EXPORT PRODUCT CATALOGUE

Intech®
Instruments

ABOUT INTECH

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** and **Liquids Analysis**.

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

At Intech we are dedicated to and very passionate about instrumentation.

CONTENTS

Intech® Instruments

HOW TO ORDER

To order, simply email **export@intech.co.nz**, we will respond as soon as possible.

Orders will be processed for immediate delivery (subject to stock) for customers that have an open account with us, or once payment is received for cash only customers.

Ordering Code(s) required:
When ordering please supply the full ordering code for each product that you require. Doing this helps us give you the most prompt and efficient service we can. If we require further information, we will be in touch with you.

Payment Methods:
We accept payment by either Direct Bank Transfer or Credit Card (Visa or MasterCard).

Shipping:
The cost of shipping is separate and borne by the purchaser. We use DHL Express but you are also welcome to use your own freight forwader. Please specify at the time of ordering.

Bank Charges:
Bank charges will be included in the invoice, these are to cover the bank charges from your side.

Address Details required:
Please ensure that you supply us with a full physical address for delivery. If your delivery address is not complete this will result in delays in the dispatch of your order.

WALL MOUNT RTD PROBES

WMR Series

Wall Mount Pt100 Probes

WMR with Alloy Head

WMR with Conduit Box

- RTD Pt100 DIN Standard element
- Temperature ranges from -20~80°C (PVC) and -40~110°C (Alloy)
- Air insulated with heat transfer paste
- Sheath material 316SS
- Optional head mount transmitter XU2HN
- Optional Cable Gland for conduit box
- Sealed stem available (Powder packed)

Code	Specifications
WMR-S6.4-100-CB-N-N-N	Conduit Box (PVC) wall mount probe 6.4mmØ x 100mm, 316SS, IP44. Temp: Min/Max of probe: -20°~80°C.
WMR-S6.4-100-AH-N-N-N	Cast Alloy Head wall mount probe 6.4mmØ x 100mm, 316SS, IP67. Temp: Min/Max of probe: -40°~110°C

Ordering Information WMR Series

Item	Code	Specification
Model	**WMR**	Wall Mounted RTD Assembly
Element	**S**	Single (Pt100)
	D	Duplex (2 x Pt100)
	X	Others
Outer Diameter	**6.4-**	Millimetres (316SS)
	X-	Other (Specify)
Sheath Length	**100-**	Millimetres (Standard)
	xxx-	Other (Specify)
Connection	**CB-**	Conduit Box (PVC) (-20~80°C)
	AH-	Cast Alloy Head (-40~110°C)
Transmitter	**N-**	None
	H-	XU2HN Non Isolated Head Transmitter
	I-	XU2HI Isolated Head Transmitter
	L-	LPN-R-H Non Isolated Head Transmitter
	E-	dTRANS T01-B-Ex Transmitter HART® and Ex Rating
Transmitter range	**N-**	None
	10-	0~100°C
	55-	-50~50°C
	X	Other ranges
Options	**N**	None
	C	Cable Gland for Conduit box
	S	Powder packed (rated -70~250°C at tip)

Model No. Example: **WMR-S6.4-100-CB-N-N-N** (Wall Mount Probe with Single element, 6.4mm diameter, 100mm sheath length and PVC conduit box connection).

Note: The above covers the more common RTD probes. We can supply probes to your particular application.

DIFFERENTIAL PRESSURE TRANSMITTER

LPN-DP Series

Differential Pressure Transmitter

Programmable Differential Pressure Input to 4~20mA Loop Powered Output Transmitters

- 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
- Easy to Install

Code	Specifications
LPN-DP-100	0~100mm WG (Differential range within ±100 to ±100 mmWG)
LPN-DP-1000	0~1000mm WG (Differential range within ±100 to ±1000 mmWG)

HYDROSTATIC LEVEL TRANSMITTERS

IN-LLT

Submersible Level Transmitter for Water Applications

- Integrated construction
- Sensor housing protection IP68
- Cost-efficient, high reliability and stability
- Housing: ø26 x 92mm, 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: <(UT-12)/0.02

Code	Specifications
IN-LLT-C-1	0~1m H2O with 10m of cable, 4-20mA Output, ø26mm
IN-LLT-C-5	0~5m H2O with 10m of cable, 4-20mA Output, ø26mm
IN-LLT-V-5	0~5m H2O with 10m of cable, 0~5Vdc Output, ø26mm

Note: See all available accesories on page 7

IN-LLT-C17

Submersible Level Transmitter - Slim Diameter

- Integrated construction
- Sensor housing protection IP68
- Cost-efficient, high reliability and stability
- Housing: ø**17**mm x 92mm 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: <(UT-12)/0.02

Code	Specifications
IN-LLT-C17-10	0~10m H2O with 15m of cable, ø17mm
IN-LLT-C17-20	0~20m H2O with 30m of cable, ø17mm
IN-LLT-C17-50	0~50m H2O with 60m of cable, ø17mm
IN-LLT-C17-100	0~100m H2O with 110m of cable, ø17mm

Accessories

Common Accessories for Level Transmitters

LPN-OVP

Overload Protection Unit – Standard DIN Rail Mount

NAA-209

Cable Mounting Wedge Clamp

404392-BOX

Terminal box with built in pressure equalization filter

NAA-105

Cable Holding Sliding Sleeve 1 ½" BSP

NAA-101

Terminal box with filter. IP65. 93x93mm

NAA-102

Terminal box with filter and integral OVP. IP65 93x93mm.

FLOW PULSE AMPLIFIER

TW-FFA

Flow Pulse Amplifier

Features

- High input sensitivity
- Compact DIN rail mount
- AC mV or Vdc frequency input
- Cost effective
- Easy to install
- Reverse polarity protection
-

Specifications

- Power supply: 5~32Vdc.
- Input: Flow meter impeller or mV: ac or dc frequency.
- Output: Square wave, 200mA @ 24Vdc. 10kHz max.

Code	Specifications
TW-FFA	Flow Pulse Amplifier

pH PROBES

M-10

pH and ORP Sensor

General purpose 1/2" NPT pH and ORP sensor

Features

- 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.

