
Flanges		
F1	Sliding flange small. Diameter: OD 50mm, ID 4.8mm, 6.0mm or 6.4mm	\$13.00
F2	Sliding flange large. Diameter: OD 100mm, ID 22mm.	\$145.00
Compression glands.		Stainless steel.
A range of glands are held in stock, some are listed below.		
S1	Compression gland. 1/4" bore 1/4"BSP.....	\$25.00
S2	Compression gland. 1/4" bore 1/2"BSP.....	\$38.00
S3	Compression gland. 3/16" bore 1/8"BSP.....	\$42.00
S4	Compression gland. 3mm bore 1/4"BSP.....	\$38.00
S5	Compression gland. 6mm bore 1/4"BSP.....	\$25.00
S6	Compression gland. 1/8" bore 1/4"BSP.....	\$39.00



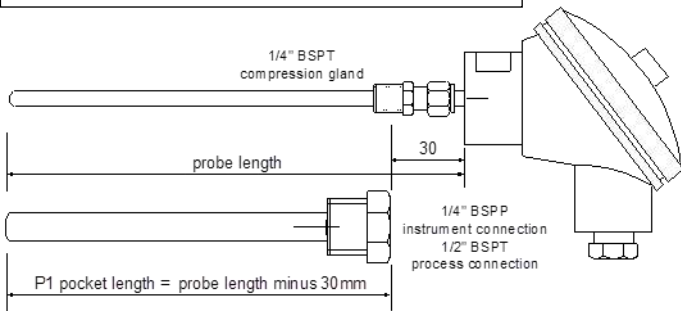
P1 pocket



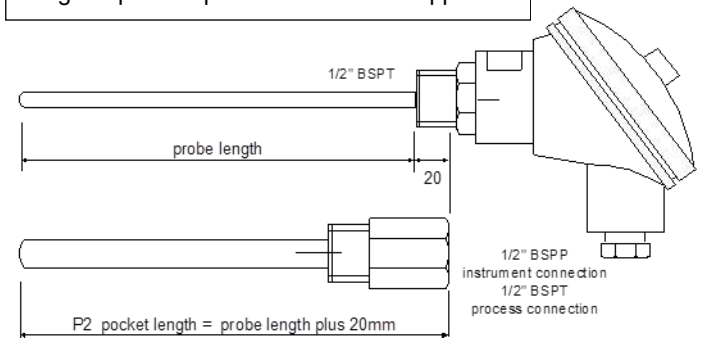
P2 pocket



The **P1 pocket length**, relative to probe length, using a compression gland for probe support.



The **P2 pocket length**, relative to probe length, using the probe's process thread for support.



Barstock Thermowells

Barstock threaded thermowells.		Machined from one piece of material.
CODE	DESCRIPTION	PRICE
BT-50	Barstock threaded thermowells. 316 Stainless steel. Process connection: 1/2 inch BSPT. Instrument connection: 1/2 inch BSPP. Stem: Diameter: OD 15mm, ID 6.5mm. Length: 50mm for 75mm probe.	\$120.00
BT-75	Length: 75mm for 100mm probe.	\$153.00
BT-125	Length: 125mm for 150mm probe.	\$196.00
BT-xx	Other lengths available on request.	POA



RTD Probes with Integral Cable



RL-SIL



RL-PTFE



RL-PTFE
Shown with cable collar

Temperature sensor:

Standard:
Pt100, Class A.
(Higher grades available).
Others:
Pt500, Pt1000, Duplex, etc.

Cable:

Silicone rubber, Teflon, PVC.
3, 4 or 6 cores.

Probe:

Diameters from 3mm.
Mineral insulated optional.

**Pt100 probes with integral cable.
Stock probes. Others by request.**

CODE	DESCRIPTION	PRICE
RL-SIL	Probe with integral Silicone lead. Probe: 6.4mm 316 Stainless steel. Temp: min/max at probe tip: -30/180°C.	
-050-3	Probe length: 50mm Cable: 3m, 3 core Silicone	\$68.00
-100-3	Probe length: 100mm Cable: 3m, 3 core Silicone	\$68.00
-150-3	Probe length: 150mm Cable: 3m, 3 core Silicone	\$68.00
-150-5	Probe length: 150mm Cable: 5m, 3 core Silicone	\$72.00
-150-10	Probe length: 150mm Cable: 10m, 3 core Silicone	\$86.00
-150-20	Probe length: 150mm Cable: 20m, 3 core Silicone	\$118.00
RL-PFA	Probe with integral PFA Teflon lead. Cable: 2m, 3 core PFA Teflon. Probe: 4.7 x 100mm 316 Stainless steel. Temp: min/max at probe tip: -70/260°C.	\$110.00
RL-PTFE	Probe with integral PTFE Teflon lead. Cable: 2m, 3 core PTFE Teflon. Probe: 3 x 50mm 316 Stainless steel. Temp: min/max at probe tip: -70/260°C.	\$130.00
RL-PVC-B	Probe with wall bracket and integral lead. Cable: 2m, 3 core PVC. Probe: 6.4 x 70mm 316 S.S. 30x30mm bracket. Temp: min/max at probe tip: -10/80°C.	\$90.00
DB-SIL-N	Deep bone probe with hex nut. Cable: 7m, 3 core Silicone. Probe: 6.4 x 150mm 316 Stainless steel. Temp: min/max at probe tip: -30/180°C.	\$180.00
DB-SIL-T	Deep bone as above with T bar handle.	\$228.00
DB-SIL-R	Deep bone as above with 140mm ring handle.	\$228.00
CP-ARM	Carton Probe with T Bar handle. Cable: 3m Silicone with Armourflex. Probe: 6.4 x 150mm 316 Stainless Steel Temp: min/max at probe tip: -30/180°C.	\$340.00
	Fruit probe with Nylatron handle. Probe: 3.3 x 50mm 316 Stainless steel. Temp: min/max at probe tip: -30/150°C. Cable: 10m, 3 core PVC. Options: Probe diameters of 4.7 or 6.4mm. Other cable and lengths on request.	
FP-PVC-10	Fruit Probe, 3.3 x 50mm with 10m PVC cable.	\$138.00
FP-PVC-15	Fruit Probe, 3.3 x 50mm with 15m PVC cable.	\$155.00
FP-PVC-20	Fruit Probe, 3.3 x 50mm with 20m PVC cable.	\$172.00



RL-PVC-B



DB-SIL-N



DB-SIL-R - Shown with a ring handle and reduced tip.



DB-SIL-T - Shown with a T bar handle and reduced tip.



CP-ARM



FP-PVC-10

Sample probe shown with a cable support spring and spear tip.

RTD Probes with Terminal Heads



Pt100 probes with terminal heads. Powder packed. Stock probes. Others by request.		
CODE	DESCRIPTION	PRICE
RH-SH-xxx	Small head probe. Probe: Diameter: 6.4mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -70/260°C.	\$141.00
RHP-SH-xxx	Small head probe with 1/2"BSPT process thread. Probe: Diameter: 6.4mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -70/260°C.	\$172.00
RH-LH-xxx	Large head probe. Probe: Diameter: 6.4mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -70/260°C.	\$163.00
RHP-LH-xxx	Large head probe with 1/2"BSPT process thread. Probe: Diameter: 6.4mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -70/260°C.	\$194.00
RH-LH-TX-xxx	Large head probe. With In-head Non-Isolated transmitter. Probe: Diameter: 6.4mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -70/260°C.	\$261.00
MRH-SA-xxx	Mineral insulated small head. Probe: Diameter: 6.0mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -190/500°C.	\$333.00
MRH-LA-xxx	Mineral insulated large head. Probe: Diameter: 6.0mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -190/500°C.	\$343.00
MRHP-LA-xxx	Mineral insulated large head c/w process fitting. Probe: Diameter: 6.0mm 316 Stainless steel. Lengths: 100, 150, 200, 250, 300mm. Head: Cast alloy. Temp: min/max at probe tip: -190/500°C. Fitting: 1/2" BSP.	\$365.00

xxx = length.

Temperature sensor:
Standard:
Pt100, Class A.
(Higher grades available).
Others:
Pt500, Pt1000, Duplex, etc.

Probe:
Diameters from 3mm.
Powder packed (260°C Max).
Mineral insulated option (500°C Max) + High Vibration.
Fast response tip, Add \$60.00

Terminal heads:
Cast alloy. (Small and large).
Bakelite (Black) Small and large, Add \$4.00.
Polypropylene (White) Large only, Add \$4.00.
Machined stainless steel. Large only, Add \$140.00.

RTD transmitters: For large head probes only.
A range of In-Head transmitters are available:
Non-Isolated (XU2HN), Add \$98.00
Isolated (XU2HI), Add \$198.00
Non-Isolated (LPN-R-H), Add \$115.00
HART (T01-B), Add \$785.00

Temperature probe catalogue available on request.

Wall Mount RTD Probes

Temperature sensor:

Standard:

Pt100, Class A.
(Higher grades available).
Others:
Pt500, Pt1000, Duplex, etc.

Probe:

Diameters from 3mm.
Mineral insulated optional.
Fast response tip.

Terminal heads:

Cast alloy.
PVC conduit box.

RTD transmitters:

A range of In-Head transmitters are available:

Non-Isolated (XU2HN), Add \$98.00
Isolated (XU2HI), Add \$198.00
Non-Isolated (LPN-R-H), Add \$115.00
HART (T01-B-Ex), Add \$785.00



Wall mount Pt100 probes.		
Stock probes.		Others by request.
CODE	DESCRIPTION	PRICE
WMR-CB	Wall mount pvc conduit box probe. Probe: 6.4 x 100mm 316 Stainless steel. Head: PVC. IP44. Temp: min/max of probe: -20/80°C.	\$84.00
Gland	Optional cable gland	\$10.00
WMR-AL	Wall mount alloy head probe. Probe: 6.4 x 100mm 316 Stainless steel. Head: Cast alloy. IP67. Temp: min/max of probe: -40/110°C.	\$135.00

Jumo VIBROtemp - Screw-in Pt100 sensors with connector

Shockproof screw-in Pt100 sensors enable temperature measurement under pressure in motors, compressors, plant engineering and in ship building. Lloyd Application Category D Characteristic 2. The connection between the protection fitting and the connecting cable incorporates a locking system and has IP65 or IP69K protection rating when assembled.

The measuring insert is normally fitted with a Pt100 temperature sensor.

- ◆ For temperatures from -50 to +300°C.
- ◆ Highly resistant to shock and vibration.
- ◆ Connector locked in for reliable contact, IP65 or IP69K protection.



902040/10

902040/15

MODEL	DESCRIPTION	PRICE
902040/10	Pt100 RTD with AMP Plug connector. Two threads 1/2" BSP and 1/8"-27 NPT (specify when ordering).	\$205.00
902040/15	Pt100 RTD with Bayonet connector 1/8".	\$205.00
Accessories		
00308880	Cable Silicone for 902040/10.	\$78.00
00439715	Kit 6 part Din Bayonet for 902040/15.	\$40.00

Resistance to temperature table for Pt100 elements.

Platinum resistance at 0°C - 100 ohms.

Temp coefficient – 0.00385 ohms/ohm/°C.

°C	ohms	°C	ohms	°C	ohms	°C	ohms	°C	ohms	°C	ohms	°C	ohms
-200	18.49	-100	60.25	0	100.00	100	138.50	200	175.84	300	212.02	400	247.04
-190	22.80	-90	64.30	10	103.90	110	142.29	210	179.51	310	215.57	410	250.48
-180	27.08	-80	68.33	20	107.79	120	146.06	220	183.17	320	219.12	420	253.90
-170	31.32	-70	72.33	30	111.67	130	149.82	230	186.82	330	222.65	430	257.32
-160	35.53	-60	76.33	40	115.54	140	153.58	240	190.45	340	226.17	440	260.72
-150	39.71	-50	80.31	50	119.40	150	157.31	250	194.07	350	229.67	450	264.11
-140	43.87	-40	84.27	60	123.24	160	161.04	260	197.69	360	233.17	460	267.49
-130	48.00	-30	88.22	70	127.07	170	164.76	270	201.29	370	236.65	470	270.86
-120	52.11	-20	92.16	80	130.89	180	168.46	280	204.88	380	240.13	480	274.22
-110	56.19	-10	96.09	90	134.70	190	172.16	290	208.45	390	243.59	490	277.56
-100	60.25	0	100.0	100	138.50	200	175.84	300	212.02	400	247.04	500	280.90

Temperature probe catalogue available on request.

Sanitary RTD Probes



Sanitary Pt100 probes. Stock probes. Others by request.		
CODE	DESCRIPTION	PRICE
SR-TRI	Sanitary probe with Triclover® assembly.	
	Assembly: 2" triclover. Probe: 6.4 x 100mm 316 Stainless steel. Temp: min/max at probe tip: -70/260°C. Head: Large polypropylene (white). Machined stainless steel.	\$249.00 \$365.00
SR-RJT	Sanitary probe with RJT assembly.	
	Assembly: 2" RJT complete with nut. Probe: 6.4 x 100mm 316 Stainless steel. Temp: min/max at probe tip: -70/260°C. Head: Large polypropylene (white). Machined stainless steel.	\$294.00 \$410.00
SR-RN	Sanitary probe with running nut assembly.	
	Assembly: 3/4" BSPP. Probe: 6.4 x 100mm 316 Stainless steel. Temp: min/max at probe tip: -70/260°C. Head: Large polypropylene (white). Machined stainless steel.	\$264.00 \$380.00
Options for the above probes		Add
Heads	Large aluminium cast head.	n/c
	Large bakelite head (black)	n/c
	In head transmitter - Non Isolated (XU2HN).	\$98.00
	In head transmitter - Isolated (XU2HI).	\$198.00
Connection	M12x1 IP67 Male plug fitted.	\$35.00
Cable	Angled socket M12x1 with 2m PVC Cable.	\$30.00
Probe	Fast response tip.	\$60.00
	Duplex sensor.	\$42.00
Sockets	Short Socket for SR-RN Running Nut.	\$61.00
	Long Socket for SR-RN Running Nut.	\$90.00
	Teflon Crush Washer.	\$13.50
Certificate	For temperature response as below.	\$65.00

Temperature sensor:

Standard:

Pt100, Class A.
(Higher grades available).

Others:

Pt500, Pt1000, Duplex, etc.

Probe:

Diameters from 3mm.
Mineral insulated optional.
Fast response tip, Add \$60.00

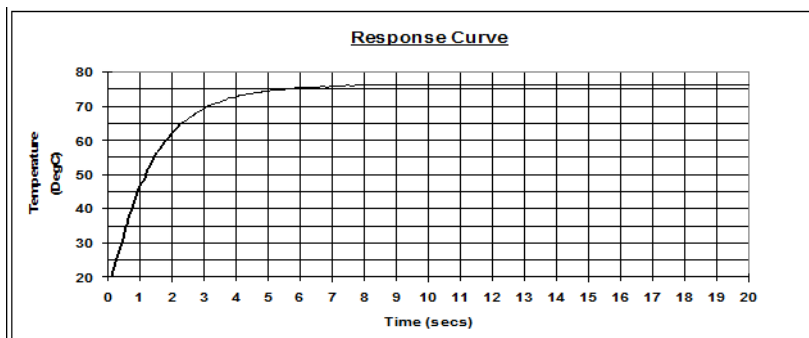
Assembly:

Triclover 1.5" - 2" - 2.5" - 3".
RJT 1.5" - 2" - 2.5" - 3".
Running nut 3/4" BSPP.

RTD transmitters:

A range of in-head transmitters are available:
Non-Isolated (XU2HN), Add \$98.00
Isolated (XU2HI), Add \$198.00
Non-Isolated (LPN-R-H), Add \$115.00
HART (T01-B-Ex), Add \$785.00

Probe type:	Pt100	High Speed Probe Temperature Response
Serial Number:	301001-02B	
Initial temperature.	18.46 °C	
Final temperature.	76.00 °C	
First time constant.	1.45 secs	Time taken for probe to rise from 0 to 63.2% of temperature change.
MAF response value.	1.46 secs	Response time of probe between 65 and 72°C when placed in a bath at 76°C water.



Pipe Size	RJT dia	TriClamp dia
1/2" DN15	--	25.2mm
3/4" DN20	--	25.2mm
1" DN25	41.2mm DN25	50.5mm
1 1/2" DN40	53.9mm DN38	50.5mm
2" DN50	66.7mm DN51	64.0mm
2 1/2" DN63	79.4mm DN63	77.5mm
3" DN75	92.0mm DN76	91.0mm

**Temperature probe catalogue
available on request.**

Mineral Insulated Thermocouple Probes with Terminal Heads



MTH-LHS
(Boiler probe)



MTHP-LH



MTH-LH



MTH-SH



MTHP-SH

Temperature sensor:

Standard calibration in:

- Type K. Type N.
- Type J. Type R.
- Type T. Type S.

Other types available.

Duplex thermocouples.

Probe:

- Diameters from 1mm.
- Mineral insulated.
- Isolated or bonded junctions.
- Sheath materials available in:
 - 310 stainless steel.
 - Inconel.
 - Nicrobell.
 - Ceramic.

Terminal heads:

- Cast alloy. (Small and large).
- Bakelite (Black) (Small and large).
- Polypropylene (White) (Large only, Add \$4.00).
- Machined stainless steel. (Large only, Add \$140.00).

Thermocouple transmitter: For large head probes only.

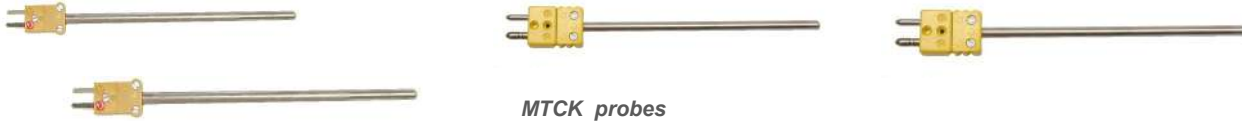
A range of In-Head transmitters are available:

- Isolated (XU2HI), Add \$198.00
- HART (T01-B-Ex), Add \$685.00

Type K thermocouple probes. Mineral insulated. Isolated junction. Stock probes. Others by request.		
CODE	DESCRIPTION	PRICE
MTH-SH-xxx	Small head probe. Probe: Diameter: 6mm 310 Stainless steel. Lengths: 100, 150, 200, 250, 300, 350mm Head: Cast alloy. Temp: Max at probe tip: 1100°C.	\$158.00
MTHP-SH-xxx	Small head probe with 1/2"BSPT process thread. Probe: Diameter: 6mm 310 Stainless steel. Lengths: 100, 150, 200, 250, 300, 350mm Head: Cast alloy. Temp: Max at probe tip: 1100°C.	\$185.00
MTH-LH-xxx	Large head probe. Probe: Diameter: 6mm 310 Stainless steel. Lengths: 100, 150, 200, 250, 300, 350mm. Head: Cast alloy. Temp: Max at probe tip: 1100°C.	\$168.00
MTHP-LH-xxx	Large head probe with 1/2"BSPT process thread. Probe: Diameter: 6mm 310 Stainless steel. Lengths: 100, 150, 200, 250, 300, 350mm Head: Cast alloy. Temp: Max at probe tip: 1100°C.	\$195.00
MTH-LHS-xxx Boiler probe	Large head probe with 1/2"BSPT compression gland. Head: Cast alloy. Probe: Diameter: 10.8mm. Length: 250mm. 310 SS. 1100°C. 350mm. \$257.00 450mm. \$285.00 Length: 250mm. Inconel. 1150°C. \$305.00 350mm. \$331.00 450mm. \$352.00 Length: 250mm. Nicrobell. 1200°C. \$405.00 350mm. \$425.00 450mm. \$495.00	
xxx = length		

Temperature probe catalogue available on request.

Mineral Insulated Thermocouple Probes with Leads and Connectors



MTCK probes

Type K thermocouple probes with connectors. Mineral insulated. Isolated junction. Stock probes. Others by request.		
CODE	DESCRIPTION	PRICE
MTCK-3	Mineral insulated probe with connector. Probe: Diameter: 3mm 310 Stainless steel. Length: 300mm. Temp: Max at probe tip: 1100°C. Connector: Mini plug.	\$88.00
MTCK-4.5	Mineral insulated probe with connector. Probe: Diameter: 4.5mm 310 Stainless steel. Length: 300mm. Temp: Max at probe tip: 1100°C. Connector: Standard plug.	\$100.00
MTCK-6	Mineral insulated probe with connector. Probe: Diameter: 6mm 310 Stainless steel. Length: 300mm. Temp: Max at probe tip: 1100°C. Connector: Standard plug.	\$105.00

Temperature sensor:
Standard calibration in:
Type K.
Type J.
Type T.
Duplex thermocouples.

Probe:
Diameters from 1mm.
Mineral insulated.
Isolated or bonded junctions.
Sheath materials available in:
310 stainless steel.
Inconel.
Microbell.

Connectors:
Mini plug.
Mini jack.
Standard plug.
Standard jack.
Standard available in high temp.

Cable:
PVC.
Silicone.
Teflon.
Fibreglass.

Type K thermocouple probes with leads. Mineral insulated. Isolated junction. Stock probes. Others by request.		
CODE	DESCRIPTION	PRICE
MTLK3150 MTLK3300	Mineral insulated probe with lead. Probe: Diameter: 3.0mm 310 Stainless steel. Lead: 2m 7/0.2 fibreglass SSOB cable. Probe Length: 150mm Probe Length: 300mm	\$98.00 \$100.00
MTLK4100 MTLK4300	Probe: Diameter: 4.5mm 310 Stainless steel. Lead: 2m 7/0.2 fibreglass SSOB cable. Probe Length: 100mm Probe Length: 300mm	\$98.00 \$100.00
MTLK6150 MTLK6300	Probe: Diameter: 6mm 310 Stainless steel. Lead: 2m 7/0.2 fibreglass SSOB cable. Probe Length: 150mm Probe Length: 300mm	\$102.00 \$108.00

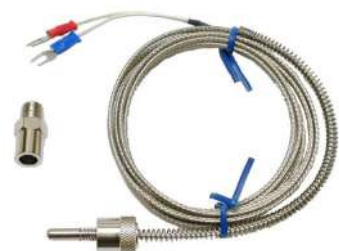


MTLK4300

Universal Thermocouple Probes. Stock probes. Others by request.		
CODE	DESCRIPTION	PRICE
UT-K-xx (C113)	Universal thermocouple probe with bayonet adaptor. Type K Probe: Tip diameter: 4.7mm 310 Stainless steel. Temp: Max at probe tip: 350°C. Adaptor: 1/8 inch BSPT Cable: 4/0.3, fibreglass, SS overbraid. Length: 2.0m 3.5m 6.5m	\$45.00 \$55.00 \$65.00
UT-J-xx (C113)	Universal thermocouple probe with bayonet adaptor. Type J Probe: Tip diameter: 4.7mm 310 Stainless steel. Temp: Max at probe tip: 350°C. Adaptor: 1/8 inch BSPT Cable: 4/0.3, fibreglass, SS overbraid. Length: 2.0m 3.5m 6.5m	\$45.00 \$55.00 \$65.00

xx = length

Universal Thermocouples



UT-K

Handheld Probe Assemblies



Handheld probe assemblies. Stock probes. Others by request.			
CODE	DESCRIPTION		PRICE
Bead probe	Miniature plug and cable.	Type K.	\$32.00
	Probe: Bead tip. Cable: 2m Teflon. Temp: min/max of probe: 0~100°C.		
HHR-01	Industrial food probe.	Pt100.	\$232.00
	Probe: 4.7 x 100mm Spear tip. 316 Stainless steel. Cable: 900mm PVC. Curly cord. Temp: min/max of probe: -30~260°C.		
HHT-01	Industrial food probe.	Type K.	\$168.00
	Probe: 4.7 x 100mm Spear tip. 316 Stainless steel. Cable: 900mm PVC. Curly cord. Temp: min/max of probe: -30~400°C.		
HHT-02	Insertion probe.	Type K.	\$55.00
	Probe: 3.2 x 200mm. Stainless steel. Cable: 900mm PVC. Temp: min/max of probe: -30~600°C.		
HHT-03	Mini spear probe.	Type K.	\$43.00
	Probe: 3.2 x 100mm. Stainless steel. Cable: 900mm PVC. Temp: min/max of probe: -30~300°C.		
HHT-04	Surface probe.	Type K.	\$80.00
	Probe: Foil sensor. Fast response. Cable: 900mm PVC. Temp: min/max of probe: -20~400°C		

Temperature sensors:

Standard thermocouples:

- Type K.
- Type J.
- Type T.

Standard RTD sensors:

- Pt100.
- Pt500.
- Pt1000.

Probe:

- Diameters from 3mm.
- Mineral insulated.
- Isolated or bonded junctions.

Connectors:

- Mini plug.
- Standard plug.

Cable:

- PVC.
- Silicone rubber.
- Teflon.
- Tefzel.



Handheld Infrared Thermometer

The ThermaTwin TN410LCE Handheld Infrared Thermometer is a professional laser thermometer with advanced temperature processing. It also has a built-in socket that accepts commercially available K-type thermocouple (not included).



Laser Sighting
 Large LCD Screen, with bright amber Backlight
 Infrared Range -60~500°C
 Accuracy = -33~500°C, ±2% of reading or 2°C (4°F), whichever is greater
 Modes: Ave, Dif, Hi/Low Alarm, Real Time Max / Min, Lock
 Optics 12:1
 Accepts Type "K" Thermocouples (-64~1400°C)
 LED Flashlight included
 Supplied with 2x AAA batteries and vinyl carry case with belt loop
 Auto Power Off extends battery life
 Emissivity (preset to 0.95) adjustable from 0.10 to 0.95 in 0.01 steps

MODEL	DESCRIPTION	PRICE
TN410LCE	Handheld Infrared Thermometer	\$195.00

Thermocouple Connectors

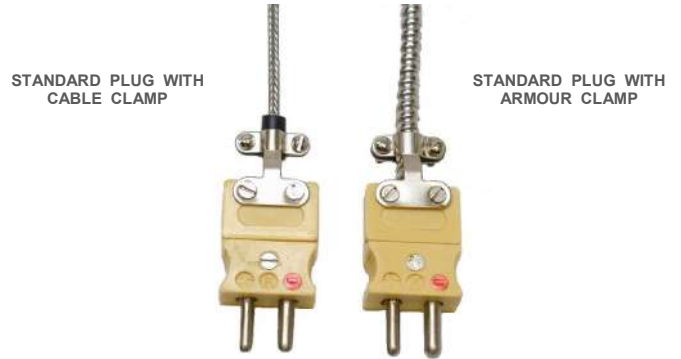
Standard series

Thermocouple connectors. Standard Series (temp 180°C).		Round pin.	
DESCRIPTION	TYPE	PRICE	
Standard plug.	K	\$10.00	
Standard jack.	K	\$13.00	
Standard plug: High temp (260°C).	K	\$15.00	
Standard jack: High temp (260°C).	K	\$17.00	
Panel mount jack.	K	\$16.00	
Standard plug.	J	\$10.00	
Standard jack.	J	\$13.00	
Panel mount jack.	J	\$16.00	
Standard plug.	R	\$10.00	
Standard jack.	R	\$13.00	
Panel mount jack.	R	\$16.00	
Standard plug.	T	\$10.00	
Standard jack.	T	\$13.00	
Panel mount jack.	T	\$16.00	
Standard cable clamp.		\$8.00	
Standard clamp for 1/4" armour sheath.		\$8.00	
6 way panel for panel mount Jack		\$31.00	



STANDARD PLUGS

STANDARD JACKS



STANDARD PLUG WITH CABLE CLAMP

STANDARD PLUG WITH ARMOUR CLAMP



STANDARD PANEL MOUNT JACKS

Mini series

Thermocouple connectors. Mini Series (temp 180°C).		Flat pin.	
DESCRIPTION	TYPE	PRICE	
Mini plug.	K	\$8.00	
Mini jack.	K	\$10.00	
Panel mount jack.	K	\$11.00	
Mini plug.	J	\$8.00	
Mini jack.	J	\$10.00	
Panel mount jack.	J	\$11.00	
Mini plug.	T	\$8.00	
Mini jack.	T	\$10.00	
Panel mount jack.	T	\$11.00	
5 way panel for panel mount jack.		\$21.00	
Mini cable clamp.		\$8.00	
Mini clamp for 1/4" armour sheath.		\$8.00	



MINI PLUGS

MINI JACKS

PANEL MOUNT MINI JACKS

Note: Other connector types are available on request.