Code	Specifications
M-10	pH Sensor, General purpose ½"NPT, BNC Connector & 4.6m of cable
M-10-ORP	ORP Sensor, General purpose ½"NPT, 4.6m of cable Used for Redox measurement in relatively clean waters

M-11

pH Sensor

General purpose ¾" NPT pH and ORP sensor

Features

- Temperature: 0~80°C
- Pressure: 0~100 psi
- Cable length: 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

Code	Specifications
M-11	pH Sensor, General purpose 3/4"NPT, BNC Connector & 4.6m of cable
M-11-PT100	pH Sensor, General purpose 3/4"NPT, 4.6m of cable. Includes a Pt100 sensor.
M-11-PT100-10m	pH Sensor, General purpose 3/4"NPT, 10m of cable. Includes a Pt100 sensor
M-11-PT100-HT	pH Sensor, General purpose 3/4"NPT, 4.6m of cable. High Temperature version (0~110°C) High Pressure (0~150 psi) including a Pt100 sensor

M-12

pH Sensor

General purpose ¾" NPT pH sensor for flowing, viscous applications.

Features

- 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.

Code	Specifications
M-12	pH Sensor, General purpose 3/4"NPT, BNC Connector & 4.6m of cable
M-12-PT100	pH Sensor, General purpose 3/4"NPT pH sensor, 4.6m of cable. Includes a Pt100 sensor
M-12-PT100-HT	pH Sensor, General purpose 3/4"NPT pH sensor, 4.6m of cable. High Temperature version (0~110°C) High Pressure (0~150psi) including a Pt100 sensor

M-21

pH Sensor

General purpose ¾” NPT pH sensor with long insertion length

Features

- 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.

Code	Specifications
M-21	pH sensor, General purpose 3/4”NPT, 4.6m of cable with long insertion length
M-21-PT100	pH sensor, General purpose 3/4”NPT, 4.6m of cable with long insertion length. Includes a Pt100 sensor.
M-21-PT100-HT	pH Sensor, General purpose 3/4”NPT, 4.6m of cable with long insertion length. High Temperature version (0~110°C) High Pressure (0~150psi) including a Pt100 sensor.

pH TRANSMITTER

LPI-pH

pH Transmitter

Features

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

Code	Specifications
LPI-pH	Isolating pH Voltage Input to 4~20mA Output Loop Powered Transmitter

2 WIRE TRANSMITTERS - LOOP POWERED

UNIVERSAL INPUT

XU2

Universal Input Transmitter (Processor)

- Programmable via USB (requires XU-USB programming 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

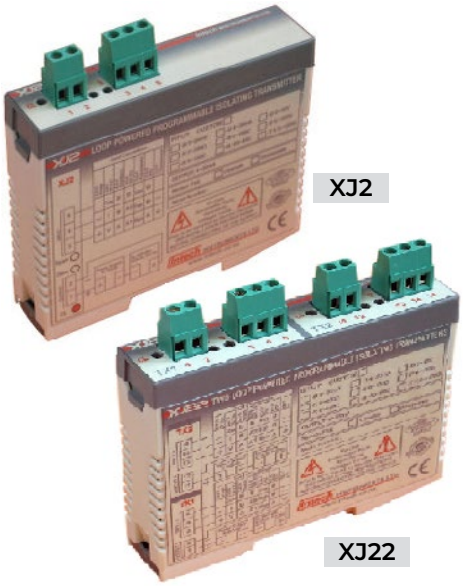
Input Types:

- Thermocouple B, E, J, K, N, R, S, T
- RTD Pt100 and Pt1000
- For RTD and Thermocouple; Output is Linear with Temperature
- DC: mA, mV and V
- Potentiometer
- 32 point curve fitter for mA, mV, V inputs

Code	Specifications
XU2	Universal Input Transmitter, 2 Wire, USB Programmable
XU-USB	USB Programming cable (Used to set up different ranges)

XJ2 / XJ22

Universal Input Transmitter (Analogue)



XJ2

XJ22

- 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

Input Types:

- DC: mV, V, & mA
- RTD Pt100
- Differential RTD
- Thermocouple (T/C)
- Bridge/Strain Gauge
- Potentiometer
- Resistance

Code	Specifications
XJ2	Single Universal Input Transmitter; One XJ2 Transmitter per enclosure, Standard Calibration units: Inputs 4~20mA
XJ22	Dual Universal Input Transmitter; Two XJ2 Transmitters per enclosure, Standard Calibration units: Inputs 4~20mA

AC CURRENT

LPI-CT-X

AC Current Transmitter

- Field programmable 1Aac or 5Aac
- Mains isolated
- High accuracy
- Reverse polarity protected
- LED indication of loop current
- Compact DIN rail mount enclosure
- 40~200mV output test signal
- Easy to install
- Power supply range 9~33Vdc
- Available with one or two transmitters per enclosure

Code	Specifications
LPI-CT-X1	Single AC Current to DC Isolating Transmitter, Standard 0~5Aac Input Range, 4~20mA Output
LPI-CT-X2	Dual AC Current to DC Isolating Transmitter, Standard 0~5Aac Input Range, 4~20mA Output

Note: Other ranges available on request.

INCCT

AC Current Transmitters

- Split Core Current Transmitters and Switch
- Selectable ranges
- Output: 4~20mA loop powered
- Easy installation

Typical Applications

- Monitoring of fans
- Pump measuring
- And more

Code	Specifications
INCCT-521-SP	AC Current Transmitter, Selectable Ranges: 10A, 20A, 50A
INCCT-2151-SP	AC Current Transmitter, Selectable Ranges: 100A, 150A, 200A
INCCT-521-RMS	AC Current Transmitter, Selectable Ranges: 10A, 20A, 50A, True RMS
INCCT-2151-RMS	AC Current Transmitter, Selectable Ranges: 100A, 150A, 200A, True RMS
INCCS-04K-SW	AC Current Switch, Adjustable: 1.5~200A in 3x ranges, self-powered

BRIDGE / STRAIN GAUGE

LPI-B

2 Wire Bridge Isolated Transmitter

- Field programmable Bi-Polar input ranges
- Isolated input to output 2.0kVDC
- High accuracy
- 40~200mV output test signal
- LED indication of loop current
- Selectable 3 second input damping
- Easy to install
- Compact DIN rail mount enclosure
- Available Standard or Special Calibration
- Reverse Polarity Protection
- Programmable input ranges from 0~1mV to 800mV

Code	Specifications
LPI-B	Bridge to DC Isolating Signal Transmitter, Standard 0~20mV Input, Programmable Input Range Calibration

Note: Other ranges available on request.