MINI PLUG WITH ARMOUR CLAMP

MINI PLUG WITH CABLE CLAMP



FIVE WAY MINI JACK PANEL

Thermocouple data

Nominal resistance of wire (loop) - Ohms per 100ft / 100m							
Nominal CSA (mm ²)	AWG	Type T		Type J		Type K	
		100ft	100m	100ft	100m	100ft	100m
0.8	18	18.74	61.48	22.79	74.77	37.07	121.62
0.5	20	29.82	97.83	36.12	118.5	58.97	193.47
0.2	24	75.34	247.2	91.33	299.6	149.0	488.85
0.13	26	119.8	393.0	145.4	477.0	237.0	777.56
0.08	28	190.5	625.0	231.2	758.5	376.8	1236
0.05	30	302.5	992.5	367.2	1205	598.4	1963
0.01	36	1217	3993	1476	4843	2408	7900

Thermocouple reference tables. EMF in millivolts.							
Temp. °C	Type N	Type R	Type S	Type K	Type E	Type J	Type T
-200	-	-	-	-5.891	-8.824	-7.890	-5.603
-100	-	-	-	-3.553	-5.327	-4.632	-3.378
0	0	0	0	0	0	0	0
100	2.774	0.647	0.645	4.095	6.317	5.268	4.277
200	5.913	1.468	1.440	8.137	13.41	10.77	9.286
300	9.340	2.400	2.323	12.20	21.03	16.32	14.86
400	12.97	3.407	3.260	16.39	28.94	21.84	20.86
500	16.74	4.471	4.234	20.64	36.99	27.38	
600	20.60	5.582	5.237	24.90	45.08	33.09	
700	24.52	6.741	6.274	29.12	53.11	39.13	
800	28.45	7.949	7.345	33.27	61.02	45.49	
900	32.37	9.203	8.448	37.32	68.78	51.87	
1000	36.24	10.50	9.585	41.26	76.35	57.94	

THERMOCOUPLE and EXTENSION CABLE GRADE COLOUR CODES

ANSI CODE	JACKET COLOUR	INSULATION COLOUR		ALLOY COMBINATION		TEMPERATURE RANGE	COMMENTS ENVIRONMENT BARE WIRE
		POSITIVE	NEGATIVE	POSITIVE LEAD	NEGATIVE LEAD		
K	Yellow	Yellow	Red	NICKEL-CHROMIUM (CHROMEL) Ni-Cr	NICKEL-ALUMINIUM (ALUMEL) Ni-Al (magnetic)	-270 to 1150°C Thermocouple Grade 0 to 200°C Extension Grade	Clean oxidising and inert. Limiting use in vacuum or reducing. Becomes unstable from 1050°C.
J	Black	White	Red	IRON Fe (magnetic)	CONSTANTAN-COPPER-NICKEL Cu-Ni	-210 to 760°C Thermocouple Grade 0 to 200°C Extension Grade	Reducing, vacuum or inert. Limited use in oxidising at high temp. Not recommended for low temperatures.
T	Blue	Blue	Red	COPPER Cu	CONSTANTAN-COPPER-NICKEL Cu-Ni	-270 to 400°C Thermocouple Grade -60 to 100°C Extension Grade	Mild oxidising. Reducing, vacuum or inert. Good where moisture is present. Low temp. and cryogenic applications.
E	Purple	Purple	Red	NICKEL-CHROMIUM Ni-Cr	CONSTANTAN-COPPER-NICKEL Cu-Ni	-270 to 1000°C Thermocouple Grade 0 to 200°C Extension Grade	Oxidising or inert. Limited use in vacuum or reducing. Highest EMF change per degree.
N	Orange	Orange	Red	NICROSIL Ni-Cr-Si	NISIL Ni-Si-Mg	-270 to 1300°C Thermocouple Grade 0 to 200°C Extension Grade	Clean oxidising or inert. Vacuum or reducing. More stable up to 1300°C.
R	None established			PLATINUM-13% RHODIUM Pt - 13%Rh	PLATINUM Pt	-50 to 1768°C Thermocouple Grade 0 to 150°C Extension Grade	Oxidising or inert. Do not insert in metal tubes. Beware of contamination. High temperature.
S	None established			PLATINUM-10% RHODIUM Pt - 10%Rh	PLATINUM Pt	-50 to 1768°C Thermocouple Grade 0 to 150°C Extension Grade	Oxidising or inert. Do not insert in metal tubes. Beware of contamination. High temperature.
U (RX/SX)	Green	Black	Red	COPPER Cu	COPPER-LOW NICKEL Cu-Ni	0 to 50°C Extension Grade	Extension grade cable for Type R and S thermocouples.
B	Grey	Grey	Red	PLATINUM-30% RHODIUM Pt - 30%Rh	PLATINUM-6% RHODIUM Pt - 6%Rh	0 to 1820°C Thermocouple Grade 0 to 100°C Extension Grade	Oxidising or inert. Do not insert in metal tubes. Beware of contamination. High temp. Common use in the glass industry.

The colour code shown is for thermocouple extension grade cable. Thermocouple grade cable has a brown jacket. Fibreglass jacketed thermocouple grade cable has a tracer of the positive wire colour (except type J which has a black tracer), to identify calibration.

Note: Also see the Cable Identification Guide on the inside front cover >>

Cable



THERMOCOUPLE GRADE CABLE							
Code	Type	Insulation description	CSA	Size	AWG	Cable temp	Price / m
G/G-24F-K	K	Fibreglass/fibreglass.	0.22	7/0.2	24	400°C	\$7.70
G/GS-24F-K	K	Fibreglass/fibreglass. SS overbraided.	0.22	7/0.2	24	400°C	\$9.80
G/G-30-KK	KK	Fibreglass/fibreglass. High Accuracy.	0.05	1/0.25	30	200°C	\$6.40
Tex/Tex-24F-K	KK	Teflon. High Accuracy.	0.22	7/0.2	24	260°C	\$13.00
G/G-24F-J	J	Fibreglass/fibreglass.	0.22	7/0.2	24	400°C	\$8.30
G/GS-24F-J	J	Fibreglass/fibreglass. SS overbraided.	0.22	7/0.2	24	400°C	\$9.40
Tex/Tex-24F-J	J	Teflon.	0.22	7/0.2	24	260°C	\$9.50
Tex/Tex-30-TT	TT	FEP/FEP Teflon. High Accuracy.	0.05	1/0.25	30	200°C	\$8.90
THERMOCOUPLE EXTENSION CABLE							
P/P-24F-KX	KX	PVC/PVC.	0.22	7/0.2	24	105°C	\$5.50
UP/ALPTW-20-KX	KX	PVC/Mylar/PVC. polyester aluminium tape shield.	0.5	1/0.8	20	105°C	\$7.50
P/P-24F-JX	JX	PVC/PVC.	0.22	7/0.2	24	105°C	\$4.90
UP/ALPTW-20F-JX	JX	PVC/Mylar/PVC. polyester aluminium tape shield.	0.5	7/0.2	20	105°C	\$6.50
RTD ~ INSTRUMENT CABLE							
Code	Cores	Insulation description	CSA	Size	AWG	Cable temp	Price / m
3C-PVC	3	PVC/PVC. Black.	0.5	16/0.2	20	-5/105°C	\$4.50
4C-PVC-SCR	4	PVC/PVC. Foil screened. Grey.	0.22	7/0.2	24	-5/80°C	\$4.00
3C-SIL	3	Silicone rubber. Grey.	0.25	14/0.15	23	-60/180°C	\$8.20
3C-PFA	3	PFA Teflon. Foil screened. White.	0.22	7/0.2	24	-190/260°C	\$9.50
4C-PTFE	4	PTFE Teflon. Foil screened. White.	0.22	7/0.2	23	-180/260°C	\$11.60
DATA CABLE							
Code	Pairs	Insulation description		Size	AWG	Cable temp	Price / m
DPF4702	2	PVC/PVC screened.	0.22	7/0.2	24	75°C	\$4.20
ARMOUR FLEX							
ARM3.5-5MM		3.5~5mm diameter, 304 SS.				See Cable	\$16.00
ARM4-7MM		4~7mm diameter, 304 SS.				See Cable	\$15.75



OTHER CALIBRATIONS AVAILABLE



Note: Other cable types are available on request.

pH Sensors



M-10

Model 10 – General purpose ½” NPT pH sensor.

Temperature: -5~80°C.
 Pressure: 0~100 psi.
 Cable length: 4.6 metres.
 Ref. cell: Single junction, KCl/AgCl.
 Ref. junction: Porous teflon.
 Applications: Non toxic solutions e.g. Potable water, cooling towers, fresh/salt water aquariums.

MODEL	DESCRIPTION	PRICE
M-10	Model 10 General purpose ½” NPT pH sensor.	\$355.00
M-10-ORP	Model 10-ORP General purpose ½” NPT ORP sensor. Used for Redox measurement in relatively clean waters.	\$410.00



M-11

Model 11 – General purpose ¾” NPT pH sensor.

Temperature: 0~80°C.
 Pressure: 0~100 psi.
 Cable length: Standard 4.6 metres. Option of 10m. (Note: 10m is maximum length.)
 Ref. cell: Double junction, KNO₃ and KCl/AgCl.
 High resistance to electrode poisoning solutions.
 Applications: For both submersible and insertable use in process and waste water.

MODEL	DESCRIPTION	PRICE
M-11	Model 11 General purpose ¾” NPT pH sensor.	\$480.00
M-11-Pt100	Model 11-Pt100 General purpose ¾” NPT pH sensor. Includes a Pt100 sensor.	\$595.00
M-11-Pt100-HT	Model 11-Pt100-HT General purpose ¾” NPT pH sensor. High temp. version including a Pt100 sensor. High temperature: 0~110°C. High pressure: 0~150 psi. Do not use where ethers, ketones and most aromatic hydrocarbons are present. If these solvents are present use the standard version regardless of the temperature.	\$685.00

NOTE

For alkaline conditions between pH 7 ~ 13 use the -HT option.
 For conditions above pH 13 contact Intech.



M-12

Model 12 – General purpose ¾” NPT pH sensor for flowing, viscous applications.

Temperature: 0~80°C.
 Pressure: 0~100 psi.
 Cable length: 4.6 metres.
 Ref. cell: Double junction, KNO₃ and KCl/AgCl.
 High resistance to electrode poisoning solutions.
 The concave sensor configuration protects the pH bulb from particulate matter and provides a cleansing flow without affecting the line pressure characteristics.
 Applications: Ideal for pipelines with flow velocities greater than 30 cm/sec. Typical applications include batching and process control in the chemical, petro-chemical, pulp/paper and electroplating industries.

MODEL	DESCRIPTION	PRICE
M-12	Model 12 General purpose ¾” NPT pH sensor.	\$480.00
M-12-Pt100	Model 12-Pt100 General purpose ¾” NPT pH sensor. Includes a Pt100 sensor.	\$595.00
M-12-Pt100-HT	Model 12-Pt100-HT General purpose ¾” NPT pH sensor. High temp. version including a Pt100 sensor. High temperature: 0~110°C. High pressure: 0~150 psi. Do not use where ethers, ketones and most aromatic hydrocarbons are present. If these solvents are present use the standard version regardless of the temperature.	\$685.00

<< Please refer to page 36 for our **pH-HR** data logger - ideal for use with these pH probes!
 (We recommend the probes that include the -Pt100 option for the best possible accuracy with the **LPI-pH & pH-HR**).

Model 21 – General purpose 3/4" NPT pH sensor with long insertion length.

Temperature: 0~80°C.

Pressure: 0~100 psi.

Cable length: 4.6 metres.

Ref. cell: Double junction, KNO₃ and KCl/AgCl.

High resistance to electrode poisoning solutions, typically those with cyanide, ammonia, sulphide and heavy metals in appreciable concentrations.

Applications: A combination pH sensor for insertion in tanks and large diameter pipes using process and waste water.

MODEL	DESCRIPTION	PRICE
M-21	Model 21 General purpose 3/4" NPT pH sensor with long insertion length.	\$515.00
M-21-Pt100	Model 21-Pt100 General purpose 3/4" NPT pH sensor with long insertion length. Includes a Pt100 sensor.	\$630.00
M-21-Pt100-HT	Model 21-Pt100-HT General purpose 3/4" NPT pH sensor with long insertion length. High temperature version including a Pt100 sensor. High temperature: 0~110°C. High pressure: 0~150 psi. Do not use where ethers, ketones and most aromatic hydrocarbons are present. If these solvents are present use the standard version regardless of the temperature.	\$750.00
Options		Add Price
Z7450	Cleaning Cage Kit.	\$320.00
	Note: Sensors must be ordered with the SCO option.	\$99.00



M-21

NOTE

For alkaline conditions between pH 7 ~ 13 use the -HT option.
For conditions above pH 13 contact Intech.

<< Please refer to page 36 for our **pH-HR** data logger - ideal for use with these pH probes!
(We recommend the probes that include the -Pt100 option for the best possible accuracy with the **LPI-pH** & **pH-HR**).

pH Transmitter



- ◆ 4~20mA loop powered.
- ◆ LCD display.
- ◆ 2 kV isolation.
- ◆ 0.1% accuracy.
- ◆ 40~200mV output test signal.
- ◆ LED indication of loop current.
- ◆ IP67 enclosure.

MODEL	DESCRIPTION	PRICE
LPI-pH	pH voltage to DC isolating transmitter with LCD display. pH milli volt input and Pt100 temperature compensation. Slope and offset adjustments for on-site calibration.	\$738.00

pH

	0	ACID H+					NEUTRAL 7					ALKALINE OH-					14
pH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
mV at 25°C	+413							0							-413		

pH Transmitter / Switching device

JUMO ecoTRANS pH 03



MODEL	DESCRIPTION	PRICE
ecoTRANS pH 03	<p>Transmitter / switching device for pH / ORP (Redox voltage) and temperature (RTD Pt100 / Pt1000).</p> <ul style="list-style-type: none"> ◆ Range: 0~14pH or -1500~1500mV. ◆ Accuracy: ±1% of the measurement range. ◆ 3-way isolation (input, output and voltage supply are electrically isolated from each other). ◆ Clear 2-line LCD display. ◆ Output: 4~20mA. ◆ Power supply: 20~30Vdc. ◆ DIN rail mount. ◆ Calibration timer. ◆ Option: Dual analogue output with relay. <p>JUMO Datasheet: 20.2723</p>	<p>\$730.00</p> <p>POA</p>



Insertion



Glass combination

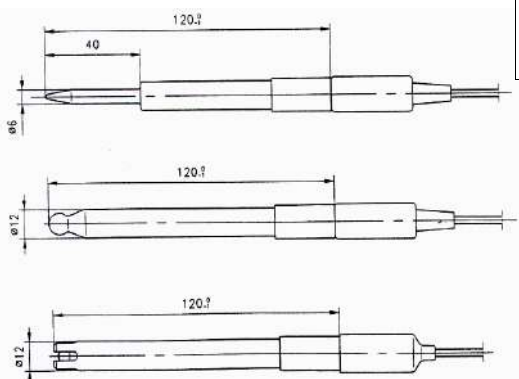


Plastic shaft

Jumo - pH probes

JUMO Datasheet: 20.1030

MODEL	DESCRIPTION	PRICE
Insertion	<p>pH probe. 201030/60-76 <i>Insertion electrode with silicone handle.</i> Insertion tip 6mm diameter. Two ceramic diaphragms. KCl reference electrolyte (free from Ag ions). 1m attached cable and BNC plug.</p> <p>Applications Food industry for insertion measurement in meat, fruit, sausage, cheese, dough and other semi-solid foodstuffs. Measurement in soils. Measurement in small liquid samples.</p>	\$472.00
Glass	<p>pH probe. 201030/76-76 <i>Glass combination electrode with silicone handle.</i> Spherical membrane. Ceramic diaphragm. KCl reference electrolyte (free from Ag ions). 1m attached cable and BNC plug.</p> <p>Applications General aqueous media, drinks industry, electroplating, factory laboratory, fish farming, aquarium, chemicals, waste water plants, pharmaceuticals, drinking water.</p>	\$330.00
Plastic	<p>pH probe. 201030/53-18 <i>Plastic shaft electrode with silicone handle.</i> Spherical membrane with protection basket. Glass fibre diaphragm. KCl reference electrolyte (free from Ag ions). 1m attached cable and BNC plug.</p> <p>Applications Unbreakable plastic shaft with protection basket for heavy duty applications. General aqueous media, drinks industry, electroplating, factory laboratory, fish farming, aquarium, chemicals, waste water plants.</p>	\$352.00



pH Transmitter / Controller

JUMO

JUMO AQUIS 500 pH

- ◆ Graphics display with background lighting.
- ◆ Simple menu guided 3 point calibration.
- ◆ Full PID controller functionality.
- ◆ Basic unit with 1x analogue (4~20mA / 0~10V) output.
- ◆ High End Model with 2x analogue outputs and 2x changeover 3A, 250Vac relay outputs.
- ◆ Surface mountable housing.
- ◆ Power Supply: Standard, 20~30Vac/dc. Optional, 12~24Vdc ±15%.
- ◆ JUMO Datasheet: 20.2560



AQUIS 500 pH

MODEL	DESCRIPTION	PRICE
AQUIS 500 pH	pH Tx/Controller with 1 x Analogue output, 20~30Vac/dc.	\$1270.00
AQUIS 500 pH-2A	pH Tx/Controller with 2 x Analogue outputs, 2x Relay outputs 20~30Vac/dc.	\$1850.00

tecLine pH single-rod electrodes

JUMO tecLine electrodes are high-quality combination sensors for professional applications in process and industrial measurement technology. A temperature probe can also be integrated as an option, depending on the type.

Suitable versions are available to meet a wide variety of requirements:

- for industrial and communal water and wastewater engineering
- for measurements in suspensions and varnishes

Other versions available (see data sheet / web link)

- ◆ JUMO Datasheet: 20.1020

JUMO tecLine sensors are state-of-the-art for modern pH and redox electrodes. Each electrode is a quality product and is individually tested as a matter of routine. All standard electrodes are made from FDA-listed materials.

MODEL	DESCRIPTION	PRICE
tecLine	<i>For standard applications.</i> 201020/51-10 Glass shaft, gel-sealed, zirconium dioxide diaphragm, screw cap, 120mm, salt reserve. (P/N: 00300151).	\$405.00
tecLine COAX	5m coaxial cable for Tecline pH probe. (P/N: 00082673).	\$145.00



tecLine

pH Probe Holders Immersion Fittings

Immersion fittings are used for holding electrochemical sensors.

The fittings are mounted in open sluices or containers. They protect the installed sensor from breaking and enable measurement in different immersion depths.

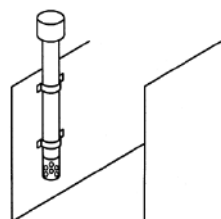
JUMO Datasheet: 20.2820

MODEL	DESCRIPTION	PRICES from
PHIF-40	Polypropylene (FPM seals), 500~2000mm lengths.	\$320.00 to \$540.00
PHIF-63	Polypropylene (FPM seals), 500~2000mm lengths. For 1~3 sensors.	\$1125.00 to \$1620.00

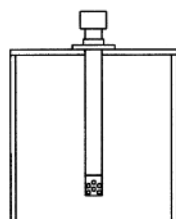


Installation options

Standard

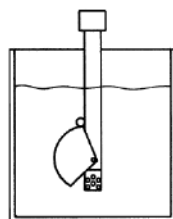


Fixing with pipe clips in the inlet channel

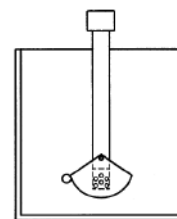


Fixing with a flange on a container

Use of a wetting cup



with the container filled



with empty container (residual liquid in the cup prevents the sensor from running dry)

Conductivity

JUMO



Lf03

ecoTRANS Lf 03

Transmitter / Switching Device for Conductivity

For connecting conductance sensors in two-electrode technology.
 Display units $\mu\text{S}/\text{cm}$, mS/cm , $\text{k}\Omega \times \text{cm}$, $\text{M}\Omega \times \text{cm}$, $\mu\text{mho}/\text{cm}$, mmho/cm .
 Two actual value outputs for conductivity and process temperature.
 Switching output.
 USP switching function according to USP<645>.
 Selectable temperature compensation natural water EN 27 888, ASTM D 1125-95, linear.
 Three-way disconnection (input, output, and voltage supply are galvanically isolated from each other).
 DIN-rail mounting.
 Delivery includes calibration certificate.
 JUMO Datasheet: 20.2732

MODEL	DESCRIPTION	PRICE
ecoTRANS Lf 03	Two analogue outputs and one relay output.	\$1035.00

JUMO AQUIS 500 CR

Transmitter / Controller for Conductivity



AQUIS 500 CR

Automatic temperature compensation.
 Large LC graphics display with background lighting.
 Choice of display: large numbers, bar graph or trend display.
 Calibration options according to measured variable: cell constant and temperature coefficient.
 Calibration logbook.
 Two-electrode cells (as standard) or four-electrode cells can be connected.
 Pollution detection can be activated.
 Auto-range operation.
 Surface mounting housing (IP67).
 JUMO Datasheet: 20.2565

MODEL	DESCRIPTION	PRICE
AQUIS 500 CR	Conductivity Tx/Controller, 1 x Analogue output, 20~30Vac/dc.	\$1450.00
AQUIS 500 CR-2A	Conductivity Tx/Controller, 2 x Analogue outputs, 1 Relay, 20~30Vac/dc	\$1950.00

BlackLine CR-EC

2-Electrode Conductivity Sensors



CR-EC

Compact construction.
 Integrated Pt1000 (standard).
 Screw connection G 1/2.
 Electrical connection: 5m Fixed Cable.
 Fitting length: 40mm (CR-EC-0.10 & CR-EC-1.00) 60mm (CR-EC-0.01).
 Suitable for pure and high purity water applications.
 JUMO Datasheet: 20.2922

MODEL	DESCRIPTION	PRICE
CR-EC-0.01	Conductive 2-electrode conductivity sensor, K=0.01, 63mm, CrNi.	\$510.00
CR-EC-0.10	Conductive 2-electrode conductivity sensor, K=0.10, 40mm, CrNi.	\$380.00
CR-EC-1.00	Conductive 2-electrode conductivity sensor, K=1.00, 40mm, Titanium.	\$440.00



T01-B-Ex

dTRANS T01 Two-Wire Temperature Transmitter

Available for In-Head or DIN-rail mounting.
 RTD temperature probes and thermocouples.
 Galvanically isolated input and output.
 Output two-wire 4 to 20 mA, HART® interface (Not available in dTRANS T01-Junior).
 Customized linearization.
 JUMO Datasheet: 70.7010



T01-T

MODEL	DESCRIPTION	PRICE
T01-T	DIN Rail Programmable Transmitter with HART. (707013)	\$650.00
T01-B-Ex	In-Head Programmable Transmitter with HART + Ex protection. (707016)	\$785.00
OPTIONS		
Foot	DIN Rail mounting element (P/N: 00352463)	\$24.00
Cable	PC Interface with converter USB/TTL (P/N: 00456352).	\$350.00
SAT-304	HART Modem USB (Nivelco).	\$395.00
Software	Software - Setup program dTRANS T01 (P/N: 00378733).	\$155.00



Temperature Limiter/Monitor - TB/TW

JUMO

Features:

- ◆ Design width 22.5mm.
- ◆ Installation on a top hat rail 35mm.
- ◆ Approval as per DIN EN 14 597, cULus
- ◆ Universal measuring input (also standard signal)
- ◆ 2x Pt100 for differential value measurement
- ◆ Alphanumerical LCD display.
- ◆ Limiter or monitor configurable.
- ◆ Temperature monitoring up to max. 2,495°C.
- ◆ Pre-alarm absolute or as the offset to the limit value.

- ◆ Internal and external reset possible
- ◆ Advanced configuration with optional setup program
- ◆ JUMO Datasheet; 70.1160

Applications:

- Monitoring and limiting temperatures, pressure and other process variables, e.g.:
- ◆ Protection of burner control systems.
- ◆ Monitoring of heating elements.
- ◆ Protection of thermal oil systems.
- ◆ Protection of boiler plants.



TB/TW

MODEL	DESCRIPTION	PRICE
TB/TW	Temperature limiter/monitor, Pt100, 110~240V.	\$782.00
TB/TW-LV	Temperature limiter/monitor, Pt100, 20~30Vac/dc.	\$782.00
OPTIONS		
Cable	PC Interface with converter USB/TTL (P/N: 00456352).	\$350.00
Software	Setup Software and Interface cable for advanced configuration (P/N: 00514193).	POA

Safety Temperature Limiter/Monitor - safetyM STB/STW - SIL and PL approved

Features:

- ◆ SIL and PL approvals.
- ◆ Can be configured as safety temperature limiter (STB) or safety temperature monitor (STW).
- ◆ LCD display with background lighting and plain text display.
- ◆ Setup program available for configuration and archiving via USB interface. (USB Mini-B connector.)
- ◆ Two relay outputs can be used as pre-alarm or limit value alarm.
- ◆ Measuring input: 2 x Pt100 3-wire.
- ◆ Analogue Output (4~20mA).
- ◆ JUMO Datasheet: 70.1150



STB/STW

MODEL	DESCRIPTION	PRICE
STB/STW-HV	Safety Temperature Limiter/Monitor, 110~240Vac.	\$1200.00
STB/STW-LV	Safety Temperature Limiter/Monitor, 20~30Vac/dc.	\$1200.00
OPTIONS		
Software	Software - Setup program STB/STW (P/N: 00548742).	\$168.00

Electronic Thermostat - eTRON T100

Features:

- ◆ 5 different measuring input groups.
- ◆ Intuitive operation and configuration on the device or with the setup program through USB interface.
- ◆ User level with 8 parameters
- ◆ Dot matrix display 64 x 80 pixels with 4 national languages
- ◆ Data logger function
- ◆ Service and operating hours counter
- ◆ Connection via terminal blocks with push-in technology
- ◆ 10 A relay (changeover contact)
- ◆ Customer-specific linearization in the set-up program
- ◆ Limit value monitoring function
- ◆ Timer function
- ◆ Connection diagram retrievable in the LCD display
- ◆ JUMO Datasheet: 70.1052



eTRON T100

MODEL	DESCRIPTION	PRICE
00721265	eTRON T100 Electronic Thermostat, Pt100 Input, 230Vac.	\$370.00
00721352	eTRON T100 Electronic Thermostat, Pt100 Input, 12~24Vac/dc.	\$370.00
00721353	eTRON T100 Electronic Thermostat, Thermocouple Input, 230Vac.	\$370.00
00721354	eTRON T100 Electronic Thermostat, Thermocouple Input, 12~24Vac/dc.	\$370.00
00616250	USB Cable, A connector to Micro-B connector, length 3m.	\$30.00



Midas S05



P30-504



P30-571

Bar
-1~1.5
-1~5 *
-1~9
-1~15 *
-1~24 *
0~1
0~1.6 *
0~2.5
0~4
0~6
0~10 *
0~16 *
0~25 *
0~40
0~60

Bar
-1~0
-1~1
-1~1.5
-1~5
-1~9
0~0.25
0~0.4
0~0.6
0~1
0~2.5
0~4
0~6
0~10 *
0~16 *
0~25 *
0~40
0~60
0~100
0~160
0~250
0~400
0~600
0~0.6 absolute
0~1 absolute

Bar
-1~0
-1~9
0~0.1
0~0.25
0~0.4
0~0.6
0~1
0~4
0~6
0~10
0~16
0~25



P30-613

Bar
0~0.25 *
0~0.4 *
0~0.6 *
0~1 *
0~4 *
0~6 *
0~10 *



Midas SI

Bar
0~0.25
0~0.4
0~0.6



Midas C08

Bar
0~10
0~16



Midas H20 HP

Bar
0~100
0~250
0~400
0~600

M7



Pressure Transmitters

MIDAS		
MODEL	DESCRIPTION	PRICE
Midas S05	Pressure transmitter. 2 wire, loop powered. Protection: IP65. Process connection: 1/4" BSP. Wetted parts: Stainless steel. Mounting position: Unrestricted. Temperature: Medium, -30~125°C. Ambient, -20~125°C. Output: 4~20mA. 2 wire, loop powered. U _T = 10~30Vdc. Load resistance: R _L = (U _S -10V) / 0.02A. max. Range: Ranges in gauge pressure: from -1~1.5 bar to -1~24 bar. and from 0~1.0 bar to 0~60 bar. * Ranges also available with M12 x 1 connection (includes cable) (Specify when ordering). JUMO Datasheet: 40.1010	\$398.00
Midas SI	Range: from 0~0.25 bar to 0~0.6 bar. Features as above. JUMO Datasheet: 40.1006	\$418.00
Midas H20 HP	High pressure version of Midas S05 / SI - as above except: Range: from 0~100 to 0~600 bar. JUMO Datasheet: 40.1020	\$498.00
Midas C08	For Water use Only! Range: 0~10 bar & 0~16 bar JUMO Datasheet: 40.1002	\$356.00
ACCESORIES		
00409334	Cable, angled, M12x1, 2m PVC.	\$30.00
Midas 1/4" BSP Adaptor	Fittings: 1/4" BSPP to 1/4" BSPT Adaptor c/w Teflon Crush Washer	\$38.00
Midas 1/4" NPT Adaptor	1/4" BSPP to 1/4" NPT Adaptor c/w Teflon Crush Washer	\$38.00
dTRANS P30		
P30-504 P30-571 P30-613	Pressure transmitter. 2 wire, loop powered. Protection: IP65. Wetted parts: Stainless steel. Mounting position: Unrestricted. Temperature: Medium, -30~120°C. Ambient, -20~100°C. Output: 4~20mA. 2 wire, loop powered. U _T = 10~30Vdc. Load resistance: R _L = (U _S -10V) / 0.02A. max. Range: Ranges in gauge pressure: from -1~0 bar to -1~9 bar. and from 0~0.25bar to 0~600bar. Also some ranges in absolute pressure are available. JUMO Datasheet: 40.4366 Standard: Process connection: 1/2" BSP. Flush diaphragm: Process connection: 3/4" BSP. Sanitary: Process connection: 1 1/2" triclover. * Ranges also available with M12 x 1 electrical connection (includes cable) (Specify when ordering).	\$965.00 \$998.00 \$1055.00
ACCESORIES		
00512341	Cable, straight, M12x1, 5m PVC.	\$70.00
P30 1/2" Adaptor	Fittings: 1/2" BSPP to 1/2" BSPT Adaptor c/w Teflon Crush Washer	\$60.00
OPTION		
M7	Plug in Display. Loop Powered. Input: 4~20mA, 2 wire. Display: 4-digits LCD. Housing: Plastic. Dimensions: 45.4 x 66.9 x 46.9mm (WxHxD)	\$180.00

LCD Pressure Switch

- ◆ Linearity 0.1%.
- ◆ Measuring range scaling 1:4.
- ◆ Two-colour display with alarm function.
- ◆ Analogue output can be freely configured mA or V.
- ◆ Span 25~100% of nominal range.
- ◆ 100°C medium temperature.
- ◆ Programming is either local or via set-up.
- ◆ JUMO Datasheet: 40.5052

JUMO



DELOS SI

MODEL	DESCRIPTION	PRICE
DELOS SI	Precision pressure transmitter with switching contacts and display. Input Ranges: -1/9bar, 0~1bar, 0~4bar, 0~10bar, 0~25bar (specify). Other ranges available. Power supply: 12~30Vdc. Process Connection: 1/4" BSP. Protection: IP67. Cable: Angled socket M12x1 with 2m PVC cable (included). P/N: 00409334 Output: 1x PNP output 1x 0(4)~20mA or 0~10Vdc selectable.	\$820.00
OPTIONS (if required)		
Software	DELOS SI setup program (<i>requires Programming Kit below to connect with PC</i>). (P/N:00522384).	\$150.00 Nett
Programming Kit	PC interface cable including USB/TTL converter and adapter (P/N: 00456352) <u>AND</u> Connecting cable (Y cable) (P/N: 00507861)	\$460.00 Nett

Differential Pressure Transmitters

MODEL	DESCRIPTION	PRICE
402005-441	Dry non-corrosive gases. Range: 0~100mm adjustable.	\$430.00
402005-442	Range: 0~1000mm adjustable. Supply voltage: 14~38Vdc / 12~31Vac. Output: 3 wire 0(4)~20mA or 0~10Vdc, selectable. JUMO Datasheet: 40.2005	\$430.00
402005-LCD	LCD Display optional extra for above.	\$198.00
404304	Dry non-corrosive gases. 2 wire, 4~20mA. Range (specify): 0~2.5mbar, 0~5mbar, 0~600mbar, 0~1bar, 0~1mbar (add \$110). Other ranges available on request. Supply voltage: 24Vdc, loop powered. JUMO Datasheet: 40.4304	\$735.00



402005 with LCD



404304

For additional Differential Pressure Transmitters available refer to page 13 >>

Midas DP10	This differential pressure transmitter measures the pressure in liquid and gaseous media. The difference between the two pressures is converted into an analogue output signal. The piezo-resistive silicon sensor is built into a stainless steel housing. Output: 4~20mA, 2 wire. Supply voltage: 10~30Vdc (for 4~20 mA output). Operating temperature: Ambient -20~80°C. Medium -15~100°C. Storage -50~100°C. Cable: Angled socket M12x1 with 2m PVC cable. Mounting bracket: Angled or straight. JUMO Datasheet: 40.1050	
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MODEL	DESCRIPTION	PRICE
401050-452	Midas DP10 0~0.4bar Overall error (% of full scale): ≤2.5%	\$712.00
401050-453	Midas DP10 0~0.6bar Overall error (% of full scale): ≤2.5%	\$712.00
401050-455	Midas DP10 0~1.6bar Overall error (% of full scale): ≤2.0%	\$712.00
401050-457	Midas DP10 0~4bar Overall error (% of full scale): ≤1.8%	\$712.00
401050-458	Midas DP10 0~6bar Overall error (% of full scale): ≤1.8%	\$712.00
401050-459	Midas DP10 0~10bar Overall error (% of full scale): ≤1.5%	\$712.00
ACCESORIES		
00409334	Cable, angled, M12x1, 2m PVC.	\$30.00
00448193	Angled Mounting Bracket	\$41.00
00490132	Straight Mounting Bracket	\$16.00



Midas DP10

Level Transmitters

JUMO Maera S28 (404392)

Integrated overvoltage protection. Also 404391/000.

Housing: 192mm x ø25mm, stainless steel.
 Protection: IP68. EN60529 to 100m.
 Cable: polyurethane Ø 9mm.
 Accuracy: on full scale, < 0.5% min @ 20°C.
 Operating temp: 0~50°C.
 Temp coefficient: ±0.2% / 10°C.
 Output: 4~20mA, 2 wire, loop powered. $U_T = 10\sim30Vdc$.
 Load resistance: max. $R_L < (U_S - 10V) / 0.02A$.
 JUMO Datasheet: 40.4392

Features:

- ◆ Two wire 4~20mA submersible transmitter.
- ◆ 3x Overpressure - up to 40 bar.
- ◆ Surge and Reverse polarity protection.
- ◆ Integrated OVP (lightning) protection (404392 & 404391/000).
- ◆ Other ranges and cable lengths are available on request.



404392 404391/000 404391/022

MODEL	DESCRIPTION	PRICE
404392-451	Level probe 0~2.5 metres H ₂ O with 10 metres of cable.	\$1080.00
404392-452	Level probe 0~4 metre H ₂ O with 10 metres of cable.	\$1080.00
404392-453	Level probe 0~6 metres H ₂ O with 10 metres of cable.	\$1080.00
404392-454	Level probe 0~10 metres H ₂ O with 15 metres of cable.	\$1179.00
404392-456	Level probe 0~25 metres H ₂ O with 30 metres of cable.	\$1460.00
404392-457	Level probe 0~40 metres H ₂ O with 50 metres of cable.	\$2365.00

Level probe for liquids - Critical Applications.

JUMO Maera F27 (404391)

Housing: Stainless steel (404391/000) ø41mm x 120mm / Integrated OVP.
 Plastic PTFE (404391/022) ø50mm x 91mm
 Protection: IP68. EN60529 to 16m.
 Cable: FEP Ø 9mm.
 Accuracy: on full scale, < 0.4% min @ 20°C.
 Operating temp: -20~60°C.
 Temp coefficient: ±0.2% / 10°C.
 Output: 4~20mA, 2 wire, loop powered. $U_T = 12\sim30Vdc$.
 Load resistance: max. $R_L < (U_S - 12V) / 0.02A$.
 JUMO Datasheet: 40.4391

MODEL	DESCRIPTION	PRICE
404391/000-414-5	Level probe 0~1 metre H ₂ O with 5 metres of cable, SS.	\$1340.00
404391/000-414-10	Level probe 0~1 metre H ₂ O with 10 metres of cable, SS.	\$1490.00
404391/022-414	Level probe 0~1 metre H ₂ O with 10 metres of cable, PTFE.	\$1610.00
404391/022-452	Level probe 0~4 metres H ₂ O with 10 metres of cable, PTFE.	\$1750.00

Note: A close proximity or direct lightning strike may compromise the OVP protection.

Common Accessories for Level transmitters.

MODEL	DESCRIPTION	PRICE
NAA-101	Terminal Box with filter. Protection: IP65. / Size: 93 x 93mm.	\$75.00
NAA-102	Terminal Box with filter and integral OVP. Protection: IP65. / Size: 93 x 93mm. Overvoltage protection: Voltage clipping: slow - 90 Vpp, fast - 33 Vpp. Line resistance: 13 ohm. Max rating: 600 W / 1ms.	\$295.00
NAA-209	Hanging Cable Clamp.	\$32.00
LPN-OVP (Rev 1)	DIN Rail mount OVP unit. Leakage Current: 10µA @ 24Vdc. Transient cut-off voltage: 33V. Added line resistance: 4 ohms for the loop.	\$118.00
00061206	Jumo Terminal box with pressure compensation	\$130.00
00382632	Pressure equalization filter for cable.	\$20.00



NAA-209

NAA-101/2

LPN-OVP

Level probe for liquids - Small Diameter.

Stainless Steel Submersible Level Transmitter.

Housing: 124mm x ø17mm, stainless steel.
 Protection: IP68.
 Cable: polyethylene Ø7.5mm.
 Accuracy: on full scale, ±0.5%.
 Operating temp: -10~70°C.
 Output: 4~20mA, 2 wire, loop powered.
 $VS = 12\sim28Vdc$.

MODEL	DESCRIPTION	PRICE
IN-LLT-C17-10	Slim Level Probe 0~10 metres H ₂ O with 15 metres of cable.	\$760.00
IN-LLT-C17-20	Slim Level Probe 0~20 metres H ₂ O with 30 metres of cable.	\$820.00
IN-LLT-C17-50	Slim Level Probe 0~50 metres H ₂ O with 60 metres of cable.	\$950.00
IN-LLT-C17-100	Slim Level Probe 0~100 metres H ₂ O with 110 metres of cable.	\$1100.00

IN-LLT-17



Level Transmitters

IN-LLT (Rev 1) - Cost Effective. Submersible Level Transmitter for Water applications.

- ◆ Housing: 92mm x ø26mm, Stainless Steel.
- ◆ Protection: IP68.
- ◆ Cable: polyethylene ø9mm.
- ◆ Accuracy: on full scale, 0.5%.
- ◆ Operating temp: -10~80°C.
- ◆ Temp coefficient: ±0.2% / 10°C.
- ◆ Load resistance: $<(U_T-12)/0.02$.



IN-LLT

Features:

- ◆ Hydrostatic level transmitter.
- ◆ High accuracy 0.5% FS.
- ◆ Overpressure 2x FS.

For Overvoltage (Lightning) protection with the INLLT (Rev 1) please see previous page (62) <<

MODEL	DESCRIPTION	PRICE
IN-LLT-	Submersible Level transmitter.	
C-	Output options: 4~20mA, 2 wire, loop powered. $U_T = 12\sim 28Vdc$.	
V-	0~5Vdc. 10~30Vdc power supply.	
01	0~1 metre H ₂ O, with 10 metres of cable.	\$680.00
05	0~5 metres H ₂ O, with 10 metres of cable.	\$680.00

Note: Other ranges and cable lengths are available on request.

INTECH INSTRUMENTS

Nivopress NFK/ NPK/ NBK Programmable Level probe for liquids - General Purpose.

Level transmitter. Stainless Diaphragm.

- ◆ Housing: 173mm x ø22mm, stainless steel (NFK/NPK) 212mm x ø24mm, plastic (NBK)
- ◆ Cable: Polyurethane ø7mm (NPK, NBK) FEP (NFK)
- ◆ Accuracy: on full scale, <0.5%.
- ◆ Load resistance: max. $R_L = (U_T-12V) / 0.02A$.
- ◆ NFK Model suitable for diesel applications.
- ◆ Operating temp: -10~60°C.
- ◆ Protection: IP68.
- ◆ Temp coefficient: ±0.05% / 10°C.
- ◆ Output: 4~20mA, 2 wire, loop powered $U_T = 12\sim 30Vdc$. HART programmable.
- ◆ Programmable ranges.



NPK

NPK + NAW104

NBK

MODEL	DESCRIPTION	PRICE
NFK-41-03	Standard ranges (programmable): 0~1 metre H ₂ O, with 3 metres of FEP cable.	Re-range down to: 0.5m
NFK-42-05	0~2 metres H ₂ O, with 5 metres of FEP cable.	0~1m
NPK-43-10	0~5 metres H ₂ O, with 10 metres of cable.	0~2.5m
NPK-44-15	0~10 metres H ₂ O, with 15 metres of cable.	0~5m
NPK-45-25	0~20 metres H ₂ O, with 25 metres of cable.	0~10m
NPK-46-60	0~50 metres H ₂ O, with 60 metres of cable.	0~25m
NBK-43-10	0~5 metres H ₂ O, with 10 metres of cable.	0~2.5m
Options	Extra cable.	\$9/m
NAW-104	Adaptor for NPK Wastewater usage.	\$78.00
NAW-107	Adaptor for NBK Wastewater usage.	\$78.00
	Atex Ex	POA
	Option for Temperature output: Pt100 Class B or 4~20mA.	POA

Note: Other ranges and cable lengths are available on request.

NIVELCO

Nivopress NCK Level probe for liquids - Viscous Sewage/Slurry.

Level transmitter. Ceramic Diaphragm.

- ◆ Housing: 145mm x ø40mm, stainless steel.
- ◆ Cable: polyurethane ø7mm.
- ◆ Accuracy: on full scale, <0.5%.
- ◆ Operating temp: 0~60°C.
- ◆ Load resistance: max. $R_L = (U_T-12V) / 0.02A$.
- ◆ Protection: IP68.
- ◆ Temp coefficient: ±0.05% / 10°C.
- ◆ Output: 4~20mA, 2 wire, loop powered. $U_T = 12\sim 30Vdc$.



NCK

For Overvoltage (Lightning) protection with the Nivopress NFK/NPK/NBK/NCK please see previous page (62) <<

MODEL	DESCRIPTION	PRICE
NCK-22-05	Standard ranges (fixed): 0~2 metres H ₂ O, with 5 metres of cable.	\$1100.00
NCK-23-10	0~5 metres H ₂ O, with 10 metres of cable.	\$1100.00
NCK-24-15	0~10 metres H ₂ O, with 15 metres of cable.	\$1100.00

Note: Other ranges and cable lengths are available on request.

All prices are in NZ\$, are GST exclusive and are subject to change without notice.

Controllers

SR90 Series - Digital controllers.

The SR90 series are low cost, high featured controllers. With $\pm 0.3\%$ accuracy and a list of options including selectable input, second control output for Heat cool control, Auto / Manual, RS232/485 Communications, selectable event outputs, analogue retransmission output and 240Vac or 24Vac/dc power supply. The SR90 series is extremely versatile which makes it suitable for a wide range of applications.

Features:

- ◆ Auto tuning controller with PID.
- ◆ Inputs: Thermocouple, RTD, Current, Voltage.
- ◆ Outputs: Current, SSR drive, Voltage, Relay.
- ◆ Optional power supply of 24Vac or 24Vdc.
- ◆ Optional retransmission of process value or set value.
- ◆ Optional set value bias by digital input.
- ◆ Standard alarms and event output.
- ◆ Optional heater break alarm.
- ◆ Manual control, SV limit, PV filter, Output limit.
- ◆ Comms: RS232C, RS485; Modbus/Shimaden.
- ◆ Communicates with MicroScan SCADA and Shimaden Lite software.
- ◆ Front panel IP66.
- ◆ Heating cooling outputs (optional).



MODEL	SIZE	BASE PRICE Includes Alarms.	OPTIONS	ADD PRICE
SR91	48 x 48	\$330.00	Control output 2	\$100.00
SR92	72 x 72	\$360.00	24Vac/dc power supply	\$80.00
SR93	96 x 96	\$372.00	Retransmission (4~20mA or 0~10V)	\$100.00
SR94	48 x 96	\$350.00	Set value bias / DI	\$63.00
Comms RS232, RS485 Modbus/Shimaden				\$160.00

MR13 - 3 Input/Output Controller.

- ◆ 3-channel controller, 3-channel input#, 3-channel setting and simultaneous 3-channel display are possible.
- ◆ Accuracy: $\pm(0.3\% \text{ FS} + 1 \text{ digit})$.
- ◆ Programmable 1 pattern with 9-step function.
- ◆ PID Auto tune.
- ◆ Comms: RS232C, RS485; Shimaden.

Input type must be the same for 3 channels.



MR13

MODEL	SIZE	BASE PRICE	OPTIONS	ADD PRICE	
MR13	96 X 96	\$960.00	Program Function	\$160.00	
				Events	\$120.00
				Remote Input/ Digital Input	\$60.00
				Retransmission	\$120.00
				Comms RS232, RS485	\$200.00

Controllers / Shimaden Lite Software

FP93 - Programmable ramp controller.

- ◆ Autotuning controller with expert PID processing.
- ◆ Inputs: Thermocouple, RTD, Current, Voltage.
- ◆ Outputs: Current, SSR drive, Voltage, Relay.
- ◆ Remote setting, analogue or digital.
- ◆ Timer functions.
- ◆ Set value bias by digital input.
- ◆ Ramp control, 10 steps per pattern.
- ◆ 4 Patterns.
- ◆ Comms: RS232C, RS485; Shimaden.
- ◆ Communicates with MicroScan SCADA and Shimaden Lite software.
- ◆ Retransmission of process value or set value.
- ◆ High and low alarms.
- ◆ Event output, Heater break alarm.

MODEL	SIZE	BASE PRICE Includes Events	OPTIONS	PRICE
FP93	96 x 96	\$660.00	24Vac/dc Power Supply	\$90.00
			Status Output	\$80.00
			Retransmission (4~20mA or 0~10V)	\$100.00
			Comms	\$160.00

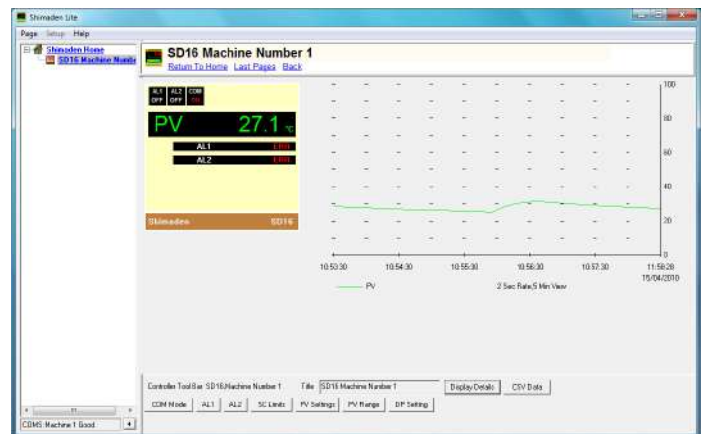


FREE DOWNLOAD

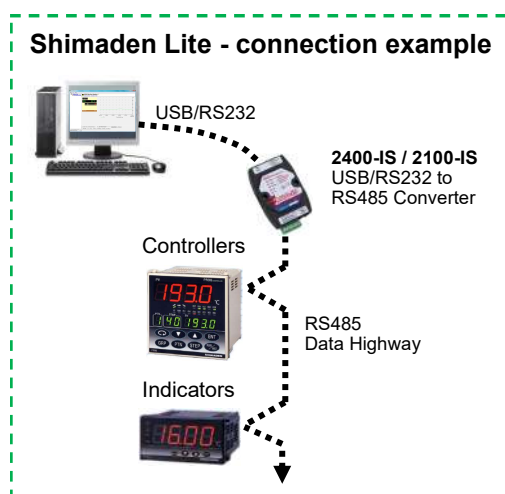
Shimaden Lite Software

Features:

- ◆ User friendly controller configuration from computer.
- ◆ Auto seek - Finds controllers automatically.
- ◆ Auto configuration: Shimaden Lite automatically adopts controller configuration.
- ◆ Password protection.
- ◆ Trend graph of process value and set value.
- ◆ Trend graph has last 100 scans.
- ◆ Scan settings 1 sec, 15 sec, 1 min.
- ◆ Controller identification label.



Note: Shimaden Controllers can also be used with **MicroScan SCADA software**—see pages 30~35 >>



Shimaden Controllers/Indicators	
RS485 or RS232*	RS422 or RS232*
SR90 Series	SR253
SD16A	SR25
SD24	SD20
SR80 Series	SR73A
FP93	FP21°
SR23	
FP23	
SRS10A Series	
MR13^	

Notes:

- * 2400-IS / 2100-IS not required when using RS232.
- * RS232 will connect to one controller only.
- ^ The MR13 has no set value (SV) facility from the computer.
- ° **Important:** When an FP21 is present all devices in the Data Highway must use **4800 baud rate**.

Controllers

SR23 - High Accuracy Digital Controller



CE approved UL applied

2 Channel Control (Option).
(Independent Dual Loop Control).
High resolution: 1/1000°C *at Pt100 : 0.001 to 30.000°C.
High accuracy: 0.1% FS.
Universal input.
Various display: LED & 128 x 32 DOT LCD Screen.
Easy operation and maintenance:
 Infrared Communication.
 Parameter setting software.
Versatile communication function:
 Modbus/Shimaden communication protocols.
 Communicates with MicroScan SCADA and Shimaden Lite software.
Versatile external control:
 DI: Digital input 10 points max.
 DO: Digital output 13 points max.
Proven control stability & reliability:
 Shimaden Expert PID.

MODEL	SIZE	BASE PRICE	OPTIONS	ADD PRICE
SR23	96 X 96	\$1050.00	Control output No 2	\$100.00
			Isolated remote set point	\$390.00
			Retransmission 1	\$80.00
			Retransmission 2	\$160.00
			Ext control DI 10 points/ DO 9 points	\$160.00
			Ext control DI 13 points/ DO 9 points	\$200.00
			Comms RS232, RS485 Modbus/Shimaden	\$80.00

FP23 - High Accuracy Programmable Controller



CE approved UL applied

2 Channel Control (Option).
(Independent Dual Loop Control).
High resolution: 1/1000°C *at Pt100 : 0.001 to 30.000°C.
High accuracy: 0.1% FS.
Max. 400 flexible step program.
Max. up to 20 patterns (Total steps not to exceed 400).
Universal input.
Various display: LED & 128 x 32 DOT LCD Screen.
Easy operation and maintenance:
 Infrared Communication.
 Parameter setting software.
Versatile communication function:
 Modbus/Shimaden communication protocols.
 Communicates with MicroScan SCADA and Shimaden Lite software.
Versatile external control:
 DI: Digital input 10 points max.
 DO: Digital output 13 points max.
Proven control stability & reliability:
 Shimaden Expert PID.

MODEL	SIZE	BASE PRICE	OPTIONS	ADD PRICE
FP23	96 X 96	\$1440.00	2nd output	\$100.00
			Heater break 30/50 amps	POA
			Retransmission 1	\$80.00
			Retransmission 2	\$80.00
			Ext control DI 10 points/ DO 9 points	\$160.00
			Ext control DI 13 points/ DO 9 points	\$200.00
			Comms RS232, RS485 Modbus/Shimaden	\$80.00

Digital Indicators & Selector switch

SD16A - Digital Indicator.

- ◆ Microprocessor based. 4 digit display.
- ◆ Inputs: Thermocouple, RTD, Current, Voltage.
- ◆ Display accuracy of $\pm(0.3\% \text{ FS} + 1 \text{ digit})$.
- ◆ Analogue output 4~20mA or 0~10V.
- ◆ Two alarm relay outputs SPST.
- ◆ Comms: RS232C, RS485; Modbus/Shimaden.
- ◆ Communicates with MicroScan SCADA and Shimaden Lite software.
- ◆ IP66 front panel.
- ◆ LED display with 20mm high digits.
- ◆ Optional power supply of 24Vac/dc.

MODEL	SIZE	BASE PRICE	OPTIONS	ADD PRICE
SD16A	96 x 48	\$290.00	24Vac/dc power supply	\$50.00
			Alarms	\$60.00
			Retransmission *	\$100.00
			Sensor Supply * 24Vdc 25mA	\$100.00
			Comms RS232, RS485 Modbus/ Shimaden	\$120.00

Notes:

Specify 4~20mA when ordering.

* Can have either Retransmission OR Sensor supply (not both).



SD24 - High Accuracy Digital Indicator.

- ◆ Microprocessor based. 5 digit display (40,000 count).
- ◆ Inputs: Thermocouple, RTD, Current, Voltage.
- ◆ High display accuracy of $\pm(0.1\% \text{ FS} + 1 \text{ digit})$.
- ◆ 3 Display modes: Peak hold, Bottom hold, Display hold.
- ◆ Two external control inputs standard (configurable).
- ◆ 2 or 4 Relays for events.
- ◆ Comms: RS232C, RS485; Modbus/Shimaden.
- ◆ Communicates with MicroScan SCADA and Shimaden Lite software.
- ◆ IP66 front panel.
- ◆ LED display with 14.3mm high digits.
- ◆ Optional power supply of 24Vac/dc.
- ◆ Analogue output 4~20mA or 0~10V.

MODEL	SIZE	BASE PRICE	OPTIONS	ADD PRICE
SD24	96 x 48	\$450.00	24Vac/dc power supply	\$50.00
			Alarms x2	\$60.00
			Alarms x4	\$90.00
			Retransmission *	\$100.00
			Comms * RS232, RS485 Modbus/ Shimaden	\$120.00
Sensor Power Supply	\$100.00			

Note:

* Can have either Retransmission OR Comms (not both).



KR16A - Selector switch.

- ◆ Six way selector rotary switch.
- ◆ Panel mount.
- ◆ Ideal for use with the SD16A or SD24 digital indicators.

MODEL	SIZE	PRICE
KR16A	96 x 48	\$250.00



Servo Controllers

EM51 - Servo controller.



- ◆ Inputs: Current or Voltage.
- ◆ Plug-in to DIN rail mount base.
- ◆ Outputs: SSR drive or Relay.
- ◆ Feedback resistance: 100 to 2000 ohms. 3 wire.

MODEL	SIZE	PRICE
EM51	80 x 50	\$425.00

EM70 - Intelligent Servo controller.



- ◆ Inputs: Current, Voltage or Potentiometer.
- ◆ Panel mount.
- ◆ Outputs: SSR drive or Relay.
- ◆ Feedback resistance: 100 to 2000 ohms. 3 wire.
- ◆ Remote setting by digital inputs.

MODEL	SIZE	PRICE
EM70	96 x 96	\$990.00

Thyristor Power Regulators

PAC04 - Solid state relay with Radiating Fin.

- ◆ Single phase: 100~240Vac.
- ◆ Control input: 4.5~32Vdc.
- ◆ Indication: Red LED for 'on'.
- ◆ Built-in heat sink.
- ◆ DIN rail mountable.



MODEL	SIZE	PRICE
PAC04-020	20 amp	\$98.00
PAC04-040	40 amp	\$175.00

PAC18A - Single phase power regulators.

PAC18A is a Thyristor for smooth, fast switching of power loads for ultimate control.

- ◆ Easy front key setting.
- ◆ 7-segment LED displays input and output values and various parameters.
- ◆ Phase angle or Zero voltage switching (user configurable).
- ◆ Universal Power supply: 100~240Vac.
- ◆ Control input: 4~20mA or contact.
- ◆ Current capacity: 20, 30, 45, 60, 80 & 100 amps.



MODEL	SIZE	PRICE
PAC18A-020	20 amp	\$495.00
PAC18A-030	30 amp	\$528.00
PAC18A-045	45 amp	\$726.00
For larger models.		POA

PAC26 - Single phase power regulators.

- ◆ Phase angle or Zero voltage switching.
- ◆ Power supply: 200~240Vac.
- ◆ Control input: 4~20mA or contact.
- ◆ Current capacity: 20, 30, 45, 60, 80, 100, 150, 250, 350, 450 amps.
- ◆ Features: Over current protection, Soft start, Constant voltage output by voltage feedback.

MODEL	SIZE	PRICE
PAC26-031	30 amp	\$1170.00
PAC26-101	100 amp	\$2025.00
For other models.		POA



PAC35 - Three phase power regulators.

- ◆ Phase angle or Zero voltage switching.
- ◆ Power supply: 380~440Vac.
- ◆ Control input: 4~20mA or contact.
- ◆ Current capacity: 20, 30, 45, 60, 90 & 135 amps.

MODEL	SIZE	PRICE
PAC35-020	20 amp	\$1045.00
PAC35-030	30 amp	\$1135.00
For larger models.		POA



BTC-9300 Digital Controller



BTC-9300

Controllers

- ◆ Autotuning controller with fuzzy logic + PID processing.
- ◆ Hi-speed processor: 10 samples per second.
- ◆ Configurable input: Thermocouple, RTD, Current and Voltage.
- ◆ Output: mA, mV, SSR drive, Relay.
- ◆ Remote set point via the separate 4~20mA input.
- ◆ Timer function and ramp rate function.
- ◆ High and low alarms. Heating/cooling control.
- ◆ Power supply: 90~264Vac.
- ◆ RS485 or 4~20mA retransmission.
- ◆ 4 digit display.
- ◆ IP65 front panel.
- ◆ Built in pressure/pump control algorithm.

MODEL	SIZE	BASE PRICE
BTC-9300	48 x 48	\$432.00
Options		Add Price
Retransmission	4~20mA	\$95.00
Comms		\$95.00
Low Volt Power Supply	11~26Vdc	\$60.00

BTC-C21/C91 Low Cost Digital Controller



BTC-C21



BTC-C91

- ◆ Autotuning controller with fuzzy logic + PID processing.
- ◆ Configurable input: Thermocouple or RTD.
- ◆ Outputs: mA, SSR drive, Relay (Please specify when ordering).
- ◆ Selectable alarm modes.
- ◆ 1 alarm relay.
- ◆ Standard Power supply: 90~240Vac.
- ◆ Soft start ramp and dwell timer.
- ◆ 4 digit display.
- ◆ IP65 front panel C21. IP30 front panel C91.

MODEL	SIZE	PRICE
BTC-C21	48 x 24	\$242.00
BTC-C91	48 x 48	\$242.00
Option		
BTC-C21-LV (Relay Output)	Power supply: 11~26Vdc/ac	\$242.00

L91 Limit Controller

The limit control **Limitrol L91** is an over temperature protection or a high limit safety device with a latching output for shutting down the power in an abnormal condition.