See also the **XJ2 / XJ22 Universal Input Transmitter** on page 11 for bridge / strain gauge input options.

DC SIGNAL

LPI-D

DC Transmitter

- Field programmable Bi-Polar input ranges (Model P)
- Isolated input to output 2.0kV
- High accuracy
- 40~200mV output test signal
- LED indication of loop current
- Easy to install
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Reverse polarity protection
- LPI-D-F: Fixed input ranges available: 4~20mA, 0~20mA, 0~5Vdc, 1~5Vdc, 2~10Vdc, 0~10Vdc.
- LPI-D-P: Field Programmable input ranges from 0~10mV to 150V and from 0~200uA to 100mA.

Code	Specifications
LPI-D-F	DC to DC Isolating Transmitter, Standard 4~20mA Input, Fixed Input Range
LPI-D-F-K	DC to DC Isolating Transmitter, 0~10V Input, Fixed Input Range
LPI-D-P	DC to DC Isolating Transmitter, Standard 4~20mA Input, Programmable Input Range

Note: Other ranges available on request.

See also the **XU2** and **XJ2 / XJ22** Universal Input Transmitters on page 11 for mV, V & mA Input options.

FREQUENCY

LPI-F

Frequency Transmitter

- Field programmable input ranges
- Isolated input to output 2.0kV
- Impedance matching on input
- Crystal locked F-V
- Selectable damping
- High accuracy 0.1%
- 40~200mV Output test signal
- LED indication of loop current
- Easy to install
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Reverse polarity protection

Code	Specifications
LPI-F	Frequency Transmitter, Standard 0~100Hz Input, Programmable

LIGHT INTENSITY (LUX)

LPN-LUX

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.

- 2 wire 4~20mA output (loop powered)
- High accuracy
- IP66 enclosure
- Reverse polarity protection
- Special Calibration Ranges available:
  0~100, 0~500, 0~5000, 0~10000lux

Code	Specifications
LPN-LUX	Light Intensity 4~20mA Transmitter, Standard Calibration 0~1000lux Nominal

Note: Other ranges available on request.

POTENTIOMETER

LPI-P

Potentiometer Transmitter

- Field programmable input ranges
- Isolated input to output 2.0kV
- High accuracy
- 40~200mV output test signal
- LED indication of loop current
- Selectable 3 second input damping
- Easy to install
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Reverse polarity protection
- 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

Code	Specifications
LPI-P	Potentiometer to DC Isolating Transmitter, Standard 0~100% Input, Programmable input calibration

Note: Other ranges available on request.

See also the **XU2** and **XJ2 / XJ22** Universal Input Transmitters on page 11 for Potentiometer Input options.

RTD PT100/PT1000

LPN-R-X1

RTD Transmitter

- Field programmable
- RTD Pt100 standard input
- Programmable ranges within -100~600°C
- High accuracy 0.1%
- Linear with temperature
- 40~200mV output test signal
- LED indication of loop current
- Easy to install
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Reverse polarity protection
- One transmitter per enclosure only

Code	Specifications
LPN-R-X1	Single RTD to DC Non-isolating Transmitter, Pt100 0~100°C Input **Note**: Other ranges available on request.

LPI-R

RTD Transmitter

- RTD Pt100 standard input
- Fixed and Programmable ranges within -200~600°C
- Isolated input to output 2.0kV
- Field programmable input ranges (LPI-R-P)
- High accuracy
- Linear with temperature
- 40~200mV output test signal
- LED indication of loop current
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Reverse polarity protection

Code	Specifications
LPI-R-F	RTD Transmitter, Standard 0~100°C Input, Upscale, Fixed Input
LPI-R-F-29-US	RTD Transmitter, -50~50°C Input, Upscale, Fixed Input
LPI-R-F-15-US	RTD Transmitter, 0~150°C Input, Upscale, Fixed Input
LPI-R-F-16-US	RTD Transmitter, 0~200°C Input, Upscale, Fixed Input
LPI-R-P-11-US	RTD Transmitter, 0~100°C Input, Upscale, Programmable Input

Note: Other ranges available on request.

LPN-R-H

RTD In Head Transmitter

- Field programmable
- RTD Pt100 standard input
- Programmable ranges within -100~600°C
- High accuracy 0.1%
- Linear with temperature
- LED indication of loop current
- Easy to install
- Compact industrial head mount enclosure
- Dual mounting holes for 33mm or 40mm
- Available standard or special calibration
- Reverse polarity protection

Code	Specifications
LPN-R-H-100	In Head Transmitter, Pt100 0~100°C Input, Upscale Break
LPN-R-H-150	In Head Transmitter, Pt100 0~150°C Input, Upscale Break
LPN-R-H-200	In Head Transmitter, Pt100 0~200°C Input, Upscale Break
LPN-R-H-050	In Head Transmitter, Pt100 -50~50°C Input, Upscale Break
Accessories	
00352463	Din Rail Mount Foot

Note: Other ranges available on request.