- ◆ High limit, low limit and high/low limit control, programmable.
- ◆ Input: Thermocouple, RTD, mV, mA, available.
- ◆ Output: SSR drive, Relay.
- ◆ Sensor break detection.
- ◆ IP30 front panel.
- ◆ Size: 48 x 48.
- ◆ Power supply: 90~264Vac



L91

MODEL	DESCRIPTION	PRICE
L91-4111	Internal Reset	\$226.00
L91-411B	External Reset	\$226.00

Controllers

BTC-4300 Digital Controller

- ◆ Autotuning controller with fuzzy logic + PID processing.
- ◆ Hi-speed processor: 10 samples per second.
- ◆ Configurable input 1: Thermocouple, RTD Pt100, mA, V.
- ◆ Input 2: mA, V. Remote Set Value possible.
- ◆ Event Input (DI) standard.
- ◆ Output 1: mA, V, SSR drive, Relay. (specify when ordering.)
- ◆ Output 2 option: mA, V, SSR drive, Relay (Heat/Cool control).
- ◆ Remote setting of 4~20mA.
- ◆ Timer function and ramp rate function.
- ◆ Two alarms.
- ◆ RS485 or 4~20mA retransmission.
- ◆ 4 digit display.
- ◆ IP65 front panel.
- ◆ Built in pressure/pump control algorithm.
- ◆ Power Supply: 90~264Vac.



BTC-4300

MODEL	SIZE	BASE PRICE
BTC-4300	96 x 96	\$556.00
Options		Add Price
Output 2	Specify option	\$50.00
Retransmission	4~20mA	\$95.00
Comms		\$95.00

Relay, SSR drive, mA, V.

BTC-704 Digital / Analogue Controller

- ◆ On/off or proportional control, selectable.
- ◆ Input: Thermocouple or RTD, available.
- ◆ Output: SSR drive, Relay.
- ◆ Compact size, only 65 mm deep.
- ◆ Wide selection of ranges.
- ◆ Deviation alarm $\pm 10\%$ of span.
- ◆ Power Supply: 90~240Vac.

MODEL	SIZE	PRICE
BTC-704	72 x 72	\$274.00



BTC-704

BTC-404 Digital / Analogue Controller

- ◆ On/off or proportional control, selectable.
- ◆ Input: Thermocouple or RTD, available.
- ◆ Output: SSR drive, Relay.
- ◆ Compact size, only 53 mm deep.
- ◆ Wide selection of ranges.
- ◆ Deviation alarm $\pm 10\%$ of span.
- ◆ Power Supply: 90~264Vac.

MODEL	SIZE	PRICE
BTC-404	96 x 96	\$274.00



BTC-404

BTC-901 Analogue Controller

- ◆ On/off or proportional control, selectable.
- ◆ Input: Thermocouple or RTD, available.
- ◆ Output: SSR drive, Relay.
- ◆ Compact size, only 86 mm deep.
- ◆ Power Supply: 200~240Vac.

MODEL	SIZE	PRICE
BTC-901	48 x 48	\$154.00



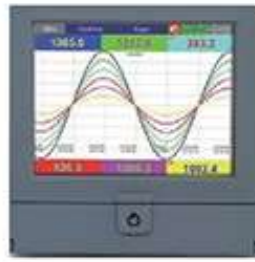
BTC-901

Chart Recorders

PR Series - Paperless Recorders



PR10



PR20



PR30

- ◆ Touch Screen, TFT, 65K color.
- ◆ 100 msec. scan rate.
- ◆ Internal memory: 256 MB Flash.
- ◆ CPU: ARM Cortex-A8, 1Ghz.
- ◆ Power Supply: 90~250Vac Standard.
11~36Vdc Optional.
- ◆ Standard: Ethernet, SD slot & USB.
- ◆ Option: RS232/422/485 & Pulse input.
- ◆ Protection: IP65 front & IP20 rear.
- ◆ Standards: CE, cULus & RoHS.
- ◆ Pulse input for flow applications.
- ◆ Direct Printer connectivity.
- ◆ Webserver & Email directly from Recorder.
- ◆ Remote IO channels, Virtual channels.
- ◆ Master & Slave, Modbus RTU and TCP protocols.
- ◆ Custom display pages similar to HMI.
- ◆ Batch operations, built in security & FDA 21 CFR.

MODEL	SIZE	DESCRIPTION	PRICE
PR10	144 x 144 x189mm	Low cost Paperless Recorder 4.3" 3, 6 channels	POA
PR20	144 x 144 x189mm	Popular Paperless Recorder 5.6" 3, 6, 12, 18, 24 channels	POA
PR30	288 x 288 x189mm	High-end Paperless Recorder 12.1" 3, 6, 12, 18, 24, 30, 42, 48 channels	POA
Options			
6 Relay Outputs			POA
6 Digital Inputs			
11~36Vdc Power Supply			
RS485			
Portable, Power Cord and Power Switch			

HYBRID CHART RECORDER CR06 Digital 6 channel Recorder



CR06

- ◆ Six channel dotting hybrid recorder.
- ◆ Configurable inputs: dc volts / dc milli-amps / Thermocouples / Pt100.
- ◆ 100mm chart width.
- ◆ Printing by a ribbon cassette.
- ◆ Date stamping.
- ◆ Chart speed of 10~1500mm/hr in 28 steps.
- ◆ Scan rate of 10sec/6 channels max.
- ◆ Digital outputs: 6 relay outputs for alarms.
- ◆ Digital inputs: 3 digital inputs for 12 selectable function.
- ◆ Comms: RS232C (standard) or RS485 (option).
- ◆ Front panel protection of IP65.
- ◆ Dimensions: Front Bezel = 144x144mm, Cut Out = 138x138mm, Depth = 150mm.

MODEL	DESCRIPTION	PRICE
CR06	Six channel recorder	\$2280.00
Options		Add price
	6 relay outputs	\$735.00
	3 digital inputs	\$545.00
	RS485	POA
	Out of paper sensor	\$1015.00
Consumables:		
	Ribbon cassette	\$58.00
	Chart	\$8.50

Chart Recorders

TT260 Circular Chart Recorder Mains Operated

TT260 is a circular chart recorder for fixed mounting and mains power supply. For freezers, refrigerators, cool rooms, ovens, food processing equipment, pH & water quality monitors etc. Very easy to operate. The simplest way to provide written proof of compliance with regulations. Optional with full battery back up and one or two alarm contacts.

TEMPERATURE:

The ranges are standard in Celsius degrees.
For Fahrenheit and other ranges, please enquire.

Chart Rotation:

Standard rotation: 24 hours or 7 days. Optional Special chart rotation, ie. 12 hours or 31 days available for some ranges. Please enquire.

OPTIONS:

Battery backup for all functions.
Automatic charging circuit for NiCad battery will secure correct operation of both chart drive and recording for 2~4 weeks after mains failure, depending on actual circumstances.
Optional alarm contacts will also function, but may reduce the working time to 1~3 weeks after mains failure (fully recharged battery).

Alarm Contacts:

Adjustable from the front over the whole range.
Hysteresis for alarms: Standard 0.5% of range.
Output from alarm(s): Change-over relay(s):
Maximum switching voltage: 220Vac, 250Vdc.
Maximum continuous current: 2A.
Maximum switching power: 60W (dc), 125 VA (ac) with dc voltage: 50~150 Watt, depending on voltage.
Maximum power rating with ac voltage: 250 VA.

Technical Specifications:

Inputs: Pt100 for temperature, 4~20mA, 0~1V, and others on request.
Accuracy: ±1% of range.
Ambient operating temperature: -30 to 60°C.
Operating Principle: Potentiometric with full servo system.
Electronics: Thick film hybrids incorporating bipolar and locmos devices.
Power Supply: 200~250Vac, 50/60Hz (standard). Others at request.
Chart Size: 100mm.
Casings: Shock resistant plastic with seal around door.
Panel Mounting: (standard)
Front 144 × 144 mm.
Cut out panel 138 × 138 mm.
Depth behind panel 90 mm. Screw terminals.
Wall mounting: (optional)
Front: 184 × 143 × 90 mm.
Incl brackets: 220 × 143 mm.



Special Features:

- ◆ High Accuracy
- ◆ Lockable.
- ◆ Fast Response.
- ◆ Many options.
- ◆ Compact 100mm circular chart.
- ◆ Many specialised ranges.

Ranges / Options for the TT260:

Ranges °C	Div °C	Chart no:
-20-110	2	20.110
-55-100	1	55.100
-0-100	2	0.100
-40-85	1	40.85
-70+20	2	70.20
-20-65	1	20.65
0-45	1	0.45F
0-30	1	0.30
-30+15	1	30.15
+15-30	1	15.30
-25 0	0.5	25.0
0-25	0.5	0.25
+70-20	2	70.20
-15+15	1	15.15
+15-15	1	15.15
+30-15	1	30.15
-15+30	1	15.30
+20-5	0.5	20.5
0+25	0.5	0.25
+25 0	0.5	25.0
0+30	1	0.30
0+45	1	0.45
+20+65	1	20.65
+40+85	1	40.85
0+100	2	0.100
+55+100	1	55.100
+20+110	2	20.110
+50+140	2	50.140
+110+200	2	100.200
0+250	5	0.25
+300	10	0.30
+190+280	2	190.280
0+300	10	0.30
0+450	10	0.45

MODEL	DESCRIPTION	PRICE
Portable:		Nett
TT210	Temperature recorder, Electronic c/w sensor.	\$1410.00
Panel mount:		All Nett
TT260	Chart recorder, 240v Temp - Pt100 Without sensor.	\$1410.00
TT260	Chart recorder, 240v Process - 4~20mA.	\$1410.00
TT260	Chart recorder, 240v Event - Contact 12Vdc 200mA.	\$845.00
TT260	Chart recorder, 12volt Temp - Pt100 Without sensor.	\$1395.00
Optional	Wall mounting.	\$122.00
	Battery back up.	\$226.00
	One alarm contact.	\$168.00
	Two alarm contacts.	\$260.00
	Power failure alarm.	\$93.00
TTP-50	Sensor Pt100 1.5m cable & plug for TT210.	\$196.00
TTP-51	Sensor Pt100 3m cable for TT210.	\$170.00
TTP-90	Disposable pen.	\$32.50
TTC-	Charts Box of 100.	\$75.00
TT-W	Wall bracket in stainless steel for TT202 & TT210.	\$74.00
TT-C	Carry-case in leather for TT202 & TT210.	\$94.00

Indicators

NIVELCO

Unicont PDF Field mounting indicator. Loop powered.



PDF-501



MODEL	DESCRIPTION	PRICE
PDF-401	Field mounting indicator. Loop powered. Mount: Wall mount. Temperature: -25~60°C. Housing: Paint coated aluminium. Display: 6 digit LCD, engineering units and bar graph. Power: 2 wire, 4~20mA. Option, 4 wire, 4~20mA/HART. Protection: IP67.	\$810.00
PDF-401 Ex marking	Field mounting indicator. Ex version. Specifications as above. Ex 112GEExia11CT6 / Ex 11GEEExd11BT6.	POA
PDF-501	Housing Option: reinforced plastic. Not available in Ex version.	\$770.00

INTECH



M7 Plug in Display. Loop powered.

MODEL	DESCRIPTION	PRICE
M7	Plug in Display. Loop Powered. Input: 4~20mA, 2 wire. Display: 4-digits LCD. Housing: Plastic. Dimensions: 45.4 x 66.9 x 46.9mm (WxHxD)	\$180.00

NIVELCO



PKK-312

Unicont PKK Multifunction limit switch.

MODEL	DESCRIPTION	PRICE
PKK-312-1	Loop current monitoring relay and digital isolator. Mount: DIN rail. Operating modes: (selectable) Limit switch, Differential switch, Window switch. Supply voltage: 230Vac. LV option available, see below. Input: 1~22mA & dry contact. Output: Relay, 8 amps, 250Vac. Transmitter Power Supply: 30v, I _{max} = 70mA.	\$282.00
PKK-312-4	LV Supply voltage: 24Vac/dc. Transmitter Power Supply: 24v, I _{max} = 80mA.	\$355.00

See Page 17 for Intech Panel Indicators. <<

Level Switches

Nivopoint MRC-203 Series. Magnetic Float Switch.

Applications:

- ◆ Multipoint level switching.
- ◆ For controlling pumps, valves.
- ◆ Level detection of aggressive liquids.
- ◆ Level switching of explosive liquids.

MODEL	DESCRIPTION	PRICE
MRC-104-3	Magnetic float level switch with reed relays. Wetted parts: Stainless steel. Mount: 2" BSP. Protection: IP65. Pressure: 25 bar. Medium temp: -40~150°C. Ambient temp: -40~100°C. Insertion length: 0.3m. Switching points: 1 switch NO/NC. Switch rating: 250Vac, 3A / reed relay, max. 9.	\$495.00
MRC-203-3	As above but with 2 switches and 0.3m insertion length.	\$520.00
MRC-204-3	As above but with 2 switches and 0.4m insertion length.	\$540.00
	Ex version.	POA
	Other models available (Different lengths and switching points).	POA



NIVELCO

Level Switches

NIVELCO



Rubber protection sleeve
MKG-210, MKS-210.



Square flange
MKA-210-0



Two inch BSP mount
MKA-21B



Flanged mount
MKA-211



Submersible
MKU-210
10m cable



Top mounted,
L arm.
MKA-210-4L



Side mounted,
Z arm.
MKA-210-4Z

**Nivomag MKA-210 Series. Llyod (GL) certified.
Fixed differential level switch.**

MODEL	DESCRIPTION	PRICE
MKA-210-0 Side mount.	Magnetic float level switch with fixed differential. Wetted parts: Stainless steel. Mount: Square flange. Protection: IP65. Pressure: 25 bar. Liquid density: Min. 0.7 SG Ambient temp: -20~80°C. Liquid temp: -20~250°C. Switch rating: Microswitch. 10A, 250Vac12. 0.6A, 220Vdc13. Protrusion length: 202mm. (other lengths available, refer below).	\$598.00
Options		Add Price
With 2" BSP process connection. MKA-21B-0.		N/C
With rubber protection sleeve. (Medium 0~100°C). MGK-210		\$110.00
With silicone protection sleeve. (Medium 0~200°C). MKS-210		\$145.00
Flange mount. Screwed. MKA-211.		POA
With protrusion length: 100mm, 200mm or 300mm Other lengths available.		POA
With "L" or "Z" profile. MKA-210-4L/Z.		\$120.00
Underwater IP68. MKU-210.		\$298.00
Ex version.		POA

Ex version available
 Cenelec, Germanischer Lloyd.
 Ex approval: EEx dme IIC

Specific gravity of liquids:	
Petrol	0.700
Kerosene	0.800
Olive oil	0.920
Water	1.000
Sea water	1.025
Milk	1.030
Sulfuric acid	1.140
Glycerine	1.260
Mercury	13.595

MINIMUM LIQUID DENSITY (kg/dm³) S.G.:				
Arm length				
Float diameter	100mm	200mm	300mm	1m ~ 3m
52mm	0.7	0.8	0.85	-
64mm	0.7	0.8	0.8	-
120mm	-	-	-	0.7

MODEL SELECTION:			
	MK-21	MK-22	MK-23
Fixed differential.	√		
Adjustable differential.		√	√
Straight arm.	√	√	√
L or Z arm.	√		
Side mount.	√	√	
Top mount.	√		√
Submersible.	√		
Rubber protection sleeve.	√		
Flanged process connection.	√	√	√
Threaded process connection.	√		
Ex version.	√	√	√
Tester.	√	√	

Nivomag MKA-220 Series. Llyod (GL) certified.
Adjustable differential level switch.

Level Switches

NIVELCO

Switch differential between high and low switch set points can be changed by changing the positions of the two pins.



Adjustable switch differential MKA-220 with cylindrical float

Ex version available
Genelec, Germanischer Lloyd.
Ex approval: EEx dme IIC T4...T6.

MODEL	DESCRIPTION	PRICE
MKA-220-0 Side mount.	Magnetic float level switch with adjustable differential. Wetted parts: Stainless steel. Mount: Square flange. Protection: IP65. Pressure: 25 bar. Liquid density: Min. 0.7 SG Ambient temp: -20~80°C. Liquid temp: -20~250°C. Switch rating: Microswitch. 10A, 250Vac12. 0.6A, 220Vdc13. Protrusion length: 268mm (other lengths available, refer below).	\$800.00
Options		Add Price
	With rubber protection sleeve. (Medium 0~100°C)	\$110.00
	With silicone protection sleeve. (Medium 0~200°C)	\$145.00
	Flange mount.	POA
	With protrusion length. Several lengths available.	POA
	Underwater IP68.	\$298.00
	Ex version.	POA

Nivomag MKA-230 Series.
Adjustable differential level switch.

MODEL	DESCRIPTION	PRICE
MKA-230-1 Top mount.	Magnetic float level switch with adjustable differential. Wetted parts: Stainless steel. Mount: Square flange. Protection: IP65. Pressure: 16 bar. Liquid density: Min. 0.7 SG Ambient temp: -20~80°C. Liquid temp: -20~250°C. Switch rating: Microswitch. 10A, 250Vac12. 0.6A, 220Vdc13. Protrusion length: 1265mm (other lengths available see below). Differential: 1000mm max. (Arm Length)	\$910.00
Options		Add Price
	With longer protrusion length. 2265mm protrusion. 2000mm max. differential. 3265mm protrusion. 3000mm max. differential.	\$60.00 \$115.00
	Flange mount.	POA
	Ex version.	POA

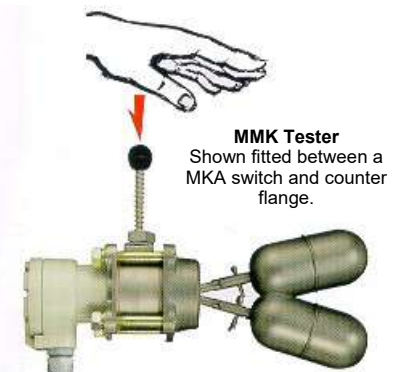
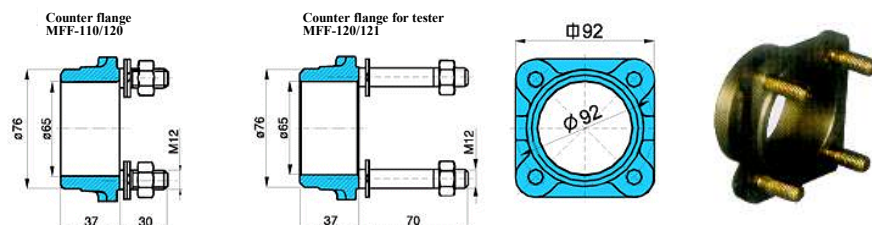


Top mount.

Switch differential can be adjusted by moving the rings on the rod. The weight of different rod lengths is compensated for by adjusting the counter weight.

Nivomag MMK Tester & Nivomag MFF Counter flange.

MODEL	DESCRIPTION	PRICE
MMK-110 MMK-120	Tester for magnetic float level switches. Requires tester flange. Steel Test Plunger. Stainless Steel Test Plunger.	\$248.00 \$369.00
MFF-110 MFF-111 MFF-120 MFF-121	Counter flange for magnetic float level switches. Steel Flange. Steel Tester Flange. Stainless Steel Flange. Stainless Steel Tester Flange.	\$137.00 \$148.00 \$174.00 \$185.00



The tester is mounted between the switch body and the counter weight. Pressing the plunger pushes the arm counter weight which activates the switch. Operation of the switch can be checked without any filling or emptying procedures.

Level Switches

The Nivoswitch vibrating forks are applicable for level or flow switching of normal and explosive liquids.



Nivoswitch RCM/RCR Series. Vibrating fork level switch. For liquids.

NIVELCO



RCM-400-1



RCM-401-1

MODEL	DESCRIPTION	PRICE
	Vibrating fork level switch. <i>Most liquids with a maximum viscosity of 10,000 mm²/s (centistokes).</i> Mount: 1" BSP = RCM . Wetted parts: 316 stainless steel. Liquid density: ≥ 0.7kg/dm ³ . Ambient temp: -40~70°C. Medium temp: -40~130°C @ ambient of -40~55°C. -40~95°C @ ambient of -40~70°C. Pressure: Max, 40 bar @ -40~100°C. 25 bar @ -40~130°C.	
RCM-400-1	Shorty version. Probe length: 69mm stainless steel.	\$305.00
RCM-400-3	Type 1 Output: 2 wire ac, 20~255Vac, 50/60 Hz. Connector Plug. Type 3 Output: (NPN/PNP selectable). 3 wire dc, 12~55Vdc, 350 mA with plug in connector. (IP65).	\$305.00
RCM-401-1	Standard version. Probe length: 125mm stainless steel.	\$340.00
RCM-401-2	Type 1 Output: 2 wire ac, 20~255Vac, 50/60 Hz. Connector Plug.	\$398.00
RCM-401-3	Type 2 Output: 2 wire ac, 20~255Vac, 50/60 Hz. 3m Integral Cable. Type 3 Output: (NPN/PNP selectable). 3 wire dc, 12~55Vdc, 350 mA with plug in connector. (IP65).	\$340.00
RCM-402-1	Extended probe: Available on request. Probe length: From a min of 0.2m, to a max of 3m stainless steel.	POA
Options		Add Price
	Cable integral to probe. (IP68). Cable length = 3m.	POA
	Triclamp 2 inch sanitary probe = RCR .	\$112.00
	Highly polished probe = RGx . <i>For more hygienic applications.</i>	POA
	Plastic PFA coated probe = RAX .	POA
	Ex version, Special version of R-400 to be used only with the Nivoswitch JDT remote switching unit.	POA



RCM-401-2
With integral cable
IP68

ECTFE coated probe for aggressive or sticky medium also available - contact Intech.

RFM Series.	DESCRIPTION	PRICE
	Cast aluminium housing. IP67. Power supply: Universal, 20~255Vac / 20~60Vdc. Output: SPDT relay. 250Vac, 8 amps, ac1.	
RFM-400-0	Shorty version. Probe length: 69mm stainless steel.	\$580.00
RFM-401-0	Standard version. Probe length: 125mm stainless steel.	\$595.00
RFM-402-0	Extended probe: Available on request. Probe length: 0.2m (Other lengths available to a max of 3m).	\$820.00
Options		Add Price
	Plastic housing, in lieu of aluminium. R-500.	N/C
	Stainless steel flange, DN50.	\$515.00
	Second relay output.	\$61.00



RFM-400-0



RFM-402-0

Connector Plug IP65	3m Cable IP68	Process connection
-1 = AC	-2 = AC	RCM = 1" BSP
-3 = NPN/PNP	-4 = NPN/PNP	RCR = 2" Tri-clamp

Level Switches



Nivoswitch R Solids Series.
Vibrating fork level switch.
For powders and granules.

MODEL	DESCRIPTION	PRICE
	Vibrating fork level switch. <i>Most powders and granules.</i> Housing: Steel. Protection: IP67. Wetted parts: 316 stainless steel. Minimum medium density: $\geq 0.01\text{kg/dm}^3$. Ambient temp: $-40\sim 70^\circ\text{C}$. Medium temp: $-40\sim 130^\circ\text{C}$ @ ambient of $-30\sim 55^\circ\text{C}$. $-40\sim 95^\circ\text{C}$ @ ambient of $-30\sim 70^\circ\text{C}$. Pressure: Max, 40 bar @ $-40\sim 100^\circ\text{C}$. 25 bar @ $-40\sim 130^\circ\text{C}$.	
RLH-301-3	Mount: $1\frac{1}{2}$ " BSP. Probe length: 137mm stainless steel. Type 3 Output: (NPN/PNP selectable). 3 wire dc, 12~55Vdc, 350 mA with plug in connector. (IP65).	\$469.00
RCM-301-3	Mount: 1" BSP. Probe length: 125mm stainless steel. Type 3 Output: (NPN/PNP selectable). 3 wire dc, 12~55Vdc, 350 mA with plug in connector. (IP65).	\$480.00
RCM-301-4	Mount: 1" BSP. Probe length: 125mm stainless steel. Type 4 Output: (NPN/PNP selectable). 3 wire dc, 12~55Vdc, 350 mA with cable. (IP68).	\$520.00



RLH-301-3

Nivofloat NLP/NLN Series.
Float level switch.
For liquids.

MODEL	DESCRIPTION	PRICE
	Float level switch with adjustable differential. <i>Minimum density of 0.8 g/cm^3 (S.G.).</i> Temperature: $-20\sim 80^\circ\text{C}$. Pressure: 5 bar. Liquid density: Min 0.8 SG Protection: IP68. Wetted parts: non toxic polypropylene. Switch angle: $\pm 45^\circ$ Output: SPDT micro-switch, 8 amp 230Vac.	
NLP-105 NLP-110 NLP-120	PVC cable: 5 metres 10 metres 20 metres	\$72.00 \$100.00 \$155.00
NLN-105 NLN-110 NLN-120	Neoprene cable: 5 metres 10 metres 20 metres	\$100.00 \$155.00 \$250.00

Applications:

- ◆ Drinking water reservoirs.
- ◆ Sewage tanks.
- ◆ Pump protection.
- ◆ Holding tanks.



Features:

- ◆ Mercury free switch.
- ◆ Low specific weight of floating body.
- ◆ Hermetically moulded, double chamber.
- ◆ Switching differential can be set by adjusting the counter weight along the cable.

Level Switches

NIVELCO

Nivocont RKH Series. Vibrating rod level switch. For free flowing granules and powders.



Power Supply	
-1	85~265Vac 120~375Vdc
-2	16~40Vac 19~55Vdc



MODEL	DESCRIPTION	PRICE
	Vibrating rod level switch with adjustable sensitivity. <i>Minimum density of 0.05 kg/dm³ (S.G.).</i> <i>Max granular size: 10mm.</i> Housing: Plastic. Protection: IP67. Mount: 1.5" BSP. Wetted parts: 316 stainless steel. Ambient temp: -30~60°C. Medium temp: -30~110°C @ ambient of -30~50°C. -30~75°C @ ambient of -30~60°C. Pressure: max. 25 bar (absolute). Power supply: 85~265Vac (50/60Hz), / 120~375Vdc. Output: SPDT relay, 8 amp 250Vac1.	
RKH-602	Standard version. Probe length: 207mm.	\$780.00
RKR-605	Pipe extended probe. From a min of 0.5m, to a max of 3m. Probe length: 0.5m. For each extra 100mm over 0.5m: add.....	\$1030.00 \$35.00
RKK-601	Cable extended probe. From a min of 1m, to a max of 20m. Probe length: 1m. For each extra metre over 1m: add..... Medium temp: -25~90°C @ ambient of -30~35°C. -25~75°C @ ambient of -30~60°C. Pressure: max. 6 bar. (Absolute).	\$1192.00 \$24.00
RKH-502	Cast aluminium housing, instead of Plastic.	\$815.00
Options		Add Price
	High temperature. (not RKK) Medium temp: -30~160°C @ ambient of -30~35°C.	\$110.00
	Power supply of: 16~40Vac (50/60Hz), / 19~55Vdc.	N/C
	Solid state output: SPST, ac/dc 350mA / 50V.	N/C
	ABS reinforced plastic housing, in lieu of alu-cast.	N/C
	Fast response.	POA
	Remote mounting electronics.	POA
	Ex version. Ex II D I T6 IP67 (Zone 20). Not Plastic housing.	\$435.00

Typical applications.

- Plastic processing.*
powders, pellets, granulates.
- Chemical industries.*
pills, powders, crystals.
- Agriculture/food industries.*
grains, rice, cereals, feed, flour.
- Pulp and paper industries.*
crushed cellulose, shavings.
- Recycling.*
paper cuts, ground plastic.
- Energy generation.*
fly ash, lime, carbon black.
- Mining and quarry.*
coal, stone powder.
- Construction.*
cement, sand, clay.

Density					
Material	lb/cu.ft	S.G.	Material	lb/cu.ft	S.G.
Alumina, fine	35	0.56	Grape pomace	18	0.29
Alumina, briquette	65	1.04	Grass seed	21	0.34
Ashes, dry	40	0.64	Lactose	32	0.51
Barley	42	0.67	Lime, ground	45	0.72
Blood, dried	40	0.64	Malt, dry, ground	22	0.35
Caustic soda	88	1.41	Meat meal	37	0.59
Cement	95	1.52	Milk, powdered	20	0.32
Clay, fine dry	110	1.76	Oats, rolled	22	0.35
Clay, fire, powdered	52	0.83	Oyster shells, ground	53	0.85
Coal, ground	40	0.64	Peas, dry	48	0.77
Coal, pulverized	34	0.54	Sand, foundry	95	1.52
Feed pellets	38	0.61	Sulphur, powdered	55	0.88
Fish meal	35	0.56	Wheat	48	0.77
Flour	38	0.61	Yeast, dried	41	0.66

Figures are indicative only.