XU2HN

RTD In Head Non-Isolated Transmitter

- Programmable via USB (requires the XU-USB programming key)
- No power supply or calibration required during programming
- Temperature Input Type: RTD Pt100 and Pt1000
- 2 wire 4~20mA Output, loop powered
- Output is Linear with Temperature
- High Accuracy 0.1%
- Compact Industrial Head Mount Enclosure
- Reverse Polarity Protection
- Offset available via XU Software
- Easy to Install

Code	Specifications
XU2HN	In Head Non-Isolated Transmitter, RTD Pt100 Input, Upscale, 4~20mA Output
Accessories	
XU-Spring-Kit	For vibration areas or where wide ambient temperatures exist on the probe head
XU-USB	USB Programming Key (Used to set up different ranges)

THERMOCOUPLE

XU2HI

RTD and Thermocouple In Head Isolated Transmitter

- Programmable via USB (requires the XU-USB programming key)
- No power supply or calibration required during programming
- Temperature Input Types:
  - Thermocouple B, E, J, K, N, R, S, T
  - RTD Pt100 and Pt1000
- Output is Linear with Temperature
- High Accuracy 0.1%
- Compact industrial head mount enclosure
- Reverse polarity protection
- Offset available via XU Software
- Easy to install

Code	Specifications
XU2HI	In Head Isolated Temperature Transmitter, 2 Wire, RTD and Thermocouple Inputs
Accessories	
XU-USB	USB Programming cable (Use to set up different ranges)

LPI-T

Thermocouple Transmitter

- Fixed and programmable input ranges
- LPI-T-F: Fixed ranges within 0~1200°C Type K
- LPI-T-P: Field Programmable ranges within 0~1200°C Type K (On request)
- Output linear with temperature
- Internal cold junction compensation
- Isolated input to output 2.0kV
- High accuracy
- 40~200mV output test signal
- LED indication of loop current
- Easy to install
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Reverse polarity protection

Code	Specifications
LPI-T-F	Thermocouple Transmitter, Standard Type K 0~1200°C, Upscale, Fixed Input

Note: Other ranges available on request.

See also the **XU2** and **XJ2 / XJ22** Universal Input Transmitters on page 11 for Thermocouple Input options.

3 & 4 WIRE TRANSMITTERS

UNIVERSAL INPUT

XU4

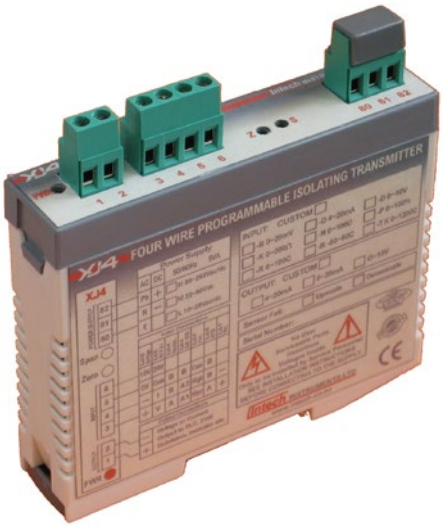
Universal Input Transmitter (Processor)

- 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
- Input types: mV, V, & mA
RTD Pt100 / Pt1000
Thermocouple (T/C)
Potentiometer
- Output types: Current - e.g. 4~20mA
Voltage - e.g. 0~10V

Code	Specifications
XU4	Universal Input Transmitter, 4 Wire, USB Programmable
Accessories	
XU-USB	USB Programming cable (used to set up different ranges)

XJ4

Universal Input Transmitter (Analogue)



- Field programmable Bi-Polar input output ranges
- Input to output isolation 2.0kV
- High accuracy 0.1%
- Universal AC DC power supply:
  85~264Vac/dc or 22~90Vdc selectable.
  10~28Vac/dc optional
- Transmitter power supply (20Vdc) max 30mA
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Input types: Bridge Strain Gauge
  DC: mV, V & mA
  RTD Pt100
  Differential RTD
  Thermocouple (T/C)
  Potentiometer
  Resistance
- Output Types: Current - e.g. 4~20mA / Voltage - e.g. 0~10V

Code	Specifications
XJ4	Single Universal Input Transmitter, 4 Wire
XJ4-LV	Single Universal Input Transmitter, 4 Wire. Low Voltage Power Supply

BRIDGE / STRAIN GAUGE

PI-B

Programmable Isolating Bridge Transmitter

- Field programmable input and output ranges
- Bi-Polar input and output ranges
- Isolated input to output 1.6kV
- High accuracy 0.1%
- Universal AC/DC power supply
- Selectable 3 second input damping
- High Precision 10Vdc bridge power supply
- Compact DIN rail mount enclosure
- Available standard or special calibration
- 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

Code	Specifications
PI-B	Bridge Transmitter, Input 0~20mV, Output 4~20mA, 85~264Vac/dc Power Supply
PI-B-L	Bridge Transmitter, Input 0~20mV, Output 4~20mA, 10~28Vac/dc Power Supply

Note: Other ranges available on request.

See also the **XJ4 Universal Input Transmitter** for bridge / strain gauge input options.

DC SIGNAL

PI-D

Programmable Isolating DC Transmitter

- Field programmable input and output ranges
- Bi-Polar input and output ranges
- Isolated input to output 1.6kV
- High accuracy 0.1%
- Universal AC/DC power supply
- Selectable 3 second input damping
- Transmitter power supply standard
- Compact DIN rail mount enclosure
- Available standard or special calibration
- 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

Code	Specifications
PI-D	DC Transmitter, 4 Wire, Input 4~20mA, 85~264Vac/dc Power Supply
PI-D-L	DC Transmitter, 4 Wire, Input 4~20mA, 10~28Vac/dc Power Supply

Note: Other ranges available on request.

See also the **XU4** and **XJ4** Universal Input Transmitters on page 18 for mV, V & mA Input options.

DC TO FREQUENCY

TWI-FO / TWN-FO

DC to Frequency Transmitters

- PLC interface
- Converts 4~20mA signal into a frequency for direct conversion into a digital input
- Isolated input to output 1.6kV for TWI-FO
- High accuracy
- LED indication of frequency output
- Easy to install
- Compact DIN rail mount enclosure
- Reverse polarity protection
- Externally accessible span and zero adjustments
- Power supply: 11~28Vdc

Code	Specifications
TWI-FO	Isolating DC to Frequency Transmitter Input 4~20mA; Output 10~1010Hz
TWN-FO	Non Isolating DC to Frequency Transmitter Input 4~20mA; Output 10~1010Hz

FREQUENCY TO DC

PI-F

Frequency to DC Isolating Signal Transmitter

- Field programmable input and output ranges
- Bi-Polar output ranges
- Fast response time, allowing accurate control
- Impedance matching on input
- Contact closure selection
- Crystal locked period measurement
- Input to output isolation 1.0kV
- High accuracy 0.1%
- Universal AC/DC power supply
- Compact DIN Rail mount enclosure
- Available standard or special calibration
- 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

Code	Specifications
PI-F	Frequency Transmitter, 4 Wire, Input 0~100Hz, 85~264Vac/dc Power Supply
PI-F-L	Frequency Transmitter, 4 Wire, Input 0~100Hz, 10~28Vdc Power Supply

Note: Other ranges available on request.

FREQUENCY TO FREQUENCY

TWI-FF / TWN-FF

Frequency to Frequency Transmitters

- Frequency I/P divided to a frequency output
- LED indication of frequency output
- Isolated input to output 1.6kV for TWI-FF
- Compact DIN rail mount enclosure
- Reverse polarity protection
- Externally accessible span and zero adjustments
- 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

Code	Specifications
TWI-FF	Isolating Frequency to Frequency Transmitter Divide Factor: 4, Isolating Open Collector
TWN-FF	Non Isolating Frequency to Frequency Transmitter Divide Factor: 4, Non Isolating sink/source output

MATHS FUNCTION

PI-M

Programmable Isolating Maths Function Transmitter

- Field programmable input and output ranges
- 32 Predefined math functions
- 12 Bit resolution (0.025%)
- Isolated input to output 1.6kV
- High accuracy to 0.1%
- Universal AC/DC power supply
- Compact DIN rail mount enclosure
- 120 Point user definable curve fitting
- Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA

Code	Specifications
PI-M	Maths Function Transmitter, Standard Calibration: Input 4~20mA, X+Y, Output 4~20mA, High Voltage Power Supply
Accessories	
PI-RAC	RS232 adapter cable for connecting the PI-M to a computer

Note: Other ranges available on request.

POTENTIOMETER

PI-P

Potentiometer to DC Isolating Transmitter

- Field programmable input and output ranges
- Bi-Polar output ranges
- Isolated input to output 1.6kV
- High accuracy 0.1%
- Universal AC/DC power supply
- Selectable 3 second input damping
- Compact DIN rail mount enclosure
- Available standard or special calibration
- 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

Code	Specifications
PI-P	Potentiometer Transmitter, 4 Wire, Standard Calibration: Input 0~100%, Output 4~20mA, High Voltage Power Supply

Note: Other ranges available on request.

See also the **XU4** and **XJ4** Universal Input Transmitters on page 18 for Potentiometer Input options.

RESISTANCE

PI-K

Resistance to DC Isolating Transmitter

- Field programmable input and output ranges
- Bi-Polar output ranges
- Isolated input to output 1.6kV
- High accuracy 0.1%
- Universal AC/DC power supply
- Compact DIN Rail mount enclosure
- Available standard or special calibration 20mA
- Programmable input ranges from 0~10 ohms to 20k ohms
- Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA

Code	Specifications
PI-K	Resistance Transmitter, 4 Wire, Standard Calibration: Input 0~1kΩ Output 4~20mA, High Voltage Power Supply

Note: Other ranges available on request.

See also the **XJ4** Universal Input Transmitters on page 19 for Resistance Input options.

RTD PT100/PT1000

PI-R

RTD Pt100 to DC Isolating Transmitter

- Field programmable input and output ranges
- Bi-Polar input and output ranges
- Isolated input to output 1.6kV
- Linear with temperature
- High Aacuracy & linearity 0.1%
- Universal AC/DC power supply
- Compact DIN rail mount enclosure
- Available standard or special calibration
- Programmable ranges within -200~500°C
- Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA

Code	Specifications
PI-R	RTD Transmitter, 4 Wire, Input 0~100°C, High Voltage Power Supply

Note: Other ranges available on request.

See also the **XU4** and **XJ4** Universal Input Transmitters on page 18 for RTD Input options.

SET POINT ALARM

PI-S

Programmable Isolating Dual Set Point Alarm Unit

- Field programmable input ranges
- Isolated input to output 1.6kV
- High accuracy
- Universal AC/DC power supply
- 0~100% alarm set point range
- Dual relay or SSR drive outputs
- LED indication of relay status
- N.O. N.C. selectable contacts
- 0.2~30sec adjustable delay
- High, low, window & differential selectable alarms
- Programmable input ranges within 0 to 10V and, 0 to 50mA
- Programmable output ranges from 0~500mV to ±12V, 0~1mA to ±20mA

Code	Specifications
PI-S	Set Point Alarm Transmitter, High Voltage Power Supply
PI-S-L	Set Point Alarm Transmitter, 10~28Vac/dc Power Supply

Note: Other ranges available on request.

THERMOCOUPLE

See the **XU4** and **XJ4** Universal Input Transmitters on page 18 for Thermocouple Input options.

ISOLATORS

XID-L

Loop Powered Isolators

- Isolating 4~20mA input to 4~20mA output transmitter
- Input to output isolation 2.5KV
- Input resistance 250Ω
- High accuracy 0.03%
- Reverse polarity protected
- Compact DIN rail mount enclosure
- Available with 1, 2 or 4 transmitters per enclosure

Code	Specifications
XID-L1	Loop Powered Isolator - 1 Loop per Enclosure
XID-L2	Loop Powered Isolator - 2 Loops per Enclosure
XID-L4	Loop Powered Isolator - 4 Loops per Enclosure

XI-L

Loop Powered Isolators

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

Code	Specifications
XI-L1	Loop Powered Isolator - 1 Unit per Enclosure
XI-L2	Loop Powered Isolator - 2 Units per Enclosure
XI-L4	Loop Powered Isolator - 4 Units per Enclosure

XI-P

Input Powered Isolators

- No power supply needed – input powers transmitter
- Ideal for isolating a typical 4~20mA loop
- Also good for line filtering at the receiving end of line
- Input to output isolation 1kV
- High accuracy
- Reverse polarity protected
- Compact DIN rail mount enclosure
- Available with 1, 2 or 4 transmitters per enclosure