**Nivocont KRK Series.
Conductive level switches.**

Level Switches

NIVELCO

MODEL	DESCRIPTION	PRICE
KRK-512-5	Conductivity liquid level single control relay. Differential or limit switch with adjustable sensitivity and delay. DIN rail mount. Relay output: 1x SPDT. 8 amp 250Vac. Power supply: Universal 24~240Vac/dc. Minimum conductivity: 20 µS/cm (microSeimen). <i>1 microSeimen = 1 micromho.</i>	\$135.00
	Conductivity liquid level dual control relay. Differential or limit switch with adjustable sensitivity and delay. DIN rail mount. Relay outputs: 2x SPDT. 16 amp 250Vac. Minimum conductivity: 20 µS/cm (microSeimen). <i>1 microSeimen = 1 micromho.</i>	
KRK-522-1	Conductive level control switch. 230Vac Power Supply.	\$170.00
KRK-522-4	Conductive level control switch. 24Vac/dc Power Supply.	\$182.00
Probe holders and accessories.		
	Single probe holders for level electrode. Process connection: 3/8" BSP.	
KSP-201	Single probe holder: P/P.	\$48.00
KSS-201	Single probe holder: Steel/PFA.	\$62.00
KSN-201	Single probe holder: Stainless Steel/PFA.	\$83.00
	Probe holders for level electrodes. Process connection: 1.5" BSP.	
KSH-202	Two probes plus reference electrode. Aluminium housing.	\$290.00
KSH-203	Three probes plus reference electrode. Aluminium housing.	\$350.00
KSH-204	Four probes plus reference electrode. Aluminium housing.	\$420.00
KSH-302	Two probes plus reference electrode. Plastic housing.	\$190.00
KSH-303	Three probes plus reference electrode. Plastic housing.	\$236.00
KSH-304	Four probes plus reference electrode. Plastic housing.	\$300.00
KSK-201	Submersible single probe. (Probe hangs on the cable). Stainless steel electrode in an ABS enclosure.	\$30.00
KLN-210	Stainless steel electrode with M6 thread for KS holders. 1m length. Other lengths by request.	\$28.00
	Probe separator for level electrodes. Four way separator.	
KLP-201	For KSH-300 (Plastic housing) and KKH-Series.	\$5.00
KLP-204	For KSH-200 (Aluminium housing)	\$6.00



KRK-512-5



KRK-522



KSH-303



KSK-201



KSP-201



KLP-204



KLP-201

**Nivocont KKH Series.
Compact conductive level switch (replaces KKH-102).**

MODEL	DESCRIPTION	PRICE
	Compact conductive liquid level switch. Suitable for using with 1 or 2 KRK-512 level control switches. Mount: 1½" BSP. Housing: Plastic. Relay outputs: 1x or 2x SPDT 16 amp 250Vac1. Power: 230Vac, optional 24Vac/dc. Minimum conductivity: 10 µS/cm (microSeimen). <i>1 microSeimen = 1 micromho.</i>	
KKH-212	3 probes.	\$289.00
KKH-222	5 probes.	\$410.00
	Stainless electrodes added price.	POA



KKH-212

- * Two independent pump controls or Two independent alarm levels. or Pump control with alarm.
- * No wiring of a separate electronic unit.
- * Selectable high or low fail safe.
- * Adjustable sensitivity.
- * Pressure 1 bar.
- * Protection IP67.

PiloTREK

NON-CONTACT MICROWAVE
LEVEL TRANSMITTERS



Radar Transmitter

Industry Segments:

- ◆ Water, Wastewater.
- ◆ Power.
- ◆ Food and Beverage.
- ◆ Pharmaceutical.
- ◆ Chemical.

Applications:

- ◆ Liquids and slurries in general.

Not affected by foam and agitation!



Protected enclosed Antenna



**PiloTREK W
Non Contact Radar.
For Liquids.**

MODEL	DESCRIPTION	PRICE
	2 Wire 24 GHz K-band RADAR. Easy installation due to narrow Antennas. 24M measuring range for liquids and slurries. ±3mm accuracy. Plug in graphical module. Er > 1.9. Not affected by steam, vacuum or vapors (some range reduction may be required). Easy to set up.	
WEP-140	Radar transmitter with PP housing 40mm horn.	\$2280.00
WEP-14T	Radar transmitter with 2" tri clamp.	\$2599.00
SAP-300	Programming module/indicator, custom made. Integral, lug-in LCD 6 digit display, bar graph and icons. Scalable in engineering units.	\$174.00
Other models available - contact Intech.		



Standard 40mm model

The ultimate answer for liquid level!



Hygienic Hi-temp model
Suitable for milk

Microwave Level Transmitters

MicroTREK Guided Microwave Level Transmitters

The MicroTREK guided microwave level transmitter is designed for continuous level measuring of conductive or nonconductive liquids, pulps and solids. MicroTREK level gauge operates based on the well known TDR (Time Domain Reflectometry) principle.

Micropulses are sent along a probe guide at the speed of light. As soon as the pulse reaches the surface of the medium, it is reflected back to the electronic module. Level distance is directly proportional to the flight time of the pulse. The reflected signal is dependent on the dielectric constant of the material, the feasibility of the measurement is $\epsilon_r > 1.4$. The TDR technology is unaffected by the properties of the medium as well as that of the space above it. Measurement is also unaffected by the change in the physical properties of the materials such as temperature, pressure, dielectric constant.



Main Features

- ◆ Measuring range up to 24 m
- ◆ Accuracy: ± 5 mm
- ◆ Measurement is independent of dielectric constant, temperature, pressure and density variations
- ◆ Rod, cable and coaxial probes
- ◆ Minimum $1.4 \geq \epsilon_r$
- ◆ 2-wire version
- ◆ Graphic display
- ◆ 4~20mA + HART output
- ◆ Medium temperature range: $-30\text{ }^\circ\text{C} \dots +200\text{ }^\circ\text{C}$ ($-22\text{ }^\circ\text{F} \dots +392\text{ }^\circ\text{F}$)
- ◆ Maximum process pressure: 40 bar (580 psig)
- ◆ IP65 Protection

APPLICATIONS

Mono Cable / Mono Rod	Twin Cable	Twin Road	Coaxial Pipe
<ul style="list-style-type: none"> ◆ Cement, limestone, fly ash, alumina, carbon black ◆ All high-viscosity liquids ◆ Mineral powders, free flowing solids ◆ Clean and contaminated liquids ◆ For stilling wells (calibration required) ◆ Aggressive mediums with coated probes ◆ Slightly conductive foams ◆ High temperature applications 	<ul style="list-style-type: none"> ◆ Tank parks with solvents, oil or fuels ◆ Water storage tanks ◆ Plastic granules ◆ For products with low dielectric constant ($\epsilon_r > 1.8$) ◆ Light granules ◆ Where minimum dead-zone is needed ◆ For narrow tanks ◆ For solids with low dielectric constants ($\epsilon_r > 1.8$) ◆ Mounting close to tank wall is possible 	<ul style="list-style-type: none"> ◆ Plastic granule vessels ◆ Coated tanks ◆ Clean and contaminated liquids ◆ Fine powders ◆ Where minimum dead-zone is needed ◆ For narrow tanks ◆ For mediums with low dielectric constants and slightly moving products 	<ul style="list-style-type: none"> ◆ Small vessels or tanks ◆ Solvents, liquefied gases ◆ LPG, LNG ◆ For Clean liquids with low dielectric constant ◆ Agitated or flowing liquids -the probe acts as a stilling well ◆ Liquid or vapour spray near the probe ◆ High temperature applications - probe can be heated ◆ Contact possible with metallic object or tank wall without measurement uncertainty. ◆ Bypass applications

Microwave Level Transmitters

Microtek H 400 / H 500 Guided Microwave Level Transmitters.

MODEL	DESCRIPTION	PRICE
	2-wire TDR level transmitter for liquids and free-flowing solids with stainless steel probe with or without plastic coating. Measuring range up to 24 m . Output: 4~20 mA with HART. (HART configuration software is provided free of charge). Accuracy for liquids: ±5 mm for L < 15 m (±5 mm ±0.05% for L ≥ 15m). Accuracy for powder and bulk solids: ±20 mm for L < 15 m (±20 mm ±0.05% for L ≥ 15m). Power supply: 18~35Vdc Pressure rating: 40 bar (may be restricted by the pressure rating of the used flange). Enclosure of the electronics: IP65 / NEMA 4. Sealing: FPM as standard (EPDM or FFKM available on request).	
HTR-501	Mono rod 1" BSP 1m (max 3 m)	\$2400.00
HTT-501	Twin cable 1.5" BSP 1m (max 24 m)	\$3500.00
HTA-501	Coaxial 1" BSP 1m (max 6 m)	\$2940.00
Options		
	HT Model 200°C Local LCD indicator FEP or PFA coated	POA POA POA



Informative εr values			
Butane	1.4	Diesel Oil	2.1-4
Cement	1.5-10	Grain	3-5
PB	1.6-1.9	Limestone	6.1-9.1
Kerosene	2.1	Sulphuric Acid	20
Crude Oil	2.1	Acetone	21
Whiting Powder	2.2-2.5	Ethanol	24
Benzene	2.3	Methanol	33.1
Asphalt	2.6	Glycol	37
Clinker	2.7	Nitrobenzene	40
Resin	3.6	Water	80



Level Transmitters



**Nivocap CT-300 Series.
2 wire capacitance level transmitter.
For liquids, powders, granules.**

Features

- ◆ Two-wire: HART feature.
- ◆ Microcontroller based.
- ◆ Rigid and flexible probes.
- ◆ Plug-in field display module.
- ◆ Simple programming.
- ◆ Ex version available.
- ◆ High temperature model.
- ◆ HART communication.

MODEL	DESCRIPTION	PRICE
	<p>Capacitance solid rod probe level transmitter. <i>Minimum relative dielectric constant of 2.</i> <i>Maximum relative dielectric constant of 60.</i></p> <p>Housing: Plastic (PBT glass fibre reinforced, flame retardant). Aluminium and SS models also available.</p> <p>Protection: IP67.</p> <p>Mount: 1" BSP.</p> <p>Wetted parts: 316 stainless steel.</p> <p>Probe: Partly or fully coated steel cable.</p> <p>Probe length: Rod, min 0.2m. max 3.0m. Cable, min 1m. max 20m.</p> <p>Ambient temp: -25~70°C.</p> <p>Medium temp: -25~200°C.</p> <p>Pressure: Max. 16 bar at 200.°C. (Absolute).</p> <p>Capacitance: ~600pF/m</p> <p>Power Supply: 12~36Vdc max. 22 mA.</p> <p>Output: 4~20mA, two wire. HART Communication.</p> <p>Load resistance: max. $R_L = (U_S - 12V) / 0.02A$</p>	
CTR-302-2	Insulated rod, level transmitter. 0.2m	\$1090.00
CTR-305-2	Insulated rod, level transmitter. 0.5m	\$1120.00
CTR-310-2	Insulated rod, level transmitter. 1.0m	\$1200.00
CTP-302-2	Partially rod, level transmitter. 0.2m	\$1090.00
Options for Rod probe.		Add Price
	Aluminium (Paint coated) housing	\$45.00
	Stainless Steel housing	\$615.00
	PFA insulated: For each extra 100mm over 0.2m.	\$15.00
	Partially insulated: For each extra 100mm over 0.2m.	\$7.00
	Note: Probe length to a max of 3m.	
	High temperature: -25~200°C.	\$195.00
Accessories.	Display SAP-202.	\$168.00
	HART Modem. SAT-304	\$420.00



PROBE SELECTION	
<p>Conductive materials:</p> <ul style="list-style-type: none"> ◆ Water based solutions. ◆ Acids. ◆ Bases. 	<p>Only insulated probe can be used.</p>
<p>Non-conductive materials:</p> <ul style="list-style-type: none"> ◆ Most petrochemicals. ◆ Solvents. 	<p>Insulated or non-insulated probe can be used.</p>

Level Transmitters

Features

- ◆ 4~20mA output.
- ◆ Stainless steel flush diaphragm.
- ◆ Wide variety of process connections.
- ◆ Great choice of ranges.
- ◆ High accuracy <0.25%.
- ◆ IP 67 protection.

Applications

- ◆ Most liquids and masses in tanks and vessels.
- ◆ Chemicals with dense vapour or gas layer above the surface.
- ◆ Viscose or corrosive materials.
- ◆ Foaming liquids.

Nivopress DTF

Level and Pressure transmitter. (Hydrostatic Liquid Level)

MODEL	DESCRIPTION	PRICE
	Level and Pressure transmitter. Mount: 1.5" BSP. Housing: Plastic (Standard) or Aluminium. Protection: IP67. Wetted parts: Stainless steel. Accuracy: < 0.25%. F.S.O. Turn down: ~1 : 2. Operating temp: -30~70°C. Medium: -25~125°C. Output: 4~20mA, 2 wire, loop powered. $U_T = 12\sim30Vdc.$ Load resistance: max. $R_L = (U_S - 12V) / 0.02A.$	
DTF-611-2	Range: 0~0.16bar Overpressure: 0.5bar	\$1500.00
DTF-621-2	Range: 0~0.25bar Overpressure: 1bar	\$1500.00
DTF-631-2	Range: 0~0.4bar Overpressure: 1bar	\$1500.00
DTF-351-2	Range: 0~1bar Overpressure: 3bar	\$1500.00
Options		Add Price
	Aluminium housing.	\$45.00
	Triclamp fitting, 2 inch.	\$163.00
	SAP-203 display module.	\$168.00
	HART Communication.	\$248.00



EchoTREK STD-30J Series - 4 Wire.

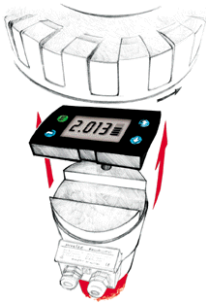
Ultrasonic level transmitter. Stand alone unit.

MODEL	DESCRIPTION	PRICE
4 Wire	EchoTREK compact ultrasonic level transmitter. Housing: Powder coated aluminium. Protection: Housing, IP67. Sensor, IP65. Transducer: Closed cell polyurethane foam sensor face. Polypropylene sensor housing. Beam angle: 5°. Ambient temp: -25~60°C Process temp: -30~75°C. Pressure: 0.7~1.1 bar (absolute). Power supply: 85~255Vac. 50/60Hz. 6.8VA. 11.4~40Vdc 4.1W / 11.4~28Vac 4.6A Outputs: 4~20mA, 600ohm, galv isolated. relay, SPDT, 250Vac / 3amp, ac1.	
STD-34J	Range 0.6m to 15m. Flange, DN150 (min size) 40 kHz. 3x.*	\$2182.00
STD-33J	Range 0.6m to 30m. Flange, DN150 (min size) 30 kHz. 3x.*	\$2520.00
STD-31J	Range 1m to 60m. Flange, DN300 (min size) 15 kHz. 4x.*	\$2875.00
* Dust penetration. 1x = weak...4x = excellent.		
Options		Add price
	SAP-100 programming module/indicator, custom made. Integral, plug-in LCD 6 digit display, bargraph and icons. Scalable in engineering units.	\$185.00
	HART Communication.	\$225.00



Ultrasonic Level Transmitters

NIVELCO



EchoTREK SEP/SEM-300 Series—2 Wire.
Ultrasonic level transmitter.
With PP or PVDF transducers.



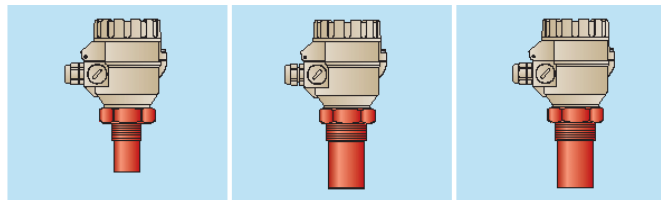
MODEL	DESCRIPTION	PRICE
2 Wire	EchoTREK compact ultrasonic level transmitter. Housing: Plastic. Protection: Housing, IP67. Sensor, IP68. (Submersible). Transducer: Standard = Polypropylene, (PP). Flange material: Polypropylene, (PP). Ambient temp: -30~60°C. Process temp: -30~90°C. Pressure: 0.3~3 bar (absolute). Power supply: 11.4~36Vdc / 4.8mw...720mw. Outputs: 4~20mA, (3.9...20.5mA).	
SEP-390-2	Range 0.2m to 4m. Mount, 1.5" BSP. 6° 80 kHz. 1x.*	\$1250.00
SEP-380-2	Range 0.25m to 6m. Mount, 2" BSP. 5° 80 kHz. 1x.*	\$1250.00
SEP-370-2	Range 0.35m to 8m. Mount, 2" BSP. 7° 50 kHz. 2x.*	\$1500.00
SEM-362-2	Transducer material of Stainless Steel. Process temp: -30~100°C (120 °C for max 2 hrs). Range 0.4m to 7m. Mount, Flush flange. Din 80.	\$2080.00
SEM-344-2	Range 0.55m to 12m. Mount, Flush flange. Din 125.	\$2450.00

* Penetration through fumes / vapour, foam. 1x = weak...4x = excellent.

Options	Add price
SAP-200 programming module/indicator, custom made. Integral, plug-in LCD 6 digit display, bargraph and icons. Scalable in engineering units.	\$168.00
Housing material of powder coated aluminium.	\$55.00
Transducer material of Kynar, (PVDF).	\$105.00
Larger flanges.	POA
Mounting bracket 200mm.	\$155.00
DATALOGGER 10,000 sets of data-HART.	\$160.00
HART Communication.	POA
R-Relay	\$98.00

- ◆ Practically any liquid.
- ◆ Reliable measurement even under extreme conditions with vapours, fumes, stirrers, foam on chemicals.
- ◆ 32 point curve linearisation.
- ◆ Volume calculation with pre-programmed tank shapes.
- ◆ Open channel flow measurement with pre-programmed flumes and weirs.
- ◆ Capability to suppress interference from two fixed targets.
- ◆ 4~20mA continuous output plus a fully programmable relay output.

EchoTREK SEP-300 Series.



SEP-390

SEP-380

SEP-370

Type	Main application field
SEP-390	Small tanks where dead band is critical.
SEP-380	Small process tanks with 2" process connection.
SEP-370	

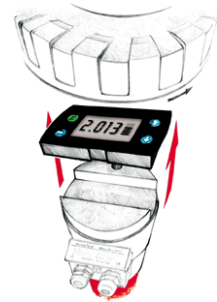
Ultrasonic Level Transmitters

EchoTREK STP/STM/STA-400 Series - 4 Wire.

Ultrasonic level transmitter.

With PP, PVDF or PTFE transducers.

NIVELCO



MODEL	DESCRIPTION	PRICE
4 Wire	EchoTREK compact ultrasonic level transmitter. Housing: Plastic. Protection: Housing, IP67. Sensor, IP68. (submersible). Transducer: Standard = Polypropylene, (PP). Flange material: Polypropylene, (PP). Ambient temp: -30~60°C Process temp: -30~90°C. Pressure: 0.3~3 bar (absolute). Power supply: -1: 85~255Vac. 50/60Hz. 6VA. -2: 24Vac/dc Outputs: 4~20mA, 600ohm, galv. isolated. relay, SPDT, 250Vac / 3amp, ac1.	
STP-490-2	Range 0.2m to 4m. 24Vac/dc Mount, 1.5" BSP. 6°. 80 kHz. 1x.*	\$1450.00
STP-480-2	Range 0.25m to 6m. 24Vac/dc Mount, 2" BSP. 5°. 80 kHz. 1x.*	\$1450.00
STP-480-2	Range 0.25m to 6m. 24Vac/dc Mount, 2" BSP. 5°. 80 kHz. 1x.*	\$1450.00
STP-470-2	Range 0.35m to 8m. 24Vac/dc Mount, 2" BSP. 7°. 50 kHz. 2x.*	\$1680.00
* Penetration through fumes / vapour, foam. 1x = weak...4x = excellent.		
STM-462-1	Transducer material of Stainless steel. Process temp: -30~100°C. (C.I.P. 120°C for 2 hours max) Pressure: 0.9~1.1 bar (absolute). Range 0.4m to 7m.	POA
STM-444-1	Flange, DN80 flush 5°. 60 kHz.	POA
STM-425-1	Range 0.55m to 12m. Flange, DN125 flush 5°. 40 kHz.	POA
	Range 0.65m to 15m. Flange, DN150 flush 7°. 20 kHz.	POA
Options		Add price
	SAP-200 programming module/indicator, custom made. Integral, plug-in LCD 6 digit display, bargraph and icons. Scalable in engineering units.	\$168.00
	Power supply of: 10.5~40Vdc, 3.6W. 10.5~28Vac, 50/60Hz. 4VA.	N/C
	Housing material of powder coated aluminium (= STA).	\$55.00
	Transducer material of Kynar, (PVDF) .	\$105.00
	Transducer material of Teflon, (PTFE) . c/w 2" TriClover.	\$380.00
	Larger flanges.	POA
	Mounting bracket 200mm.	\$155.00
	HART Communication.	POA

- ◆ Practically any liquid.
- ◆ Reliable measurement even under extreme conditions with vapours, fumes, stirrers, foam on chemicals.
- ◆ 32 point curve linearisation.
- ◆ Volume calculation with pre-programmed tank shapes.
- ◆ Open channel flow measurement with pre-programmed flumes and weirs.
- ◆ Capability to suppress interference from two fixed targets.
- ◆ 4~20mA continuous output plus a fully programmable relay output.

EchoTREK STP-400 Series.



Type	Main application field
STP-490	Small tanks where dead band is critical.
STP-480	Small process tanks with 2" process connection.
STP-470	

Ultrasonic Level Transmitters

EasyTREK SPA-500 Series Ultrasonic level transmitter. For liquids.



SPA-590-4

Features:

- ◆ 2-wire integrated transmitter.
- ◆ Non-contact level measurement.
- ◆ Can be powered from 12 V battery.
- ◆ Max. 18 m (59 ft) measuring range.
- ◆ Narrow (5°) beam angle.
- ◆ Temperature compensated.
- ◆ HART® 7.
- ◆ Handheld compatibility.
- ◆ IP68 protection.

Applications

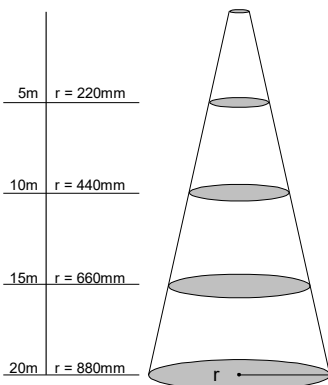
- ◆ For liquid level measurement, open channel flow metering.
- ◆ Wide application area from wastewater to aggressive chemicals
- ◆ Level measurement in basins, wells, sumps, lift-stations.
- ◆ Suitable for level measurement of hydrocarbons, acids, water based media.

MODEL	DESCRIPTION	PRICE
	Transducer: Polypropylene. Protection: IP68. Ambient temp: -30~80°C. Process temp: -30~90°C. Pressure: 0.5~3 bar (absolute). Beam angle: 6°. Process Connection: BSP Thread Power supply: 2-wire: 12~36Vdc. Outputs: 4~20mA + HART® 7. Communication: HART® 7 protocol. (HART Only). Accuracy: ±0.1% of measured distance + 0.05% of range.	
SPA-590-4	Ultrasonic transmitter. 0.18m to 5m.	\$1055.00
Options		Add price
SAA-101	Fast connecting gland for pipe mounting devices with 1".	\$28.00
SAT-304	HART/USB Modem.	\$420.00



Note: Other ranges and cable lengths are available on request.

Ultrasonic notes



Radii corresponding to 5° beam angle.

Temperature.
 All Nivelco ultrasonic devices have built in temperature compensation over the entire measuring range.

Pressure.
 Because of the physical characteristics of ultrasound, ultrasonic measurement is limited in vacuum and high pressure applications.

Sonic Cone.
 Most of Nivelco's transducers have a 5°~7° total beam angle at -3dB, ensuring a reliable measurement in narrow silos with uneven side walls as well as in process bins with various protruding objects. Furthermore, as a result of the narrow beam angle, the emitted ultrasonic signal ensures outstanding focusing and good penetration through dust, gases, vapour and foam.

Transducer Material.*
 Nivelco offer a wide range of transducer materials:
 Polypropylene (PP): Resists most caustics, acids and bases.
 Kynar (PVDF): Resists acids and most solvents.
 Teflon (PTFE): Resists acids and most solvents. Accepted in hygienic applications.
 Stainless steel (316): Ultimate resistance against solvents. Accepted in hygienic applications. Withstands CIP cleaning up to 120°C.

Contact Intech for more info.

Liquid Level Switches

MODEL	PART No	DESCRIPTION	PRICE
4100	24221	Side mounted level switch. S.G. 0.8 Temperature: -34~150°C. Pressure: 62 bar max. Switch: 20VA. SPDT. Mounting: 1" NPT. Stem: Brass. Float: 316 SS. 2" Spherical.	\$460.00
4100	24227	Side mounted level switch. S.G. 0.7 Temperature: -34~150°C. Pressure: 69 bar max. Switch: 20VA. SPDT. Mounting: 1" NPT. Stem: Brass. Float: 316 SS. 1" Cylindrical.	\$460.00
4400	24237	Side mounted level switch. S.G. 0.7 Temperature: -40~107°C. Pressure: 10 bar max. Switch: 20VA. SPST. Mounting: 1/2" NPT. Stem: Polysulfone. Float: Polysulfone. 11/16" Cylindrical.	\$78.00
4400	24238	Side mounted level switch. S.G. 0.7 Temperature: -40~107°C. Pressure: 10 bar max. Switch: 20VA. SPST. Mounting: 1/2" bulkhead with nut. Stem: Polysulfone. Float: Polysulfone. 11/16" Cylindrical.	\$92.00
4200	24251	Top mounted level switch. S.G. 0.65 Temperature: -40~107°C. Pressure: 5 bar max. Switch: 20VA. SPST. Mounting: 1/8" NPT. Stem: Polysulfone. Float: Polysulfone. 1" Cylindrical.	\$78.00
4200	41003	Top mounted level switch. S.G. 0.7 Temperature: -40~150°C. Pressure: 27 bar max. Switch: 20VA. SPST. Mounting: 1/8" NPT. Stem: 316 SS. Float: 316 SS. 1" Cylindrical.	\$170.00
4700	41302	Top mounted level switch. S.G. 0.65 Temperature: -40~150°C. Pressure: 50 bar max. Switch: 100VA. SPST. Mounting: 1/4" NPT. Stem: 316 SS. Float: 316 SS. 54mm Spherical.	\$208.00



4100-24221



4100-24227



4400-24237



4400-24238
Bulkhead



4200-24251



4200-41003



4700-41302

Specific gravity of liquids:	
Petrol	0.700
Kerosene	0.800
Olive oil	0.920
Water	1.000
Sea water	1.025
Milk	1.030
Sulfuric acid	1.140
Glycerine	1.260
Mercury	13.595

Liquid Flow Switches

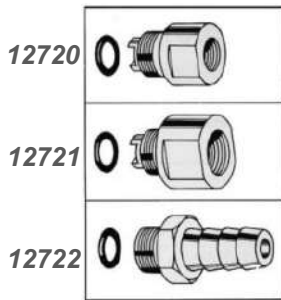


2400 2500

For pipe lines from 1" to 3".
For pipe sizes larger than 3", actuation of the 5" paddle is a velocity of approximately 0.15m/sec (0.5ft/sec).