Code	Specifications
XI-P1	Input Powered Isolator - 1 Channel
XI-P2	Input Powered Isolator - 2 Channels
XI-P4	Input Powered Isolator - 4 Channels

XID-P1

24Vdc Powered Isolator

- Ideal for isolating a typical 4~20mA current loop
- Device power supply powers the output loop
- Input to output isolation 2.5KV
- High accuracy 0.03%
- Reverse polarity protected
- Compact DIN rail mount enclosure
- Easy to install

Code	Specifications
XID-P1	24Vdc Input Powered Isolator - Single Channel

SIGNAL GENERATORS

IN-GEN

Multi-functional Signal Generator

Features

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

Code	Specifications
IN-GEN	Hand Held Signal Generator

MISCELLANEOUS SIGNAL INSTRUMENTATION

LPN-OVP

Over Voltage (Lightning) Protection

- Overvoltage protection unit for instrument signals
- Used extensively for lightning protection
- Two stage protection:
  Gas discharge tubes provide the first stage
  Transient voltage suppressors provide the second stage
- Leakage current: 10µA at 24Vdc
- Transient cut-off voltage: 33Vdc
- Added line resistance: 25 ohms total for the loop (12.5 ohms per side)

Code	Specifications
LPN-OVP	Overload Protection Unit, Standard DIN Rail mount

IN-LF

Line Filter

Designed as an economical and reliable protection against high-voltage transients and surges, and other electrical noise, produced for example by lightning, switching and electrical noise on AC or DC power lines.

- Reactive 230Vac, 3A Maximum Line Filter
- Reliable protection against high-voltage transients and surges
- Output: Max. load 3 amps

Code	Specifications
IN-LF	Line Filter, Input 210~250Vac

INSTRUMENT POWER SUPPLIES

PSW-2

Adjustable Output Voltage, 200mA Instrument Power Supply

- Output adjustable from 5~30Vdc
- 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
- Special calibrations available

Code	Specifications
PSW-2-10-H	High Voltage Power Supply 100~264Vac/dc, Output Voltage 10Vdc
PSW-2-12-H	High Voltage Power Supply 100~264Vac/dc, Output Voltage 12Vdc
PSW-2-24-H	High Voltage Power Supply 100~264Vac/dc, Output Voltage 24Vdc
PSW-2-24-LV	Low Voltage Power Supply 12~28Vac / 10~30Vdc, Output Voltage 24Vdc

PSW-10

Adjustable Output Voltage, 1A Instrument Power Supply

- Output adjustable from 5~30Vdc
- 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
- 12Vdc & 24Vdc output standard. Special calibrations available.

Code	Specifications
PSW-10-12	High Voltage Power Supply 100~264Vac/dc, Output Voltage 12Vdc
PSW-10-24	High Voltage Power Supply 100~264Vac/dc, Output Voltage 24Vdc

PSW-10-F

24Vdc, 1.0A Instrument Power Supply

- Power supply 24Vdc
- Output current of 1.0A
- DC output OK signal
- Mains input 100~264Vac
- 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

Code	Specifications
PSW-10-F	Instrument Power Supply, Output Voltage 24Vdc, 1.0A

PROCESS DISPLAYS

IN-uP4

Universal Input Indicator

- Universal Input Panel Mount Indicator (Voltage, Current, Thermocouple, RTD/NTC, Pulse/Frequency, Potentiometer)
- 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), and one 4~20mA Analogue Output
- Universal Power Supply of 24~250Vac / 19.5~250Vdc
- Sensor Power Supply (22Vdc 50mA max)
- Dimensions: H=48mm, W=95mm, D=84mm
- IP65

Code	Specifications
IN-uP4	Universal Input Indicator, panel mount with no outputs
IN-uP4X	Universal Input Indicator, panel mount with 2 x Relay Outputs (with two set point indicator LED's) and 1 x Analogue Output 4~20mA
Accessories	
XU-USB	USB Programming Key for programming the IN-uP4 using **uP Configure Programming Software**, free to download from our website.

uP4-Din

Universal Input Indicator

- Universal Input with Indication (Voltage, Current, Thermocouple, RTD/NTC, Pulse/Frequency, Potentiometer)
- DIN Rail mount
- Universal AC or DC supply 24~250Vac / 19.5~250Vdc
- Two Relay Outputs (with Setpoint LEDs)
- Option to add one Retrans Analogue Output (4~20mA or 0~10Vdc selectable)
- Programmable via USB Port using uP Configure Programming Software (version 1.5.23 or later) and the XU-USB (Rev 1) key
- Simple setup and calibration
- 4 digit LED display with transparent cover
- Sensor power supply (22Vdc, 25mA max)
- Dimensions: H=112mm, W=23mm, D=120mm

Code	Specifications
uP4-Din-R2	Universal Input Indicator, Din-Rail, complete with 2 x Relay Outputs
uP4-Din-R2A	Universal Input Indicator, Din-Rail, complete with 2 x Relay Outputs and 1 x Analogue Output (4~20mA or 0~10Vdc selectable)
Accessories	
XU-USB	USB Programming Key for programming the uP4-DIN using **uP Configure Programming Software**, free to download from our website.