2100



12720

12721

12722



1100

MODEL	PART No	DESCRIPTION	PRICE
2500	19652 Polysulfone	Vertically mounted flow switch. Temperature: -28~107°C. Pressure: 10 bar max. Switch: 20VA. SPDT. Mounting: 1" NPT. Housing: Polysulfone. Paddle: Polysulfone. Shuttle: Polysulfone. Spring: 316 SS.	\$266.00
2400	19650 Brass	Vertically mounted flow switch. Temperature: -34~150°C. Pressure: 58 bar max. Switch: 20VA. SPDT. Mounting: 1" NPT. Housing: Brass. Paddle: 316 SS. Shuttle: 316 SS. Spring: 316 SS.	\$465.00
2400	19651 316 SS	Vertically mounted flow switch. Specifications as above (p/n 19650) except: Housing: 316 SS.	\$678.00
2100	12686 0.37 l/m 12687 0.94 l/m 12688 1.89 l/m 12689 2.83 l/m 12690 3.78 l/m 12691 5.67 l/m	In line flow switch. Temperature: -28~107°C. Pressure: 17 bar @ 20°C max. 103 bar @ 20°C burst strength. Flow setting: Refer to <u>Part No.</u> column. Switch: 20VA. SPST. N/O. 2 wire. Ports: 9/16" -18 UNF. Housing: Polysulfone. Piston: Polysulfone. Spring: 316 SS. O ring: Viton A.	\$149.00
		Adapter fittings for the 2100: To convert the 9/16" -18 UNF-2B threaded port to other sizes. All fittings are made of polysulfone and are supplied with a Viton A o-ring seal assembled in place.	
	12720	1/8" NPT each.....	\$13.00
	12721	1/4" NPT each.....	\$15.00
	12722	1/2" barbed, for 1/2" ID hose. each.....	\$15.00
1100	18100 1.89 l/m 18101 3.78 l/m 18102 7.56 l/m 18103 11.3 l/m 18104 15.1 l/m 18105 18.9 l/m 18106 22.7 l/m 18107 30.3 l/m	In line flow switch. Fixed set point. Bronze, 3/4" NPT. Temperature: -28~150°C. Pressure: 27 bar @ 38°C max. 82 bar @ 38°C burst strength. Flow setting: Refer to <u>Part No.</u> column. Switch: 20VA. SPDT. Size: 3/4" NPT. Housing: Bronze. Shuttle: Teflon. Spring: 316 SS. O ring: Viton A.	\$534.00
		Bronze units are available in pipe sizes: 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3". 316 SS units are available in pipe sizes: 1", 1 1/2", 2".	POA

Liquid Flow Switches

MODEL	PART No	DESCRIPTION	PRICE
1200	18271 2.83 to 22.7 l/m	In line flow switch. Adjustable set point. Temperature: -28~150°C. Pressure: 27 bar @ 38°C max. 82 bar @ 38°C burst strength. Flow setting: Refer to <u>Part No.</u> column for setting range. Switch: 20VA. SPDT. Size: 1" NPT. Housing: Bronze. Shuttle: Teflon. Spring: 316 SS. O ring: Viton A.	\$605.00
	18272 7.57 to 30.3 l/m		
2000	12666 1.89 l/m	In line flow switch. Fixed set point. Temperature: -28~120°C. Pressure: 103 bar max. Flow setting: Refer to <u>Part No.</u> column. Switch: 50VA. SPST. N/O. Size: 1/2" NPT. Housing: Brass. Piston: Brass. Spring: 316 SS.	\$260.00
	12667 3.78 l/m		
	12668 5.67 l/m		
	12669 7.57 l/m		
	12670 9.46 l/m		
	12671 11.3 l/m		



1200



Level and Flow Switches



MODEL	DESCRIPTION	PRICE
SE380CCR	Side mounted rotary level switch. Temperature: -20~70°C. Rotary speed: 1 RPM. Power supply: 240Vac, 50/60 Hz. Switch: 3 amp, 250Vac. SPDT. Mounting: 3/4" BSP. Housing: IP65 / PC. Cable length: 3m. Paddle Type: Cross or Scimitar (specify).	\$395.00
SE380ECR	As above, with 24Vdc power supply.	\$395.00
SE111C	Side mounted rotary level switch. Temperature: -10~70°C. Rotary speed: 1 RPM. Power supply: 240Vac. Switch: 5 amp, 250Vac. SPDT. Mounting: 1" BSP or SS flange 155mmØ 4 hole or 203mmØ 6 hole Housing: IP65. Paddle: 304 SS.	\$650.00
SE111E	As above, with 24Vdc power supply.	\$675.00



MODEL	DESCRIPTION	PRICE
FF80EFM	Side mounted magnetic level switch. Anti -Acid/Alkaline. Flange mount. Temperature: -20~80°C. Switch: 1A/ 30W. SPDT reed switch. Magnetic actuation. Polypropylene flange. Housing: IP65. Polypropylene. Float: Polypropylene, SG 0.6. 44mmØ cylindrical.	\$650.00
FF81EFM	Side mounted magnetic level switch. Anti -Acid/Alkaline. Bulkhead mount. Temperature: -20~80°C. Switch: 1A/ 30W. SPDT reed switch. Magnetic actuation. M20 bulkhead with nut. Cable: 3m 3 core PVC. Float: Polypropylene, SG 0.6. 44mmØ cylindrical.	\$535.00



MODEL	DESCRIPTION	PRICE
	Side mounted float level switch. Pressure: 15 bar. Switch: 50VA. 250Vac. SPDT. Mounting: 1.5" BSPT. Housing: IP65. Aluminium. Float: 304 SS, SG 0.65. 41mmØ cylindrical.	
FF10CEQ	Standard temperature: -20~100°C. Micro Switch: rating 5A/250Vac.	\$580.00
FF20CEQ	High temperature: -40~200°C. Reed Switch: rating 1A/60w 220Vac.	\$725.00



MODEL	DESCRIPTION	PRICE
SF1800	Vertically mounted flow switch. Temperature: -30~150°C. Pressure: 24 bar (355 psi g) Switch: 60W/230Vac. SPDT. Mounting: 1" BSP. Housing: IP65. Aluminium. Paddle: 304 SS. Other wetted parts: teflon.	\$410.00

Level Switches

MODEL	DESCRIPTION	PRICE
FCV35GD FCV33FDE	Top mounted level switch. Material: Polysulfone, SG 0.75. Material: PVDF, SG 0.85. Temperature: -20~80°C. Pressure: 4 bar. Switch: 50W, 240Vac / 200Vdc. SPST reed switch. Mount: 1/8" BSP. Polysulfone. Float: 25mmØ cylindrical.	\$52.00 \$52.00
FCH31PD	Side mounted level switch. Temperature: -20~80°C. Pressure: 4 Bar. Switch: 50W, 240Vac / 200Vdc. SPST, N/O, reversible. Mount: 1/2" NPT. Polypropylene. Float: Polypropylene, SG 0.65. 17.5mmØ cylindrical.	\$48.00
FCH51PD	Side mounted level switch. Temperature: -20~80°C. Pressure: 4 Bar. Switch: 50W, 240Vac / 200Vdc. SPST, N/O, reversible. Mount: 1/2" NPT. Polypropylene. Thread front & back of hex. Float: Polypropylene, SG 0.55. 17.5mmØ cylindrical.	\$52.00
FCH23FDO	Side mounted level switch. Temperature: -20~60°C. Pressure: 4 Bar. Switch: 50W, 240Vac / 200Vdc. SPST, N/O, reversible. Mount: 16mm Bulkhead with nut. PVDF. Float: PVDF, SG 0.65. 17.5mmØ cylindrical.	\$52.00
FD3061DE	Top mounted level switch. Temperature: -10~120°C. Pressure: 10 bar. Switch: 50W, 240Vac / 200Vdc. SPST, N/O, reversible. Mount: 1/8" BSP. 316 SS. Float: 316 SS, SG 0.7. 28mmØ cylindrical.	\$78.00
FD3061DA05FH FD3061DB05FH	Top mounted level switch. High temp. Temperature: -10~150°C. Pressure: 10 bar. Switch: 50W, 240Vac / 200Vdc. Mount: 1/8" BSP. 316 SS. Lead: Silicon, 0.5m. Float: 316 SS, SG 0.7. 28mmØ cylindrical. Switch: SPST, N/O only. Switch: SPST, N/C only.	\$92.00 \$92.00
FD3062DE	Side mounted level switch. Temperature: -10~120°C. Pressure: 10 bar. Switch: 50W, 240Vac / 200Vdc. SPST, N/O, reversible. Mount: 1/8" BSP. 316 SS. Float: 316 SS, SG 0.7. 28mmØ cylindrical.	\$105.00
FD4061DE	Top mounted level switch. Temperature: -10~120°C. Pressure: 35 bar. Switch: 50W, 240Vac / 200Vdc. SPST, N/O, reversible. Mount: 3/8" BSP. 316 SS. Float: 316 SS, SG 0.7. 41mmØ spherical.	\$140.00



FCV35GD



FCH31PD



FCH51PD



FCH23FDO



FD3061DE /
FD3061DA05FH /
FD3061DB05FH



FD3062DE



FD4061DE

Thermal Dispersion Flow Switch

The Thermal Flow Switch Monitor SP200 is based on the principle of thermal dispersion. A typical configuration uses two Temperature Detectors set within the tip of the sensor.

One Temperature Detector is heated a few degrees above the other one. As the process medium flows over the tip of the sensor it disperses some of the heat from the heated Temperature Detector. The delta temperature is a function of flow velocity and converted into electronic signal. The open collector (or relay), changes state once the set point has been reached.

Features:

- ◆ Detection of flow velocities in pipes.
- ◆ LED functions Display.
- ◆ Relay output, NC.
(Open collector available on request).
- ◆ Measuring Range: (Speed)
water: 1~150cm/s.
oil: 3~300cm/s.



MODEL	DESCRIPTION	PRICE
	Thermal Dispersion flow switch c/w cable. Measuring range: Water: 1~150cm/s (10~1500mm/s). Oil: 3~300cm/s (30~3000mm/s). Temperature: -20~80°C. Pressure: 100 bar max. LED indication: Provides visual indication of flow. Output: PNP. (NPN/Relay available on request). Response time: Approx. 10 seconds. Process connection: BSP½" (other sizes available on request). Probe and Housing: S/S. IP67. Power supply: 19~30Vdc. Power consumption: 50mA max. Plug cable length: 2 metres.	
SP200	Compact model. Probe length: 30mm from case.	\$905.00
SP201	Extension model. Probe length: 50mm and 75mm from case (specify).	\$1240.00
SP211	Relay output model, contact: 5A/30Vdc, (NC). Probe length: 70mm from case (other sizes available on request).	\$1055.00
SP220	Economy Model. Plastic housing. Also available with 80mm probe length.	\$480.00

Optical Level Switch

Optical Level Switch.

Economic—Reliable—Level control for food products—Grease/Oil—Waste Water—Liquor—Hydraulics.



MODEL	DESCRIPTION	PRICE
SD20GAR	Material: Polysulfone. IP68. Temperature: Operating: -10~125°C. Ambient: -10~80°C. Output: 10~28Vdc. 100mA. Load Current: Max. Load 100mA 3/8" BSP. Pressure: Max. 10 Bar. Cable: 3 core, 2m PVC 22 AWG.	
-N0	NPN open collector, N/C.	\$90.00
-N1	NPN open collector, N/O.	\$90.00
-P0	PNP open collector, N/C.	\$90.00
-P1	PNP open collector, N/O.	\$90.00

Level Instruments

Roto-Bin-Dicator® PRO

Dry bulk level control.

Specifications:

- ◆ Housing finish: Powder coated aluminium.
- ◆ Process fitting: Aluminium frame neck, NPT1-1/4"
- ◆ Base unit: M20 x 1.5" conduit entry with ordinary location approval.
- ◆ Ambient temperature: -40~70°C.
- ◆ Process temperature: -29~150°C
- ◆ Output relay: 8A DPDT.

Features:

- ◆ Self-diagnostics motor/supply with LED flash codes.
- ◆ Universal power: (±10%) 85~264Vac 50/60Hz, 22~52Vdc.
- ◆ DIP switches selectable:
 - Adjustable time delay for alarm.
 - Motor pause (option setting).
 - Sensitivity settings ±30% for varying material densities.



BINDERATOR

PRO-AG-T5

See Common Parts below.

MODEL	DESCRIPTION	PRICE
PRO-AG-T5	Roto-Bin-Dicator® PRO Top Mounting c/w 5" paddle, plate & flex shaft.	\$1583.00
PRO-AG-T7	Roto-Bin-Dicator® PRO Top Mounting c/w 7" paddle, plate & flex shaft.	\$1593.00
PRO-AG-S5	Roto-Bin-Dicator® PRO Side Mounting c/w 5" paddle, plate & flex shaft.	\$1550.00
PRO-AG-S7	Roto-Bin-Dicator® PRO Side Mounting c/w 7" paddle, plate & flex shaft.	\$1565.00
PRO-AGMAX1	Roto-Bin-Dicator® PRO Power Pack only.	\$1265.00

Roto-Bin-Dicator®

Specifications

- ◆ Mounting plate: Wall mount. Pipe mount optional.
- ◆ Temperature: -10~70°C.
- ◆ Output relay: 10amp SPDT.
- ◆ Power supply: 230Vac (RB Model), 24Vdc (RD model), 24Vac (RF model)
- ◆ Rating: NEMA 4X (RB, RD Models)
- ◆ Flexible neoprene shaft drive.

Features:

- ◆ Quick installation. No calibration required.
- ◆ Long-lasting, sealed motor keeps maintenance and replacement costs low.
- ◆ Extensive paddle options to adapt to a variety of applications.
- ◆ Extended shaft fittings available.



RB-HM-T5

MODEL	DESCRIPTION	PRICE
RB-HM-T5	Roto-Bin-Dicator® Top Mounting c/w 5" paddle, plate & flex shaft.	\$1183.00
RB-HM-T7	Roto-Bin-Dicator® Top Mounting c/w 7" paddle, plate & flex shaft.	\$1193.00
RB-HM-S5	Roto-Bin-Dicator® Side Mounting c/w 5" paddle, plate & flex shaft.	\$1155.00
RB-HM-S7	Roto-Bin-Dicator® Side Mounting c/w 7" paddle, plate & flex shaft.	\$1165.00
RB-HM-AX1	Roto-Bin-Dicator® Power Pack only.	\$865.00
RD-HM-T5	Roto-Bin-Dicator® Top Mounting c/w 5" paddle, plate & flex shaft. 24Vdc	\$1183.00
RD-HM-T7	Roto-Bin-Dicator® Top Mounting c/w 7" paddle, plate & flex shaft. 24Vdc	\$1193.00
RD-HM-S5	Roto-Bin-Dicator® Side Mounting c/w 5" paddle, plate & flex shaft 24Vdc	\$1155.00
RD-HM-S7	Roto-Bin-Dicator® Side Mounting c/w 7" paddle, plate & flex shaft 24Vdc	\$1165.00
RD-HM-AX1	Roto-Bin-Dicator® Power Pack only, 24Vdc.	\$865.00

Mounting Plates		
H-19	Side Mounting plate, half coupling.	\$90.00
H-192	Top Mounting plate, full coupling	\$118.00
Shaft Couplings		
H-36	Neoprene 3" Flexible shaft.	\$105.00
H-38	Stainless Steel (Used with Extensions only).	\$56.00
H-361	Solid Shaft 3 "	\$108.00
Paddles		
H-370	4-Vane 304SS 1 1/2"x5" Diameter with pins.	\$95.00
H-371	4-Vane 304SS - 2" x 7" Diameter with pins.	\$105.00
H-372A	1-Vane; 1" x 2-7/8" with 30°Cut.	\$105.00
H-379	1-Vane; Insertable with pins.	\$140.00

Extensions also available (Stainless steel shaft with guard)

Other parts available on request. Please enquire.

Mini Roto-Bin-Dicator®

- ◆ *Level sensing of light granular solids in small bins and hoppers, i.e.: plastics, granular foods, sugar, cereals and seeds.*
- ◆ Designed to shut the motor off during the presence of materials.
- ◆ Adjustable sensitivity allowing the use in varying material density.

- ◆ LED indication is visible from 15m.
- ◆ Mounting: 3/4" NPT.
- ◆ Temperature: -40~93°C.
- ◆ Output relay: 10amp 250Vac.
- ◆ Paddle: Nylon (polysulfone).



MR-X-Y-1

Other parts available on request. Please enquire.

MODEL	DESCRIPTION	PRICE
MR-1-Y-1	Mini Roto-Bin-Dicator® Power Pack only 120Vac.	\$856.00
MR-2-Y-1	Mini Roto-Bin-Dicator® Power Pack only 240Vac.	\$856.00
MR-3-Y-1	Mini Roto-Bin-Dicator® Power Pack only 24Vdc.	\$1045.00
Parts		
LMR120003	Insertable paddle (banana shaped).	\$50.00
LMR120006	4 vane paddle, Nylon ®.	\$48.00



CEN-370

RTD Thermometers

Designed for the food and beverage industry, the Center 370 offers some exceptional value for money. This is the least expensive RTD unit.

- ◆ IP67 water proof housing.
- ◆ Class A Pt100 probe (included, cable length = 1.4m).
- ◆ Min / Max / Avg temperature function.
- ◆ Backlit LCD Display.
- ◆ Battery indication.
- ◆ Range: -100 to +300°C.
- ◆ Accuracy: ±0.1% of reading or ±0.4°C.
- ◆ Resolution: 0.1°C.
- ◆ Dimensions: 150 x 66 x 31mm. Weight: Approx. 175g.

MODEL	DESCRIPTION	PRICE
CEN-370	Hand-held RTD Thermometer c/w Pt100 probe.	\$250.00
Options		
TP-R01	120 x 3.3mm Spare Pt100 probe for Center 370. Spear Tip.	\$103.00
TP-R500	500 x 3mm, Spare Pt100 Probe, c/w handle and 1m of cable. Rounded tip.	\$236.00
Certificate	IANZ Calibration Certificate. 2 Points.	\$150.00

Note: We can also custom build an RTD probe to your specifications for use with the Center 370.

Precision RTD Thermometer



CEN-376

Common Specifications:

- ◆ Precision Pt100 probe (included, cable length = 1.4m).
- ◆ Min / Max temperature function.
- ◆ Backlit LCD Dual Display.
- ◆ Data hold function.
- ◆ Relative function.
- ◆ Battery indication.
- ◆ Range: -100 to +400°C.
- ◆ High Accuracy: ±0.05% of reading or ±0.1°C.
- ◆ Resolution: 0.01°C.
- ◆ Dimensions: 185 x 65 x 36mm. Weight: Approx. 360g.
- ◆ Auto power off.
- ◆ User Offset adjustable.
- ◆ Tilt stand.

MODEL	DESCRIPTION	PRICE
CEN-375	Hand-held Precision RTD Thermometer c/w Pt100 probe. 100 Manual recording data memory included on meter readout function.	\$495.00
CEN-376	Hand-held Data Logging Precision RTD Thermometer c/w Pt100 probe. Data logging: 16,000 records. Records Temperature, Time and Date of Measurement. Includes Windows software and USB download cable.	\$595.00
Spare Parts		
TP-R04	230mm x 4.8mm Spare Pt100 probe c/w handle and 1.4m of cable. Rounded Tip.	\$133.00

Note: We can also custom build an RTD probe to your specifications for use with the Center 375/376.

Digital Thermometers

Solar Panel Thermometer

Specifications:

Measuring range:	-50~200°C.	Features: ♦ Front flange mounting. ♦ Backup battery. ♦ Splash proof panel. ♦ Waterproof sensor.
Display accuracy:	±1 °C over full range.	
Display resolution:	0.1°	
Display reading update:	10 seconds.	
Working light intensity:	= > 100 lux.	
Display size:	34 (W) x 12 (H) mm.	
Digit size:	6 (W) x 10.5 (H) mm.	
Probe size:	5 ø x 32 mm.	
Sensor cord length:	1500 mm.	
Backup battery:	3 volts. Coin Type Size CR2032.	
Backup battery life:	About 2 years.	
Ambient temperature:	-10~50°C.	
Dimensions:	ø 75 (flange) ø 51.5 (body) X 22 (D) mm.	



YC-RT-352

MODEL	DESCRIPTION	PRICE
YC-RT-352	Solar Panel Thermometer.	\$45.00

Digital Stem Thermometer

Specifications:

Measurement Range:	-50 °C ~ 300 °C (-58 °F~572 °F)
Accuracy:	±1 °C (±1.8 °F)
Resolution:	±0.1°C/°F
Stainless Steel Tube:	dia. 4 mm x 145 mmL
LCD size:	26 x 11 mm
Weight:	43.2g
Battery:	1 x 1.5V "A76" size (LR44 or equivalent)



YC-ST-3001

MODEL	DESCRIPTION	PRICE
YC-ST-3001	Large LCD Display Digital Stem Thermometer	\$45.00

Thermocouple Thermometer

MODEL	DESCRIPTION	PRICE
YC-305	Digital thermometer. Type K one input. Complete with holster 3½ digit LCD display. Select, °F/°C. Select, 0.1°/1°. Data hold. Offset setting. Range: -50~1300°C. -58~1999°F.	\$140.00
YC-307	Digital thermometer. Type K two inputs. Specifications as above.	\$175.00
OPTION		
YC-H	Spare holster for the above displays.	\$12.00



YC-305

Note:
See probes available
on page 100 >>

Handheld Probes



Handheld probe assemblies. Stock probes. Others by request.			
CODE	DESCRIPTION		PRICE
Bead probe	Miniature plug and cable. Probe: Bead tip. Cable: 2m Teflon. Temp: min/max of probe:	Type K. 0~100°C.	\$32.00
HHR-01	Industrial food probe. Probe: 4.7 x 100mm Spear tip. 316 Stainless steel. Cable: 900mm PVC. Curly cord. Temp: min/max of probe:	Pt100. -30~260°C.	\$242.00
HHT-01	Industrial food probe. Probe: 4.7 x 100mm Spear tip. 316 Stainless steel. Cable: 900mm PVC. Curly cord. Temp: min/max of probe:	Type K. -30~400°C.	\$168.00
HHT-02	Insertion probe. Probe: 3.2 x 200mm. Stainless steel. Cable: 900mm PVC. Temp: min/max of probe:	Type K. -30~600°C.	\$55.00
HHT-03	Mini spear probe. Probe: 3.2 x 100mm. Stainless steel. Cable: 900mm PVC. Temp: min/max of probe:	Type K. -30~300°C.	\$43.00
HHT-04	Surface probe. Probe: Foil sensor. Fast response. Cable: 900mm PVC. Temp: min/max of probe:	Type K. 0~400°C	\$80.00

Digital Hygrometer



Features:

- ◆ Micro Processor Based.
- ◆ Display with Back-light.
- ◆ Dual display Temperature & Humidity.
- ◆ Wet bulb / Dry bulb / Dew point.
- ◆ Temperature Calculated.
- ◆ Memory Max / Min / Max-Min / Avg / Data Hold.
- ◆ Auto power off.
- ◆ Dimensions: 178 (H) x 65.5 (W) x 35 (D) mm.
- ◆ Battery 9Vdc.

Specifications:

Temperature range: -20~60°C.
 Resolution: 0.1°
 Accuracy: ±0.5°C 0°C to 45°C.
 ±1°C -20°C to 0°C, 45°C to 60°C.
 Relative Humidity range: 0% to 100% RH.
 Resolution: 0.1%
 Accuracy: ±2.5% @ 25°C, 10% to 90% RH.
 ±5% @ 25°C, 0% to 10% RH, 90% to 100% RH.
 Sensor response time for 90% of Total Range: 60sec typical.
 Sensor Hysteresis (excursion of 10% to 90% to 10% RH): ±1% RH typical.

MODEL	DESCRIPTION	PRICE
YC-321	Thermo Hygrometer with extension probe.	\$225.00
YC-322	Thermo Hygrometer.	\$210.00

I/P Transducers

MODEL	DESCRIPTION	PRICE
500-AC	Industrial current to pressure transducer. Output: 3~15 PSI. Input: 4~20mA. 180 ohms. Mount: Wall. Supply pressure: 100 psi, max. 20 psi, min. Note: Replaces GT2108ED.	\$748.00
500-AD	Industrial current to pressure transducer. Output: 3~27 PSI. Input: 4~20mA. 220 ohms. Mount: Wall. Supply pressure: 100 psi, max. 35 psi, min.	\$748.00
500-AE	Industrial current to pressure transducer. Output: 6~30 PSI. Input: 4~20mA. 220 ohms. Mount: Wall. Supply pressure: 100 psi, max. 35 psi, min.	\$748.00



500-AD

CONTROLAIR

Rotating Connectors

Mercury rotating electrical connectors

MODEL	DESCRIPTION	PRICE
205	Coaxial connector. 2 poles. 595 Lug cap..... \$12.00 592 Receptacle.. \$20.00 Current: 4 amps at 240Vac. RPM: 2000 max.	\$76.00
230	Modular connector. 2 poles. Boot kit..... \$28.00 Current: 30 amps at 240Vac. RPM: 1800 max.	\$165.00
305	Coaxial connector. 3 poles. 553 Lug cap..... \$21.00 593 Receptacle.. \$33.00 Current: 4 amps at 240Vac. RPM: 1800 max.	\$136.00
330	Modular connector. 3 poles. Current: 30 amps at 240Vac. RPM: 1200 max.	\$235.00
331	Modular connector. 3 poles. Current: 2 @ 4 amps at 240Vac. 1 @ 30 amps. RPM: 1800 max.	\$210.00
430	Modular connector. 4 poles. Boot kit..... \$40.00 Current: 2 @ 4 amps at 240Vac. 2 @ 30 amps. RPM: 1200 max.	\$388.00
50431	Plug Assembly for 430 (with wires).	\$28.00
50430	Plug Kit for 430 (No wires).	\$19.00
435	Modular connector. 4 poles. Boot kit..... \$41.00 Current: 30 amps at 500Vac. RPM: 300 max.	\$675.00
630	Modular connector. 6 poles. Boot kit..... \$35.00 Current: 2 @ 4 amps at 240Vac. 4 @ 30 amps. RPM: 300 max.	\$785.00
830	Modular connector. 8 poles. Boot kit..... \$38.00 Current: 2 @ 4 amps at 240Vac. 6 @ 30 amps. RPM: 200 max.	\$1180.00

Common Specifications.
Temperature range: Within 7~60°C
Voltage range: 0~500Vac/dc.
Mercury contact resistance: 1 milli-ohm max.



MERCOTAC



Stationary end. Plug body inside rubber boot.

Rotating end. Plug body fits inside rotating shaft.

50431 - Plug Assembly for 430

More models are available.
Contact Intech.

Flow Transducers

TRIMEC DUALPULSE

Insertion flow transducer.



IF500

Wide application

Typical industry applications include:
 Hot and chilled water.
 Fire system.
 Thermal energy monitoring.
 Water treatment and reticulation.
 Chlorination.
 Chemical injection systems.
 Boiler feed water.
 Steam condensate.
 Batching systems.



IF600

Stainless steel insertion flow transducer with two independent pulse outputs.

Velocity range: 0.3~10 metres/second.
 Protection: IP68 Submersible.
 Pressure: 80 bar (1500 PSI) max.
 Temperature: Standard: -40~100°C (3 options available up to 150°C).
 Cable length: 3 metres of screened 5 core as standard.
 Material:

Body: 316L SS.
 Rotor shaft: 316L SS.
 O-ring: Viton.
 Rotor: PVDF / 316 Stainless Steel 120°C Max. Standard
 PEEK / Tungsten Carbide 150°C Max. Optional.

Outputs standard: Transmission to 1000m max.
 Output 1: Voltage pulse self generated, 1.5V x 10µ/sec.
 (2 wire) 220~240 Hz max.
 Output 2: Open collector NPN, 5~24Vdc square wave.
 (3 wire) 220~240 Hz max.

MODEL	DESCRIPTION	PRICE
IF500 (was DP490)	Stainless steel insertion flow transducer . Pipe sizes: 40~900mm. (1.5~36") Process connection: 1.5" BSPT (G1.5) or NPT. Flow range: 0.25~6300 litres/second. (4~99600 US gall/min)	\$1510.00

OPTIONS	Add price
PEEK Rotor / Tungsten Carbide 150°C Max.	\$45.00
High temperature: 125°C and 150°C	POA
Output type: Reed switch output only. (For use with an IS barrier in hazardous areas). Non magnetic rotor. NPN output. (For liquids with ferrous impurities, needs power).	N/C \$35.00

MODEL	DESCRIPTION	PRICE
IF600 (was DP525)	Stainless steel insertion flow transducer. Suitable for hot tap installations. Pipe sizes: 50~2500mm. (2~100"). Process connection: 2" BSPT (G2) or NPT. Flow range: 0.4~49000 litres/second. (6~780000 US gall/min).	\$1740.00

OPTIONS	Add price
PEEK Rotor / Tungsten Carbide 150°C Max.	\$45.00
High temperature: 125°C and 150°C	POA
Output type: Reed switch output only. (For use with an IS barrier in hazardous areas). Non magnetic rotor. NPN output. (For liquids with ferrous impurities, needs power).	N/C \$35.00

Integral Options available - See RT14 and RT40 on page 105.

Construction

A durable peek rotor with a graphite-PTFE impregnated peek bearing rotates around a 3mm diameter 316SS shaft to promote longevity. The body is all 316L stainless steel.

The unique metering head and aerofoil shaped rotor is designed to extend the linear measuring range to cover flow velocities from 0.2~10m/sec.

Batch Controller

Contrec 114D - Field Mounting Batch Controller

The Model 114D Batch Controller is designed for flow applications where the precise control of batch quantities is required. Batch Total, Accumulated Total and Preset values can all be displayed on the large LCD display.

The 114D has an input conditioning circuit which will accept pulse or frequency flow signals generated by turbine, positive displacement, paddlewheel or other flowmeters.

Configurable link positions enable the input circuit to be configured for the different signal types. DC powered with battery backup.

The 114D will operate from an external power source between 9 and 28 Volts and draws no more than 4mA.



MODEL	DESCRIPTION	PRICE
114D	DC Powered Batch Controller. Input signal: Frequency Accuracy: 0.05% Rating: IP67 Power Supply: 9~28Vdc Cable holes in Enclosure: 3 Alarms (Open Collector): Two Stage Batch	\$1220.00
Options:		
0	Wall Mounting (no gland holes)	N/C
1	Panel Mounting Brackets (pair)	\$192.00
2	Wall Mounting (Standard Glands)	N/C
6	Pipe Mount Adapter	\$68.00
R	Remote Run/Stop	\$164.00
A	Anodised Aluminium Enclosure (Aluminium not available as panel mount).	\$252.00

Features

- ◆ Displays Batch Total, Accumulated Total and Preset
- ◆ One or two stage valve control
- ◆ Watertight to IP67 (Nema 4X)
- ◆ Wall or Pipe, Panel mounting
- ◆ Fully programmable
- ◆ CE Compliant

Other models within the Contrec 100 Series:

103D: Field Mounted Rate Totaliser - DC Powered	102A: Flow Rate Totaliser
104D: Field Mounting Rate Totaliser - Loop Powered	120A: Level Monitor
102D: Rate Totaliser	150A: 150 Process Indicator

Please contact us for more information.

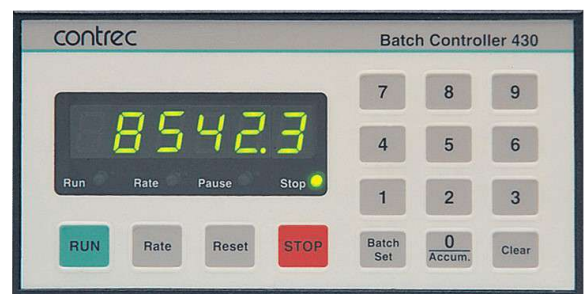
Contrec 430D - Panel Mount with Numeric Keypad

The 430D Batch Controller is suited to applications where precise measurement and control of variable batch quantities is required.