IN-P

Multifunction Process Indicator

- Multiple Input Types
- 6 Digit LED Display
- Simple setup and calibration
- On screen step by step instructions
- 5 Buttons for easy operator interface
- Option to add up to 6 Relay Outputs
- Analogue Output Retransmission option
- Serial RS485/RS232 port option with Modbus RTU
- Ethernet port option with Modbus TCP
- Wide Range of Power Supply options from 10V to 265V
- Multiple functions available for customising to your application

Code	Specifications
IN-P	Multifunction Process Indicator, mA, V, RTD, T/C. Standard either 1 x 4~20mA, 0~10V input + 24V Excitation or 1 x RTD Pt100 Input or 1 x Thermocouple B, J, K, N, R, S, T Input
Options	
Extra Inputs	4 Inputs of either 4~20mA, 0~10V, RTD Pt100 or Thermocouple
R2	2 x 5A Relay Outputs
R4	4 x 5A Relay Outputs
A	Analogue Output Retransmission: 4~20mA or 0~10V
WS232 / WS485	Serial port RS232 or RS485: Includes Modbus RTU
LV	Low Voltage Power Supply: 15~48Vac / 10~72Vdc

IN-R

Large Display Tachometer Indicator

- Large 4 Digit LED Display
- Microprocessor Based for Wide Range Calibration
- Inputs: 0~30V, magnetic pickup, NPN, PNP, TTL, Namur
- 2 or 4 relay option – 4 set points with delay
- 4 LED's for Alarm indication
- Analogue Output Retransmission option
- Simple setup and calibration
- On Screen Step by Step Instructions
- 5 Buttons for easy Operator Interface
- Wide Range of Power Supply options from 10V to 265V
- Excitation supply 24Vdc

Code	Specifications
IN-R	Tachometer Indicator, No Relay Outputs, 85~265Vac / 95~370Vdc Power supply
Options	
R2	2 x 5A Relay Outputs
R4	4 x 5A Relay Outputs
A	Analogue Output Retransmission: 4~20mA or 0~10V
LV	Low Voltage Power Supply: 15~48Vac / 10~72Vdc

IN-RT

Flow Rate Indicator With Totaliser

- 6 Digit LED Display
- Inputs: 0~30V, magnetic pickup, NPN, PNP, TTL, Namur
- 2 or 4 relay option – 4 set points with delay
- Analogue Output Retransmission option
- Serial RS485/RS232 port option with Modbus RTU
- Simple setup and calibration
- On screen step by step instructions
- 5 Buttons for easy operator interface
- Wide Rage of Power Supply options from 10V to 265V

Code	Specifications
IN-RT	Flow Rate Indicator + Totaliser; 85~265Vac / 95~370Vdc Power supply

IN-RTB

Flow Rate and Batching Controller

- Dual 6 digit LED displays
- View flow rate & total simultaneously
- Inputs: 0~30V, magnetic pickup, NPN, PNP, TTL, Namur
- 2 or 4 relay option – 4 set points with delay
- Analogue output retransmission option
- Serial RS485/RS232 port option with Modbus RTU
- Simple setup and calibration
- On screen step by step instructions
- 5 buttons for easy operator interface
- Wide range of power supply options from 10V to 265V

Code	Specifications
IN-RTB	Flow Rate and Batching Controller, 85~265Vac / 95~370Vdc

LOOP POWERED DISPLAYS / INDICATORS

LPI-LCD-6

4~20mA Panel Display. Loop Powered.

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.

Features:

- Easy installation (front mounting unit takes up virtually no space behind the panel).
- Loop powered display backlight.
- Protection against reverse wiring and accidental 24V supply.
- Easy calibration via on-screen menu.

Code	Specifications
LPI-LCD-6	One 4~20mA Loop Powered Input Panel Mount Display.

2400 SERIES

2400-A16

Remote Station / Intelligent Multiplexer / Remote I/O

- 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)
- Input expansion, up to four 16 input 2100-M units
- Output expansion, up to two 16 relay 2400-R2 units
- Modbus RTU, Modbus TCP protocols standard
- Channel selection: 'binary' or 'clock/reset'
- 0.1% accuracy
- DIN rail mount

This station has all the friendly features of a monitoring station. The Isolated Universal Analogue Inputs are software programmable using the user friendly MicroScan SCADA (Version 5.1 or later), or Station Programmer software.

Each input can be configured for any of the following inputs: RTD Pt100/Pt1000, Thermocouple, mA, mV, V & Pulse/Digital. There is a convenient wide choice of spans plus Custom spans can be configured also. The accuracy does not alter when changing spans.

The analogue inputs on the 2400-A16 can be expanded up to 76 using the 2100-M Input Multiplexers.

PLC

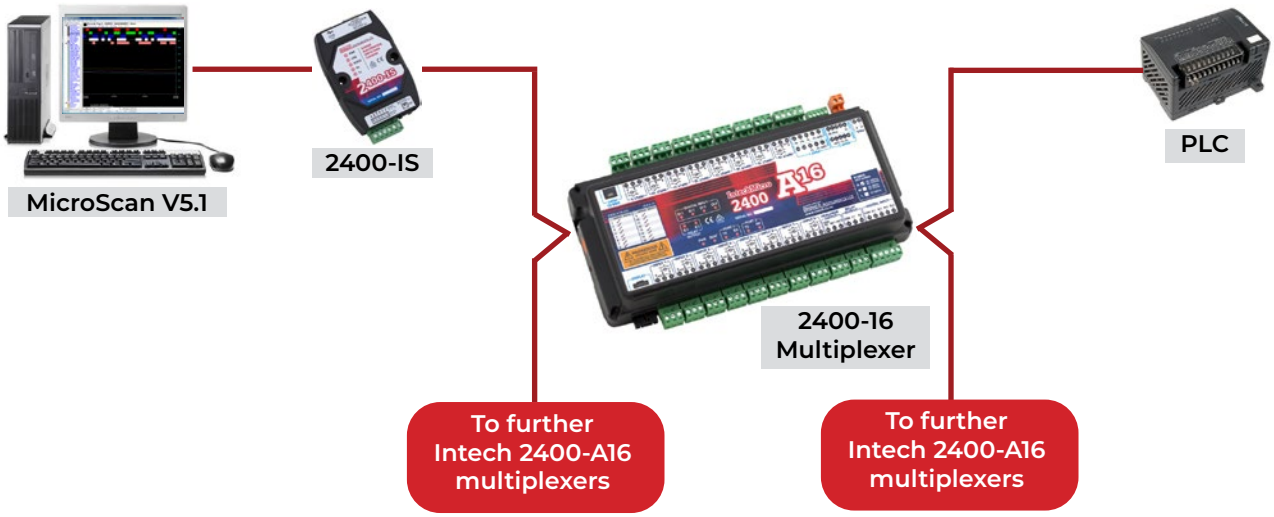
PLC Connection options:
- Modbus RTU/TCP, or
- Clock/Reset, or
- Binary Channel selection