The instrument is extremely flexible and easy to operate. Batches can be started, paused, stopped and reset via four operational keys and batch quantities and calibration parameters are entered via a 12 key numeric keypad.

Batch Total, Flow Rate, Accumulated Total and Preset Value can all be displayed in engineering units on the green LED display.

The 430D will accept most frequency and pulse signals, including mV outputs from turbine flowmeters, and two-wire proximity switch outputs.



Features

- ◆ Accepts pulse and frequency flow signals
- ◆ Scaled pulse output
- ◆ Overrun compensation
- ◆ One or two stage valve control
- ◆ Optional RS232/422/485 interfaces for computers and printers
- ◆ Remote start/stop
- ◆ No-signal alarm
- ◆ Ticket printing with time and date
- ◆ Displays batch total, preset quantity, flow rate and accumulated total.

MODEL	DESCRIPTION	PRICE
430D	Frequency Input, Numeric Keyboard Batch Controller. Display: 10.2mm high 6 digit green LED. For Panel Mounting (Field Mounting also available on request). Pulse input condition cards & Relay outputs. Power Supply: 220/240Vac Dimensions: W: 144mm x H: 72mm x D: 178mm Cutout: W: 139mm x H: 67mm	\$3550.00

Positive Displacement Flowmeters

The TF Series range of positive displacement flowmeters offer a high level of accuracy & repeatability. These precision meters are used for flow rate measurement in flow monitoring and control applications and for totalising in dispensing and batching. TF Series meters are suitable for use with a wide range of clean liquids including viscous lubricants, chemicals, food bases and non-conductive low viscosity solvents either pumped or gravity fed.

Meter selection:

Meters are selected based on flow range, pressure, temperature, material compatibility and functionality.

Aluminium meters are ideal for petroleum products including oils and grease, fuels and fuel oils.

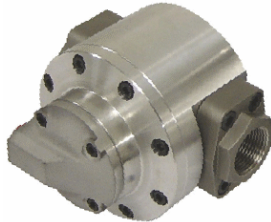
Stainless steel meters are suited for chemicals, water based products and the food, cosmetic and pharmaceutical industries.

TF Series meters are available as blind meters with pulse output or with integral or remote totalisers, flow rate displays or preset batch controllers. These instruments provide a local LCD display, monitoring and control outputs including 4~20mA, scaled pulse, flow alarms outputs or batch control.

Pulse meters outputs can be interfaced to most electronic displays or instrumentation. The reed switch is used when external power is not available and can be used in intrinsically safe loops. The output from the hall sensor is an NPN open collector providing high speed solid state pulses ideal for precise dispensing and batch control.



Small



Medium



Large

Common Features:

- ◆ High accuracy & repeatability, direct reading flowmeter.
- ◆ No requirement for flow conditioning (straight pipe runs etc).
- ◆ Simple to install, easy to service (low number of parts).
- ◆ Stainless steel or aluminium models.
- ◆ Measures high & low viscosity liquids.
- ◆ Measures conductive & non-conductive clean liquids.
- ◆ Available with a variety of outputs and functions.
- ◆ Intrinsically safe & explosion proof models available.
- ◆ Quadrature pulse output option & bi-directional flow.

TRIMEC

TF Series Oval Pulse Meters.

Positive Displacement Flowmeters.

Operating temperature:	-20~120°C.
Repeatability:	typically ±0.03%.
Protection:	IP66/67 (NEMA4X), optional Exd IIB T6 or I.S.
Reed switch output:	30Vdc x 200mA max.
Hall effect output:	3 wire open collector, 5~24Vdc max., 20mA max.
Control outputs:	two 1A NPN open collectors, 24Vdc max. two SPDT 5A relays (<i>with ac & DIN powered versions</i>)
Electrical connection:	M20 x 1.5mm or ½" NPT female threaded .

MODEL	DESCRIPTION	PRICE
TF006	<p>TF Series - Small Capacity Flowmeters. Accuracy @ 3cp: ±1%. Max pressure: Aluminium = 15 bar. 316SS = 34 bar. Recommended filtering: 75 micron minimum. Flow range: 2~100 litres/hr. Nominal size: 6mm. Output pulse resolution:</p> <p>Reed switch: 1050 pulses/litre. Hall effect: 1050 pulses/litre.</p>	\$1575.00 \$2100.00
TF006A TF006S	<p>Body: Aluminium ¼" BSP. Body: 316 stainless steel ¼" BSP.</p>	
TF008	<p>Flow range: 15~550 litres/hr. Nominal size: 8mm. Output pulse resolution: nominal. Reed switch: 355 pulses/litre. Hall effect: 710 pulses/litre.</p>	\$1290.00 \$1850.00
TF008A TF008S	<p>Body: Aluminium 3/8" BSP. Body: 316 stainless steel 3/8" BSP.</p>	
Small Option	High pressure 316 stainless steel. Max press. = 400bar	POA
TF015A	<p>TF Series - Medium Capacity Flowmeters. Accuracy @ 3cp: ±0.5%. Recommended filtering: 250 micron minimum. Flow range: 10~150 litres/min. Nominal size: 25mm. Output pulse resolution: nominal. Reed switch: 27 pulses/litre. Hall effect: 107 pulses/litre. Quadrature Hall option: 54 pulses/litre quad.</p>	\$1796.00 \$2000.00 \$4100.00
TF025A	<p>Body: Aluminium 1" BSP.</p>	
TF025S	<p>Body: 316 stainless steel 1" BSP. Max pressure: 100 bar.</p>	
TF80HA	<p>TF Series - Large Capacity Flowmeters. Accuracy @ 3cp: ±0.5%. Body: Aluminium. Recommended filtering: 350 micron minimum. Flow range: 50~1000 litres/min 3" BSP. Max pressure: 12 bar. Nominal size: 80mm. Output pulse resolution:</p> <p>Reed switch: 1.55 pulses/litre. Hall effect: 6 pulses/litre. Quadrature Hall option: 3 pulses/litre quad.</p>	POA
TF100A	<p>Flow range: 75~1500 litres/min 4" BSP. Max pressure: 10 bar. Nominal size: 100mm. Output pulse resolution: nominal. Reed switch: 1.1 pulses/litre. Hall effect: 4.4 pulses/litre. Quadrature Hall option: 2.2 pulses/litre quad.</p>	POA
ALL Options	Optional functions and/or outputs (with RT instruments).	POA

Note: Other models/ranges available include **TF004, TF015, TF040, TF050.**

Flow Rate Totaliser

TRIMEC RT14 SERIES

Flow Rate Totaliser

The RT14 Rate Totaliser is the perfect product when a local display is required with the ability to interface with external control and monitoring equipment (PLC, SCADA, DCS).

Features:

LCD Display	8 digit alpha-numeric LCD display with 12 mm characters with backlight*
Instantaneous Flow Rate	8 digit to 3 decimal points
Engineering Units Displayed	Liters, Gallons, Cubic Meters, Pounds, Kilograms or Nil
Input Types	Reed, NPN/PNP, Variable Reluctance (Turbine flowmeters), Weigand Sensors (voltage pulse)
Input Frequency	1.2 kHz (NPN/PNP), 2 kHz (Coil inputs), 120 kHz (Reed)
Input Scaling Range	0.0001 ~ 9999999.9999 with 4 floating points
Linearisation	10 point correction
Pulse Outputs	One selectable digital output for scaled pulse, unscaled pulse, high, low or high/low alarms
Operating Temperature	-30°C~80°C
Power Sources	AA 3.6V Lithium Thionyl Chloride Battery, external volt age option (12 – 30V (dc)
Enclosures	High impact glass reinforced Nylon (PA6) with a Polycarbonate lens, Nitrile O-Ring seals and Polyurethane gaskets, providing an IP rating of IP66/67^
Mounting	Meter & stem mount, wall, pipe or panel mount



MODEL	DESCRIPTION	PRICE
RT141D0FM	Flow Rate Totaliser, M20 x1.5mm, Digital Input Type, Universal Mount (Field or Panel)	\$1850.00
RT141D0MM	Flow Rate Totaliser, M20 x1.5mm, Digital Input Type, Integral Meter Mount.	\$1850.00
Option		
-IS	Intrinsically safe - IECEx & ATEX approved.	POA

TRIMEC RT40 SERIES

Flow Rate Totaliser

Trimec Series LCD display RT40 battery powered flow rate totaliser is specifically designed for computing & displaying flow rates & totals from flow meters with pulse, sine wave or frequency outputs.

The instrument displays resettable (batch) total, cumulative total and instantaneous flow rate in engineering units as programmed by the user.

Features /Benefits

- ◆ Battery or external powered, 6 digit large LCD total & 8 digit cumulative totaliser, 5 digit rate display
- ◆ Robust IP66/67~NEMA 4X Aluminium field & panel mountable housing
- ◆ LCD Backlighting standard
- ◆ Scalable universal pulse or frequency inputs
- ◆ Scaled pulse output
- ◆ PIN protected programming
- ◆ Simple flow chart touch key programming
- ◆ Reverse polarity protection
- ◆ Long battery life
- ◆ Heavy duty fascia protector shield
- ◆ Relay board with SPDT outputs
- ◆ Flowmeter & pipe mount kits



MODEL	DESCRIPTION	PRICE
RT406D0FM	Flow rate totaliser with backlit large digit LCD. Electrical Access: M20 x 1.5mm female threaded conduit entry ports (sealed ports remain IP66/67 when not used) Pulse/frequency input. Power Supply: Self powered (battery) or regulated 8~24Vdc. Universal Mount (field or panel) GRN Housing.	\$1010.00
RT401D0FA	As above with Aluminium housing	\$1350.00

Positive Displacement Flowmeter

TRIMEC MULTIPULSE Positive displacement flowmeter.



- ◆ Metered liquids range from non conductive low viscosity solvents through to extremely viscous lubricants, chemicals and food bases.
- ◆ No stagnate chambers to harbour contaminants.
- ◆ No restrictions on mounting orientation and the flowmeter may be operated under vacuum flow, pumped flow or gravity flow conditions.
- ◆ Particularly suited to batching and dispensing duties.
- ◆ Meter performance is independent of flow profile eliminating the need for straight pipe runs.
- ◆ Multipulse flowmeter utilise the oscillating piston design principle. The only moving part.
- ◆ Intrinsically Safe = Reed switch output (without Hall device fitted) + approved intrinsically safe barrier.



APPLICATIONS:

316L Stainless Steel		Aluminium
Alcohols	Margarine	Gasoline
Acetic acid	Mayo-	Fuel oils
Caustic soda	naise	Ketones
Ethanol	Molasses	Lube oils
Fuel addi-	PVA glue	Greases
tives	Resin	Solvents
Glucose	Tallow	
Hexane	Urethane	
Insecticides	Water	
Latex	Xylene	
Liquid sugar	Yeast	

UPVC
Specialist applications
Sodium hypochlorite
Photographic solutions

Positive displacement flowmeter with two independent pulse output signals which are linearly proportional to volumetric flow rate.

Materials:

Body: manifold and terminal cover: 316L SS, Aluminium or UPVC.
 Piston: PTFE (standard) – optional PEEK polyetheretherketone or carbon filled teflon.
 O-ring: Viton (standard) – optional EPR, teflon or Buna-N (nitrile).
 Partition: 316L SS (standard) – optional Ceramic (for non-lubricating liquids).

Temperature: a. -40~60°C. (UVPC meters, max 40°C).
 b. +10~120°C.
 c. +60~150°C (output 2 only).

Accuracy: ±0.5% of rate.
 Reed switch output: 30Vdc max. voltage / 20mA max current.
 Square wave output: 5~24Vdc / 20mA max. 3 wire NPN open collector.
 Protection: IP67. - Optional, Ex d IIB T6 (Class 1, Division 1).

Output 1: Reed switch output. Voltage free contact closure.
 The reed switch is classed as a 'simple device' and can be used in hazardous areas when connected via an approved intrinsically safe barrier.

Output 2: Square wave output.
 An open collector pulse output produced by a solid state Hall Effect device.
 This three wire device requires 5~24Vdc excitation voltage and produces a high resolution NPN square wave conditioned output.

MODEL	DESCRIPTION			PRICE
MP015A MP015S MP015H	Material:	Aluminium.	30 bar max.	\$1460.00
	Material:	316L SS.	100 bar max.	\$2785.00
	Material:	316L SS.	350 bar max.	\$3885.00
	Size:	15mm.	1/2" BSPP.	
	Flow range:	10~500 litres/hour.		
	Output:	Reed switch.	200 pulses/litre.	
		Square wave.	400 pulses/litre.	
MP025A MP025S MP025H	Material:	Aluminium.	80 bar max.	\$1930.00
	Material:	316L SS.	100 bar max.	\$3470.00
	Material:	316L SS.	200 bar max.	\$4400.00
	Size:	25mm.	1" BSPP.	
	Flow range:	120~3000 litres/hour.		
	Output:	Reed switch.	20 pulses/litre.	
		Square wave.	100 pulses/litre.	
MP040A MP040S MP040H	Material:	Aluminium.	80 bar max.	\$3820.00
	Material:	316L SS.	100 bar max.	\$5665.00
	Material:	316L SS.	250 bar max.	\$6440.00
	Size:	40mm.	1 1/2" BSPP.	
	Flow range:	250~8000 litres/hour.		
	Output:	Reed switch.	7.3 pulses/litre.	
		Square wave.	44 pulses/litre.	
MP050A MP050S	Material:	Aluminium.	20 bar max.	\$4725.00
	Material:	316L SS.	38 bar max.	\$7640.00
	Size:	50mm.	2" BSPP.	
	Flow range:	700~20000 litres/hour.		
	Output:	Reed switch.	2.5 pulses/litre.	
		Square wave.	20 pulses/litre.	

OPTIONS

For process connections of: NPT, Tri-clamp, Flanges.	POA
Integrally mounted electronic register: RT14 Flowrate totaliser, Loop powered, pulse out and alarms.	\$1850.00
Note: These must be remotely mounted if the operating temperature exceeds 80°C.	

Turbine Flowmeters

TRIMEC PULSE TURBINE

Turbine flowmeter.

Turbine flowmeters are precise, reliable and rugged units for the volumetric flow measurement of clean low viscosity liquids in the petrochemical, pharmaceutical, food processing and general industrial applications.

Materials:

Body: 304 SS, (316 SS optional).

Bearings: Tungsten carbide sleeve.

Temperature: -50~150°C, (-50~240°C optional).

Pressure: 250 bar max for threaded units. Flanged units to ruling.

Pressure drop: Approx 0.28 bar at max flow. (SG=1, viscosity=1 cSt).

Linearity: ±0.5% over 10:1 turndown.

Viscosity: 10 cSt recommended maximum to maintain linear range.

Output: Pulse. Reluctance type pick-off coil. Second pick-off optional. (20mV P/P min), max 50m transmission.



Shown with a RT14 Series Rate Totaliser fitted

Overview

Pulse turbine flowmeters are precise, reliable and robust units for the volumetric flow measurement of clean low viscosity liquids.

Stainless steel construction with tungsten carbide bearings provides long life with a wide range of aggressive and non-lubricating liquids in petrochemical and general industrial applications.

Fifteen sizes cover flows from 0.11 to 7000 m³/hr. with ±0.5% linearity. Enhanced linearity is available in larger sizes where custody transfer performance is required.

The standard pick-off coil is supplied with either a military style plug or a junction box with terminal strip. Integral preamplifiers are available for harsh environments, to extend transmission distance or to interface with secondary instruments that require a conditioned signal input.

An integral RT14 series flowrate totaliser is optionally available to provide local indication with 4~20mA and Hi/Lo flow alarm outputs and/or scaleable pulse output.



Calibration

Sizes 25mm (1") and larger are calibrated on positive displacement prover loops in accordance with current API standards. For each meter size calibration is performed at five points across the nominal flow range to ensure optimum performance in every application.

The following meters are flanged units. Further information on request.

MODEL	DESCRIPTION	PRICE
PT025	Meter size: 25mm. Process connection: 1" BSP.. Flow range: 1.6~16 m ³ /hr.	\$7560.00
PT040	Meter size: 40mm. Process connection: 1.5" BSP. Flow range: 3.4~34 m ³ /hr.	\$8020.00
PT050	Meter size: 50mm. Process connection: 2" BSP. Flow range: 6.8~68 m ³ /hr.	\$8970.00
PT080 80mm. 13.5~135 m ³ /hr.		POA
PT100 100mm. 27~270 m ³ /hr.		
PT150 150mm. 55~550 m ³ /hr.		
PT200 200mm. 110~1100 m ³ /hr.		
PT250 250mm. 190~1900 m ³ /hr.		
PT300 300mm. 270~2700 m ³ /hr.		
PT400 400mm. 400~4000 m ³ /hr.		
PT500 500mm. 700~7000 m ³ /hr.		
Hygienic models. <i>The design allows the meter to be in-line cleaned and sterilised by chemical methods.</i> Sizes 012 to 080 can have Tri-clamp hygienic ferrules.		POA
MT-Mini Turbine Range.		
MT001	Flow Range litres/min: 0.05~0.5	POA
MT002	Flow Range litres/min: 0.12~1.5	POA
MT003	Flow Range litres/min: 0.2~4.5	POA
MT004	Flow Range litres/min: 0.25~6.5	POA
MT005	Flow Range litres/min: 0.3~10	POA
MT006	Flow Range litres/min: 0.5~15	POA

Strainers

It is recommended that Y type strainers are fitted in line to the smaller size meters (15 to 50mm) to provide mechanical protection to the measuring elements.

Power Transducers

RP Series

AC Current & Voltage transducers.



Features

- ◆ Accuracy of 0.2% (0.4% for TRMS).
- ◆ Input burden of only 0.3VA / element.
(1VA for self powered type).
- ◆ DIN rail mount.
- ◆ IEC 688 compliance.



MODEL	DESCRIPTION	PRICE
AC Current transducers.		
RPA	AC current transducer. Input: 0~5 amp ac. Power supply: 240Vac. Output: 4~20mA.	\$235.00
RPAX	AC current transducer. 3 way. Input: 3 x 0~5 amp ac. Power supply: 230Vac. Output: 3 x 4~20mA.	\$320.00
AC Voltage transducers.		
RPV	AC voltage transducer. Input: 0~300 volts ac. Power supply: 240Vac. Output: 4~20mA.	\$235.00
RPVX	AC voltage transducer. 3 way. Input: 3 x 0~300 volts ac. Power supply: 240Vac. Output: 3 x 4~20mA.	\$320.00
Options		Add price
	Input: Amps: 0~5, 0~1 amps ac. Volts: 0~150, 0~300, 0~500 volts ac.	N/C N/C
	Power supply: 110 or 240Vac.... Loop powered..... Self powered..... 415Vac..... 24Vdc.....	N/C N/C N/C \$80.00 \$80.00
	Output: 0~1mA, 0~20mA, 0~10mA, 4~20mA. 0~1V, 0~5V, 0~10V, 2~10V, 1~5V.	N/C
	True RMS conversion.	POA



RP Series

Frequency & Power factor transducers.

MODEL	DESCRIPTION	PRICE
Frequency transducer.		
RPF	Frequency transducer. Input: 60~300V, or 300~600Vac. Power supply: 240Vac. Output: 4~20mA. Calibration, ±0.5, ±1, ±2, ±5, ±10, Hz.	\$450.00
Power factor transducer.		
RPPF	Power factor transducer. Input: 120V, 240V or 415Vac. Power supply: 240Vac. Output: 4~20mA.	\$470.00
Options		Add price
	Input: 0~5, 0~1 amps ac. 50, 60 Hz.	N/C
	Power supply: 110 or 240Vac... 415Vac..... 24Vdc.....	N/C \$80.00 \$80.00
	Output: 0~1mA, 0~20mA, 0~10mA, 4~20mA. 0~1V, 0~5V, 0~10V, 2~10V, 1~5V.	N/C

Power Transducers

RP Series

**Watt & Watt-hour transducers.
Var & Var-hour transducers.**



Features

- ◆ Accuracy of 0.2%.
- ◆ Input burden of only 0.3VA.
- ◆ DIN rail mount.
- ◆ IEC 688 compliance.



**Watt Transducers (RPW).
Watt-Hour Transducers (RPWh).**

**Var Transducer (RPK).
Var-Hour Transducer (RPKh).**

MODEL	DESCRIPTION	PRICE
RPW-101 RPWh-101	Watt transducer. Watt-hour transducer. 1 phase 2 wire. Input: 5 amps, 240 volts ac. Power supply: 240Vac. Output: Watt: 4~20mA. Watt-hour: SSR or reed relay.	\$525.00 \$565.00
RPW-201 RPWh-201 RPK-201 RPKh-201	Watt transducer. Watt-hour transducer. Var transducer. Var-hour transducer. 3 phase 3 wire. Unbalanced load. Input: 5 amps, 415 volts ac. Line volts. Power supply: 415Vac. Output: Watt or Var: 4~20mA. Watt or Var-hour: SSR or reed relay.	\$475.00 \$615.00 \$450.00 \$615.00
RPW-301 RPWh-301 RPK-301 RPKh-301	Watt transducer. Watt-hour transducer. Var transducer. Var-hour transducer. 3 phase 4 wire. Unbalanced load. Input: 5 amps, 240 volts ac. Phase volts. Power supply: 240Vac. Output: Watt or Var: 4~20mA. Watt or Var-hour: SSR or reed relay.	\$525.00 \$690.00 \$590.00 \$690.00
Options		Add price
	Input: 50, 60 Hz. 1, 5 Amps ac. 69.3, 120, 240, 415 Volts ac.	N/C
	Power supply: 120 or 240Vac..... 415Vac..... 24Vdc.....	N/C \$80.00 \$80.00
	Analogue output for RPW or RPK: Uni-directional: 0~1mA, 0~20mA, 0~10mA, 4~20mA. 0~1V, 0~5V, 0~10V, 2~10V, 1~5V. Bi-directional: 4~12~20mA. 1~3~5V.	N/C
	Pulse output for RPWh or RPKh: Open collector type: 30V/30mA. max. Reed relay type: 50V/40mA. max.	

**OTHER CONFIGURATIONS
AVAILABLE.**

OTHER MODELS:

WATT & VAR TRANSDUCER (RPWK)

Outputs: 1 x Watt and 1 x Var.

WATT & WATT-HOUR TRANSDUCER (RPWWh)

Outputs: 1 x Watt and 1 x Watt/hour.

VAR & VAR-HOUR TRANSDUCER (RPKKh)

Outputs: 1 x Var and 1 x Var/hour.

Digital Power Meters



MDF



UMEF

MODEL	DESCRIPTION	PRICE
MDF	Programmable digital process meter. Digits: 4½ digit, LED. Power supply: 30~250Vac/dc. Programming: By dip switches. Range: 0 to ±19999 counts. Input: Voltage: min span: -10 ~ +10 mVdc. max span: -400 ~ +400 Vdc. Current: min span: -1 ~ +1 mAdc. max span: -200 ~ +200 mAdc.	\$555.00
UMEF	Programmable DC Ratio Meter. Digits: 4 digit LED. Power supply: 30~250Vac/dc. Range: 0 to 9999 counts. Input: 4~20mA (standard) Other voltage and current inputs available.	\$555.00
OPTION		Add price
	Low voltage DC power supply. 24V.	\$76.00

Power Quality Meter

The EPM 7100 power meter is conceptualised as an intelligent and revolution to the traditional single function power meters. The EPM 7100 is a new compact (96 * 48mm), electronically advanced and programmable rotating display metering device. It is the answer to the future generation of electrical metering needs and methodology. The EPM 7100 is able to replace many different units of conventional analogue or digital instruments. The parameters such as **Amp, Volt, KVA, KW, PF, KWH, KVarH, Freq, etc.** can be displayed rotating automatically: or changed manually by keypad on meter head. This saves on wiring usage and reduces the cost on metering needs.



EPM 7100

MODEL	DESCRIPTION	PRICE
EPM 7100	Power quality meter. <ul style="list-style-type: none"> ◆ For factory and building automation. ◆ Modbus RTU protocol. ◆ True RMS conversion. ◆ Field programmable PT / CT ratio. ◆ Accuracy up to 0.2%. ◆ Memory for all setup and energy data. ◆ Comprehensive self test diagnostics. ◆ Wide power supply range 80~260Vac/dc. ◆ 2KV RMS input / power isolation. 	\$490.00
OPTION		Add price
	Low voltage DC power supply. 20~60Vdc.	\$76.00

DC to Frequency Transmitter

PS Series

Analogue to frequency transmitter.

MODEL	DESCRIPTION	PRICE
PSG	Programmable DC to Frequency transmitter. Plug-in module. DIN rail mount. Power supply: 120Vac or 240Vac selectable. Input: Many ranges, programmable by dip switches. ~volts, From 0~20mV to 0~200Vdc. ~amps, From 0~200µA to 0~50mAdc. Output: Many ranges, programmable by dip switches. From 0~0.1Hz to 0~10kHz. Open collector, 5~30Vdc. 50mA.	\$445.00
OPTION		Add price
	DC power supply. 12V, 24V or 48Vdc.	\$76.00



PSG

C6 Series

Split Core CT.

MODEL	DESCRIPTION	PRICE
C6A	AC Current Transformer. Class 1. CT ratio 600/5A. Tolerance +/-0.5. Insulation 100 Mohm minimum.	\$330.00



C6A

RPM/Rate meters, Totalisers, Power Meters

SAINT MIEN

RPM/Rate/Hz meter



R1-4DO

Programmable digital RPM/Rate/Hz meter.

Digits: 4 digit LED.
 Power supply: 110/220Vac.
 Sensor power: 12Vdc, 60mA.
 Prescaler: 000.001 ~ 999.999.
 Range: 4.0 ~ 3000.
 Input: Solid state, 3k3 Hz max.
 Size: 96 x 48

MODEL	DESCRIPTION	PRICE
R1-4DO	RPM / Rate / Hz Meter.	\$213.00

Totaliser



LC8M

Digital totaliser.

Digits: 8 digit LCD.
 Power supply: Battery - 3 year life.
 Mode: Up count.
 Input: AC Volt / Contact / DC Volt
 Reset: Panel Reset, External reset.
 Size: 31 x 56

MODEL	DESCRIPTION	PRICE
LC8MA	80~250Vac Input 10Hx Max.	\$55.00
LC8MAR	80~250Vac Input 10Hx Max with Panel Reset.	\$61.00
LC8MC	Contact / Switch Input 10Hx Max.	\$55.00
LC8MCR	Contact / Switch Input 10Hx Max with Panel Reset.	\$61.00
LC8MD	6~30Vdc Input 10Hx Max.	\$55.00
LC8MDR	6~30Vdc Input 10Hx Max with Panel Reset.	\$61.00
LC8NC2	Contact / Switch Input 30Hx Max. Size: 24 x 48.	\$55.00

Hours run



LT8M

Digital hours run meter.

Digits: 8 digit LCD.
 Power supply: Battery - 3 year life.
 Range: 9999 hours 59 min.
 Input: AC Volt / Contact on/off DC Volt
 Reset: Panel Reset, External reset.
 Size: 31 x 56

MODEL	DESCRIPTION	PRICE
LT8MA	80~250Vac Input 10Hx Max.	\$55.00
LT8MAR	80~250Vac Input 10Hx Max with Panel Reset.	\$61.00
LT8MC	Contact / Switch on/off Input 10Hx Max.	\$55.00
LT8MCR	Contact / Switch on/off Input 10Hx Max with Panel Reset.	\$61.00
LT8MD	6~30Vdc Input 10Hx Max.	\$55.00
LT8MDR	6~30Vdc Input 10Hx Max with Panel Reset.	\$61.00

Current Meter



PM491AAC

AC Amps Digital Indicator.

Display: 4 digit, 15mm high.
 Programmable.
 Power supply: 110/220Vac.
 Size: 96 x 48

MODEL	DESCRIPTION	PRICE
PM491AAC	0~5 Amps Input - Digital Panel Meter.	\$72.00

Volt Meter



PM491VAC

AC Volts Digital Indicator.

Display: 4 digit, 15mm high.
 0~500Vac
 Power supply: 110/220Vac.
 Size: 96 x 48

MODEL	DESCRIPTION	PRICE
PM491VAC	0~500Vac Input - Digital Panel Meter.	\$72.00

Proximity Sensors

MODEL	DESCRIPTION	PRICE
	Inductive proximity sensor with LED indicator. Power supply: 12~24Vdc. 10mA. Temperature: -20~70°C.	
PLX1204P PLX1204N	Range: 4 mm. Dimension: 60 x Ø12mm. Output: PNP 100mA. Output: NPN 100mA.	\$45.00 \$45.00
PLX5P	Range: 5 mm. Dimension: 60 x Ø18mm. Output: PNP 100mA.	\$58.00
PLX10P	Range: 10 mm. Dimension: 50 x Ø30mm. Output: PNP 100mA.	\$88.00



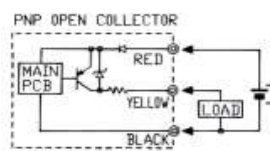
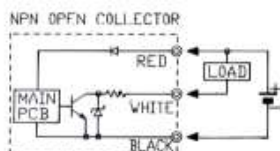
MODEL	DESCRIPTION	PRICE
	Inductive proximity sensor with LED indicator. Power supply: 12~24Vdc. 10mA. Temperature: -20~70°C.	
PL4P PL4N	Range: 4 mm. Dimension: 18 x 18 x L35mm. Output: PNP 100mA. Output: NPN 100mA.	\$25.00 \$25.00
PLH5P	Range: 5 mm. Dimension: 18 x 18 x L38mm. Output: PNP 100mA.	\$28.00
PL10P	Range: 10 mm. Dimension: 30 x 30 x L53mm. Output: PNP 100mA.	\$50.00



MODEL	DESCRIPTION	PRICE
	Photo diffusion reflective sensor with LED indicator. Power supply: 12~24Vdc. 30mA. Temperature: -20~70°C.	
RS-V30PN	Range: Adjustable, 100~300 mm. Dimension: 80 x Ø18mm. Output: PNP/NPN 100mA.	\$95.00



MODEL	DESCRIPTION	PRICE
	Capacitive proximity sensor with LED indicator. Power supply: 12~24Vdc. 20mA. Temperature: -20~70°C.	
CPLX10P CPLX10N	Range: 30 mm. Dimension: 85 x Ø18mm. Output: PNP 100mA. Output: NPN 100mA.	\$90.00 \$90.00



Counters / Timers

Counter/Timer



CT1-6D2

Programmable digital counter/timer.

Digits: 6 digit LED. 2 presets.
 Power supply: 110/220Vac.
 Output: 2 x Relay SPDT. 3A, 250Vac.
 Sensor power: 12Vdc, 60mA.

Counter.....

Mode: Up count.
 Reset: External, Auto, Manual.
 Pre-scale: 000.000~999.999
 Input: Contact. 30 Hz max.
 Solid state. 6~30Vdc. 3k Hz max.

Timer.....

Mode: On delay.
 Reset: External, Auto, Manual.
 Input: External gate for timer hold.
 Ranges: 4 selectable ranges,
 9999H59M, 9999M59S, 99999.9S, 999.999S

MODEL	SIZE	PRICE
CT1-6D2	96 x 48	\$278.00

Counter/Timer



CT3-4D2

Programmable digital counter/timer.

Digits: 4 digit LED. 2 presets.
 Power supply: 110/220Vac.
 Output: 2 x Relay SPDT. 3A, 250Vac.
 Sensor power: 12Vdc, 20mA.

Counter.....

Mode: Up count.
 Reset: External, Auto, Manual.
 Pre-scale: 000.000~999.999
 Input: Contact. 30 Hz max.
 Solid state. 6~30Vdc. 3k Hz max.

Timer.....

Mode: On delay.
 Reset: External, Auto, Manual.
 Input: External gate for timer hold.
 Ranges: 4 selectable ranges,
 99H59M, 99M59S, 999.9S, 99.99S

MODEL	SIZE	PRICE
CT3-4D2	48 x 48	\$195.00

Counter/Timer



TC49

Programmable digital counter/timer.

Digits: 6 digit LED.
 Power supply: 110/220Vac.
 Sensor power: 12Vdc, 50mA.

Counter.....

Mode: 7 counting versions.
 Reset: External.
 Input: Contact. 30 Hz max.
 Solid state. 3k Hz max.

Timer.....

Mode: Up
 Reset: External.
 Input: Contact.
 8 Ranges: From 99H59M59S to 999.999S

MODEL	SIZE	PRICE
TC49	96 x 48	\$195.00

Counters / Timers

Programmable digital counter.

Digits: 6 digit LED. 1 preset.
 Power supply: 110/220Vac.
 Mode: Up/down/reversible.
 Reset: Panel/remote, Auto/man.
 Input: Contact. 30 Hz max.
 Solid state. 3k Hz max.
 Output: Relay SPDT. 3A, 250Vac.
 Sensor power: 12Vdc 50 mA.

MODEL	SIZE	PRICE
H7N-6DM	72 x 72	\$260.00



H7N-6DM

Counter

Programmable digital counter.

Digits: 5 digit LED. 1 preset.
 Power supply: 220Vac.
 Mode: Up count.
 Reset: Panel, Auto/man.
 Input: Contact. 30 Hz max.
 Solid state. 3k Hz max.
 Output: Relay SPDT. 3A, 250Vac.
 Sensor power: 12Vdc 20 mA.

MODEL	SIZE	PRICE
H7K-52-5U	48 x 48	\$203.00



H7K-52-5U

Counter

Analogue timer.

Power supply: 220Vac.
 Mode: 1 preset. On delay.
 Start/reset: Power on/off.
 Ranges: 4 selectable ranges, 6 sec, 60 sec, 6 min, 60 min.
 Relay rating: 3A, 250Vac.
 Price includes 8 pin base.
 Size: 48 x 48

MODEL	DESCRIPTION	PRICE
H2K1	1 timed SPDT.	\$65.00
H2K2	1 timed DPDT.	\$65.00
H2K3	1 timed SPDT. 1 instant SPDT.	\$65.00



H2K

Timer

Digital timer.

Digits: 5 digit LED. 1 preset.
 Power supply: 220Vac.
 Mode: On delay.
 Start/reset: Power on/off.
 Input: External gate for timer hold.
 Output: Relay SPDT. 3A, 250Vac.
 Ranges: 4 selectable ranges,
 999.99S, 999M59S,
 9H59M59S, 999H59M.

MODEL	SIZE	PRICE
H5K-52-5U	48 x 48	\$203.00



H5K-52-5U

Timer

Programmable digital timer.

Digits: 6 digit LED. 1 preset.
 Power supply: 110/220Vac.
 Timing: Up/down.
 Mode: 8 operation modes.
 Start/reset: Panel/remote, Auto/man.
 Input: External gate for timer hold.
 Output: Relay SPDT. 3A, 250Vac.
 Ranges: 8 selectable ranges, from 99H59M59S to 999.999S.

MODEL	SIZE	PRICE
H5N-6DM	72 x 72	\$240.00



H5N-6DM

Timer

Counters / Timers

Trumeter

**Model 7111 and Model 7111 HV
Self-powered totalising counters.**

7111

Display:	8 digit LCD.
Power supply:	Battery powered.
Reset:	Manual or remote.
Protection:	Front panel IP65.
Size:	24 x 48 mm.

MODEL	DESCRIPTION	PRICE
7111	Model 7111 Self-powered totalising counter. Bi-directional: count up. Low speed count input: Contact/open collector. 30Hz max High speed count input: Electronic. 10kHz max.	\$95.00
7111 HV	Model 7111 HV Self-powered totalising counter. Bi-directional: add/subtract. Direction input: Connection or electronic. High speed count input: Electronic. 10kHz max. High voltage input trigger: 10~240Vac / 5~110Vdc.	\$132.00
OPTION		
7111 QUAD	Model 7111 QUAD Quadrature signal compatible. Converts the signal from a quadrature output sensor such as a shaft encoder into count and direction signals. No count loss or gain in forward or reverse motion.	\$142.00

Trumeter

**Model 7511 and Model 7511 HV
Self-powered hours run and totalising timers.**

7511

Display:	8 digit LCD.
Power supply:	Battery powered.
Control:	Remote start/stop control of timing by contact closure.
Reset:	Remote reset by contact closure. Front panel reset enable/disable by link.
Protection:	Front panel IP65.
Size:	24 x 48 mm.

MODEL	DESCRIPTION	PRICE
7511	Model 7511 Hours run / totalising counter. 4 timing modes: Seconds, Minutes & Seconds, Hours 1/100ths or Hours & Minutes. Times up or down. Standard plug in connector with colour coded flying leads.	\$95.00
7511 HV	Model 7511 HV High voltage input: 10~240Vac / 5~110Vdc.	\$132.00

Trumeter

Model 7922 – Programmable predetermining counter. (Replaces Model 7921).

7922

User programmable to operate as a predetermining up/down counter.	
Display:	2 rows of 6 digit LCD with backlighting.
Power supply:	94~240Vac, or 12~24Vdc. Sensor power: 12Vdc \pm 10% @ 100mA (when operating from AC supply).
Protection:	Front panel IP65. Size: 48 x 48 mm.
Prescaler:	Mult, 0.00001~9.99999. Divide, 1~99999.
Reset:	Manual or remote.

MODEL	DESCRIPTION	PRICE
7922	Model 7922 Programmable predetermining counter 2 presets or 1 preset and batch. Bi-directional, up/down counter with prescaler. Input: NPN or PNP, Quadrature and uni-directional. Selectable rates for input A and B, 10kHz max. Output: 2 Relays, 5A 260Vac / 30Vdc. Programmable for pulsed or latched, n/o or n/c.	\$430.00

Counters / Timers

Trumeter

Model 9100 – Multi-function counter/ratemeter.

Simultaneously maintains any of the following:
Count preset, Count pre-warn, Batch preset, Over-speed, Under-speed condition.

And displays:

Count, Total and Speed.

Counts in any of 7 modes: A-B, A+B, A/B, count and direction and quadrature x1, x2 & x4.
 Counting continues while rate measurement is in progress.

3 line supertwist LCD backlit display viewable from any angle.
 CAN bus/Device net interface as an option.

Power supply: 85~260Vac. Sensor power: 12Vdc, 100mA.
 Protection: Front panel IP65. Size: 72 x 72 mm.
 Rate input: 8~30Vdc. max. 10kHz. min 0.078Hz. (1 pulse per 12.8sec).
 Rate mult: 0.00250~9.99999.
 Prescaler: Mult, 0.00250~9.99999. Divide, 1~99999.
 Reset: Manual, remote and automatic.
 Control inputs: External reset, count inhibit, keyboard disable.
 Output: 3 relays, programmable for pulsed, latched or disable.
 SPST, 5A 260Vac.



9100

MODEL	DESCRIPTION	PRICE
9100	Model 9100 – Multi-function counter/ratemeter. Multi-preset.	\$1015.00

Trumeter

Model 7932 – Programmable predetermining counter/timer.

User programmable to operate as a preset up/down timer.

Display: 2 rows of 6 digit LCD with backlighting.
 Power supply: 85~260Vac, 10~30Vdc.
 Sensor power: 12Vdc 100mA.
 Timing ranges: (a) 0.01 seconds, (b) seconds, (c) minutes,
 (d) hours and hundredths, (e) hours and minutes.
 Count range: 0~999999.
 Input: 12~240V.
 Reset: Manual, automatic or 12~240V.
 Protection: Front panel IP65.
 Size: 48 x 48 mm.
 Output: Relay, SPDT, 5A 260Vac. 150W 30Vdc.



7932

MODEL	DESCRIPTION	PRICE
7932	Model 7932 – Programmable predetermining counter/timer. Single preset.	\$385.00

Trumeter

APM – Advanced Panel Meters

Programmable dynamic backlight colour.
 40 segment bar graph display.
 Custom annunciators.
 Easy to use free software via USB port.
 Input Types: Voltage, Current, Frequency.
 Power Supply: 12~24Vac/dc



APM-AMP

MODEL	DESCRIPTION	PRICE
APM-AMP-APO	APM Amp Meter, Positive LCD with Outputs.	\$215.00
APM-FREQ-APO	APM Frequency Meter, Positive LCD with Outputs.	\$215.00
APM-PROC-APO	APM Process Meter, Positive LCD with Outputs.	\$245.00
APM-VOLT-APO	APM Voltmeter, Positive LCD with Outputs.	\$215.00



APM-FREQ



APM-PROC



APM-VOLT

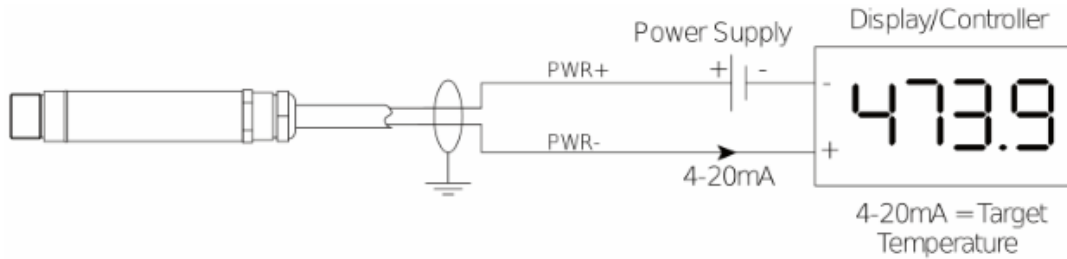
Infrared Temperature Sensors

Common Specifications:

Output: 4~20mA.
 Housing: Stainless steel.
 Environmental rating: IP65.
 Working temperature: 0~70°C / 95% RH max. non-condensing
 Power supply: 24Vdc.
 Max. Loop impedance: 900Ω.



MODEL	DESCRIPTION	PRICE
	PyroCouple Infrared Temperature Sensor. Accuracy: ±1% of reading or ±1°C. Emissivity setting: Fixed at 0.95. Response time, t_{90} : 210 ms (90% response). Spectral range: 8 to 14 μm. Dimensions: 18 x 103 mm. Thread mounting: M16 x 1mm pitch. Cable length: 1m. Weight with cable: 95g.	
PC301LT-0	Temperature range: -20~100°C. Field of view: 30:1 divergent optics	\$750.00
PC301HT-0	Temperature range: 0~500°C. Field of view: 30:1 divergent optics	\$750.00
PC151LT-0	Temperature range: -20~100°C. Field of view: 15:1 divergent optics	\$585.00
PC151MT-0	Temperature range: 0~250°C. Field of view: 15:1 divergent optics	\$585.00
ABS	Adjustable mounting bracket.	\$83.00
APSN	Air Purge Collar	\$155.00
Other models available on request.		



Mr Signal - Multi-functional Signal Generator



The **MR Signal** PLC Signal Generator is a versatile instrument used for debugging industrial PLC and process instruments, and adjusting valves. The MR Signal has advantages of high precision and powerful functions; it can do input and output signals at the same time with high precision and good linearity. Small in size for convenience.

Functions are easy and programmable through the window menu with a graph to show curves and trends. Easy to use, compact, broad functionality with fast response. No tool box is complete without it!



MODEL	DESCRIPTION	PRICE
MR Signal	Multi-functional Signal Generator. Kit contains: 1 x MR29270CP 1 x 10A/4mm Test Clip (black) 1 x 10A/4mm Test Clip (red) 1 x 10A/4mm Test Clip (blue) 1 x 10A/4mm Test Clip (yellow) 1 x Certificate 1 x Tool bag 1 x USB cable	\$495.00

Input Types:

- ◆ Current
- ◆ Voltage
- ◆ Frequency
- ◆ mV
- ◆ Thermocouple
- ◆ Pt100
- ◆ Resistance
- ◆ And more.

Features:

- ◆ Working temperature: 0-50°C.
- ◆ Overall dimensions: 90 x 70x 28mm.
- ◆ Weight: 500g.
- ◆ Power: Built-in lithium battery: 200mA USB or charging and supply.
- ◆ Battery life: 20 mA output can work continuously more than 8 hours.

Refrigeration Controllers

MODEL	DESCRIPTION	PRICE
C1206-F	3 digit. 1x sensor, 2x relay. Timed defrost. Manual defrost button. Range: -40~60°C. Power Supply: 220Vac Cut out 71w x 30h. Modbus RS485. Cable length: 2m	\$91.00
C1206-H	3 digit. 1x sensor, 1x relay. Safety sensor fail mode. Timed defrost. Range: -40~100°C. Power Supply: 220Vac Cut out 71w x 30h. Heating and cooling. Cable length: 2m	\$95.00
C1210	2 digit basic controller. 1x sensor, 1x relay. Timed defrost. Range: -40~60°C. Power Supply: 220Vac Cut out 71w x 30h. Heating and cooling. Cable length: 2m	\$63.00
103AT	Replacement NTC sensor with 2m lead for controllers above.	\$29.00



Solar Powered Temperature Indicators

Solar Powered Temperature Indicators.

MODEL	DESCRIPTION	PRICE
D2105	Small panel mount LCD. Dimensions: 58x25 mm panel cut out. LCD Size: 12mm. Range: -40~40°C. Cable length: 2m	\$36.00
D2106	Small surface mount LCD. Dimensions: 115x30 mm. LCD Size: 10mm. Range: -50~125°C. Cable length: 1.5m	\$38.00
D1220	Wall mount LCD. Dimensions: 135mm diameter flange. LCD Size: 20mm. Rating: IP65. Cable: S/S flex, 2 metres. Probe: 120x6mm tip. Range: -50~125°C.	\$99.00



Platinum Resistance (-200°C to 239°C)

Temperature Coefficient - 0.00385 Ohms/Ohm/°C

°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms	°C	Ohms
-200	18.49	-137	45.11	-74	70.73	-11	95.69	51	119.78	114	143.80	177	167.35
-199	18.93	-136	45.52	-73	71.13			52	120.16	115	144.17	178	167.72
-198	19.36	-135	45.94	-72	71.53	-10	96.09	53	120.55	116	144.55	179	168.09
-197	19.79	-134	46.35	-71	71.93	-9	96.48	54	120.93	117	144.93		
-196	20.22	-133	46.76			-8	96.87	55	121.32	118	145.31	180	168.46
-195	20.65	-132	47.18	-70	72.33	-7	97.26	56	121.70	119	145.68	181	168.83
-194	21.08	-131	47.59	-69	72.73	-6	97.65	57	122.09			182	169.20
-193	21.51			-68	73.13	-5	98.04	58	122.47	120	146.06	183	169.57
-192	21.94	-130	48.00	-67	73.53	-4	98.44	59	122.86	121	146.44	184	169.94
-191	22.37	-129	48.41	-66	73.93	-3	98.83			122	146.81	185	170.31
		-128	48.82	-65	74.33	-2	99.22	60	123.24	123	147.19	186	170.68
-190	22.80	-127	49.23	-64	74.73	-1	99.61	61	123.62	124	147.57	187	171.05
-189	23.23	-126	49.64	-63	75.13			62	124.01	125	147.94	188	171.42
-188	23.66	-125	50.06	-62	75.53	0	100.00	63	124.39	126	148.32	189	171.79
-187	24.09	-124	50.47	-61	75.93	1	100.39	64	124.77	127	148.70		
-186	24.52	-123	50.88			2	100.78	65	125.16	128	149.07	190	172.16
-185	24.94	-122	51.29	-60	76.33	3	101.17	66	125.54	129	149.45	191	172.53
-184	25.37	-121	51.70	-59	76.73	4	101.56	67	125.92			192	172.90
-183	25.80			-58	77.13	5	101.95	68	126.31	130	149.82	193	173.26
-182	26.23	-120	52.11	-57	77.52	6	102.34	69	126.69	131	150.20	194	173.63
-181	26.65	-119	52.52	-56	77.92	7	102.73			132	150.57	195	174.00
		-118	52.92	-55	78.32	8	103.12	70	127.07	133	150.95	196	174.37
-180	27.08	-117	53.33	-54	78.72	9	103.51	71	127.45	134	151.33	197	174.74
-179	27.50	-116	53.74	-53	79.11			72	127.84	135	151.70	198	175.10
-178	27.93	-115	54.15	-52	79.51	10	103.90	73	128.22	136	152.08	199	175.47
-177	28.35	-114	54.56	-51	79.91	11	104.29	74	128.60	137	152.45		
-176	28.78	-113	54.97			12	104.68	75	128.98	138	152.83	200	175.84
-175	29.20	-112	55.38	-50	80.31	13	105.07	76	129.37	139	153.20	201	176.21
-174	29.63	-111	55.78	-49	80.70	14	105.46	77	129.75			202	176.57
-173	30.05			-48	81.10	15	105.85	78	130.13	140	153.58	203	176.94
-172	30.47	-110	56.19	-47	81.50	16	106.24	79	130.51	141	153.95	204	177.31
-171	30.90	-109	56.60	-46	81.89	17	106.63			142	154.32	205	177.68
		-108	57.00	-45	82.29	18	107.02	80	130.89	143	154.70	206	178.04
-170	31.32	-107	57.41	-44	82.69	19	107.40	81	131.27	144	155.07	207	178.41
-169	31.74	-106	57.82	-43	83.08			82	131.66	145	155.45	208	178.78
-168	32.16	-105	58.22	-42	83.48	20	107.79	83	132.04	146	155.82	209	179.14
-167	32.59	-104	58.63	-41	83.88	21	108.18	84	132.42	147	156.19		
-166	33.01	-103	59.04			22	108.57	85	132.80	148	156.57	210	179.51
-165	33.43	-102	59.44	-40	84.27	23	108.96	86	133.18	149	156.94	211	179.88
-164	33.85	-101	59.85	-39	84.67	24	109.35	87	133.56			212	180.24
-163	34.27			-38	85.06	25	109.73	88	133.94	150	157.31	213	180.61
-162	34.69	-100	60.25	-37	85.46	26	110.12	89	134.32	151	157.69	214	180.97
-161	35.11	-99	60.66	-36	85.85	27	110.51			152	158.06	215	181.34
		-98	61.06	-35	86.25	28	110.90	90	134.70	153	158.43	216	181.71
-160	35.53	-97	61.47	-34	86.64	29	111.28	91	135.08	154	158.81	217	182.07
-159	35.95	-96	61.87	-33	87.04			92	135.46	155	159.18	218	182.44
-158	36.37	-95	62.28	-32	87.43	30	111.67	93	135.84	156	159.55	219	182.80
-157	36.79	-94	62.68	-31	87.83	31	112.06	94	136.22	157	159.93		
-156	37.21	-93	63.09			32	112.45	95	136.60	158	160.30	220	183.17
-155	37.63	-92	63.49	-30	88.22	33	112.83	96	136.98	159	160.67	221	183.53
-154	38.04	-91	63.90	-29	88.62	34	113.22	97	137.36			222	183.90
-153	38.46			-28	89.01	35	113.61	98	137.74	160	161.04	223	184.26
-152	38.88	-90	64.30	-27	89.40	36	113.99	99	138.12	161	161.42	224	184.63
-151	39.30	-89	64.70	-26	89.80	37	114.38			162	161.79	225	184.99
		-88	65.11	-25	90.19	38	114.77	100	138.50	163	162.16	226	185.36
-150	39.71	-87	65.51	-24	90.59	39	115.15	101	138.88	164	162.53	227	185.72
-149	40.13	-86	65.91	-23	90.98			102	139.26	165	162.90	228	186.09
-148	40.55	-85	66.31	-22	91.37	40	115.54	103	139.64	166	163.27	229	186.45
-147	40.96	-84	66.72	-21	91.77	41	115.93	104	140.02	167	163.65		
-146	41.38	-83	67.12			42	116.31	105	140.39	168	164.02	230	186.82
-145	41.79	-82	67.52	-20	92.16	43	116.70	106	140.77	169	164.39	231	187.18
-144	42.21	-81	67.92	-19	92.55	44	117.08	107	141.15			232	187.54
-143	42.63			-18	92.95	45	117.47	108	141.53	170	164.76	233	187.91
-142	43.04	-80	68.33	-17	93.34	46	117.85	109	141.91	171	165.13	234	188.27
-141	43.45	-79	68.73	-16	93.73	47	118.24			172	165.50	235	188.63
		-78	69.13	-15	94.12	48	118.62	110	142.29	173	165.87	236	189.00
-140	43.87	-77	69.53	-14	94.52	49	119.01	111	142.66	174	166.24	237	189.36
-139	44.28	-76	69.93	-13	94.91			112	143.04	175	166.61	238	189.72
-138	44.70	-75	70.33	-12	95.30	50	119.40	113	143.42	176	166.98	239	190.09

Intech Instruments Ltd CONDITIONS OF SALE

Note: These terms and conditions apply to all future transactions between Intech Instruments Limited and you.

1. **Prices:** All prices are based on the factory price list as held by Intech at date of quotation, and also on rates of duty and primage, basic wages, freight, insurance and foreign exchange fluctuations at date of quotation. Any increase between the date of quotation and the date of delivery in direct costs other than the factory price resulting from variation in any of these factors or any other factor beyond the reasonable control of Intech shall be payable by the purchaser, provided the Buyer may cancel the Agreement within 7 days of notice of any increase in price. All prices quoted unless otherwise specified are in New Zealand dollars.
2. **Validity:** Unless previously withdrawn our quotation is open for acceptance for the period stated therein, or when no period is stated, within 30 days only from the date thereof, and is subject to confirmation by Intech at the time of such acceptance. The quotation is not deemed to have been accepted until all information required for indenting or ordering of items has been received.
3. **Government Approval or Import License:** Our quotation is subject to the availability of any necessary Government Approval or Import Licences and in the event of such approval or Licence not being forthcoming after reasonable efforts have been made by Intech, Intech may at its option determine the contract of sale and neither party shall have any claim against the other in respect thereof.
4. **Delivery:** Where a delivery period is quoted the period will commence when the purchaser accepts or is deemed to have accepted the quotation or upon the granting of Government approval or Import Licence where necessary or (where requested by Intech) upon receipt by Intech of all necessary information and drawings to enable the work to be put in hand whichever is the later. In no circumstances shall Intech be liable for late delivery by reasons of fire, strike, stoppages of work, war, Government action, transport delays, acts of God, shortages of supplies or manufacturers delays or any other cause whatsoever beyond Intech's control. Delivery shall be deemed to be made to the Buyer when the goods are despatched from Intech's premises or at the time when the Buyer is advised of the availability of the goods for dispatch in the event of the Buyer being unable to take delivery immediately. Where the goods are to be supplied and installed by Intech, delivery shall be deemed to be made when the goods are supplied and delivered to the Buyer's premises. Where it is agreed that the goods may be delivered by instalments each delivery is to be regarded as a separate contract and price payable accordingly. Failure of the Buyer to pay for one or more instalments of goods on due dates shall entitle Intech at its option to: a) suspend further deliveries pending payment; and or b) treat the agreement as repudiated by the Buyer.
5. **Passing of Risk:** Risk passes from Intech to Buyer on delivery from which time the goods shall be at the sole risk of the Buyer notwithstanding that payment for such goods may be payable in whole or in part at a later date.
6. **Property in the goods:** Until payment of the whole of the purchase, the property of the goods shall not pass to the Buyer notwithstanding that the risk has passed to the Buyer on delivery as aforesaid. Pending full payment, the Buyer agrees to hold the equipment as bailee and in default of payment on the due date of any instalment to return goods in good order and condition to the company.
7. **Insurance and Transportation:** All insurance and transportation charges after delivery are the responsibility of the Buyer. Where requested, Intech will arrange transport and insurance for the goods on behalf of the Buyer and the cost thereof shall be paid by the Buyer.
8. **Damage, etc.:** Inspection of the goods shall be made by the Buyer immediately upon delivery and in the event of damage, incorrect execution or shortage, the Buyer shall notify Intech in writing within 3 days of receipt of goods, and shall similarly notify the carrier in the case of damage or shortage of goods. Intech shall not be liable in respect of damage or shortage caused in transit, but any insurance arranged as in clause 7 hereof shall be applicable. The Buyer shall afford Intech the opportunity to inspect the goods within a reasonable time following notice and before any use is made. If the Buyer fails to comply with the provisions the goods are conclusively presumed in accordance with the agreement and free of any defect/damage apparent on reasonable examination and the Buyer has deemed to have accepted them.
9. **Payment:** Payment must be tendered to Intech in New Zealand currency at the registered office of Intech by the 20th of the month following the month in which the goods were despatched. Unless stated to the contrary Intech reserves the right to charge interest at 10% per annum on overdue accounts.
10. **Guarantee:** Equipment supplied by Intech Instruments Ltd, unless otherwise stated, is guaranteed against faulty workmanship and material for twelve months from the date of dispatch from Intech's premises. Intech's responsibility is limited to the replacement of defective parts whether the work is carried out on site or at Intech's premises. Equipment may be repaired under guarantee on site or at Intech's premises providing the equipment is returned to Intech freight paid. If the repairs are carried out on site travelling and accommodation costs may be charged at ruling rates. Should Intech be called upon to carry out work under guarantee and find that the fault is not due to faulty workmanship or materials on Intech's part then any costs involved will be added to the contract price and charged accordingly.
11. **Limitation of Liability:** Intech's liability to you is strictly limited to its obligations under the guarantee. Intech accepts no responsibility for any other damage loss or losses arising from or in any way connected with the goods supplied or services provided whether directly or indirectly and whether by way of consequential loss or otherwise howsoever. If despite the exclusions of liability in this clause Intech is found to be liable to you, the liability shall be limited to the value of the goods or services supplied by Intech to which the claim relates.
12. **Errors:** Quotations are subject to correction by Intech for omissions and typing errors.
13. **Definition:** Wherever the word "Intech" is used it shall be deemed to extend to and include Intech Instruments Limited or its successor or assign.

We may alter the prices of the Products, our Conditions of Sale, the design of our Products, Product documentation and any other information on our website at any time, without notice to you.

Prices are standard packaging and ex Intech's store, freight is an additional charge (see Clause 7 above).

Prices are in New Zealand dollars and are exclusive of GST (goods and service tax).

Temperature probes do not have a warranty.

This price list supersedes all previous Intech Instruments Ltd price lists and is subject to change without notice.

Intech Instruments Ltd			
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VISIT OUR WEBSITE

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Instrumentation Specialists

We help industries to monitor and control processes

Intech Instruments are manufacturers, exporters and Importers of quality state of the art products for **measurement** and **control** of Temperature, Humidity, Pressure, Flow, Level, pH and Conductivity.

We also provide a complete line of Data Acquisition, Automation, Signal and Environmental products.

Intech[®]

Instruments

Instrumentation • Monitoring • Control

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