2400-A16
Intelligent
Multiplexer

Code	Specifications
2400-A16-I16-485-H	16 Inputs, RS422/RS485 Comms, 85~265Vac, 95~370Vdc Power Supply
2400-A16-I16-485-M	16 Inputs, RS422/RS485 Comms, 24~48Vac, 17~72Vdc Power Supply
2400-A16-I16-485-L	16 Inputs, RS422/RS485 Comms, 10~30Vdc Power Supply
2400-A16-I16-NET-H	16 Inputs, Ethernet TCP/IP Comms, 85~265Vac, 95~370Vdc Power Supply
2400-A16-I16-NET-M	16 Inputs, Ethernet TCP/IP Comms, 24~48Vac, 17~72Vdc Power Supply
2400-A16-I16-NET-L	16 Inputs, Ethernet TCP/IP Comms, 10~30Vdc Power Supply
2400-A16-I8-485-H	8 Inputs, RS422/RS485 Comms, 85~265Vac, 95~370Vdc Power Supply
2400-A16-I8-485-L	8 Inputs, RS422/RS485 Comms, 10~30Vdc Power Supply
2400-A16-I8-NET-H	8 Inputs, Ethernet TCP/IP Comms, 85~265Vac, 95~370Vdc Power Supply
Accessories	
XU-USB	USB Programming Key for programming the **2400-A16**. 2400-A16-NET: The XPort® Ethernet converter must be programmed via the Ethernet TCP/IP port.

MicroScan Integration example

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



2400-R2

Relay Expansion Unit for the 2400-A16

- 16 Digital, Isolated, Relay Outputs
- Cascade option for a second 2400-R2
- Expandable to 32 outputs with another 2400-R2
- Cost Effective Output Expansion for the 2400-A16
- Easy Programming Via MicroScan
- Programmable Relay States – NO or NC
- 24Vdc, 10VA Power Supply
- Compact DIN rail mount enclosure
- Easy to install

Code	Specifications
2400-R2	16 Relays Output Expander, 24Vdc ±15%, 10VA Power Supply
Option	
PSW-10-F	Instrument Quality 24Vdc power supply for the 2400-R2

2300 SERIES

2300 Series

Intech Micro 2300 Series I/O Remote Stations & PLC

- 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

Code	Specifications
2300-A8II	**8 Isolated Current Inputs - I/O Remote Station** 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.
2300-A8VI	**8 Isolated Voltage Inputs - I/O Remote Station** 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.
2300-Tc8	**8 Channel Thermocouple Inputs - I/O Remote Station** 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.
2300-RTD6	**6 Channel RTD Inputs - I/O Remote Station** 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.
2300-MULTI	**Mixed Inputs and Outputs - I/O Remote Station** 2 x RTD inputs (Pt100, Pt1000, Ni120, Ni1000); 2 x 0(4)~20mA inputs OR 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.
2300-D16	**16 Channel Digital Inputs - I/O Remote Station** Input voltage: 12~24Vdc / 1.5KV isolation between inputs and power supply and comms (RS485) / Power Supply = 24Vdc @ 30mA typical.
2300-RO4	**4 Channel Relay Outputs - I/O Remote Station** 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.
2300-AO8I	**8 Current Outputs - I/O Remote Station** 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.
Option	
PSW-10-F	24Vdc Instrument Quality Power Supply

2100 SERIES

2100-A16

Analogue Input Remote Station / PLC Multiplexer

- Each input is user selectable in MicroScan software to any of the following: 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

Code	Specifications
2100-A16	Analogue Input Remote Station / PLC Multiplexer, RS485 Comms, 85~264Vac/dc Power Supply
2100-A16-NET	Analogue Input Remote Station / PLC Multiplexer, Ethernet Comms, 85~264Vac/dc Power Supply

2100-M

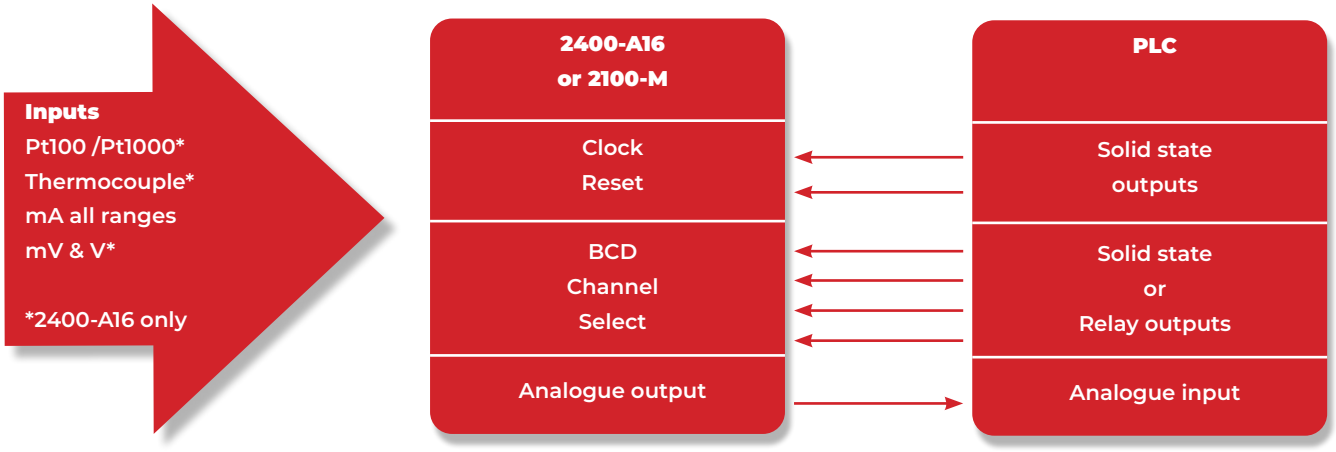
Analogue Input Remote Station / PLC Multiplexer

- 16 Channel Multiplexer
- Field Programmable Inputs
- Field Programmable Output
- Input Types Available:
- RTD Pt100 (-200~600°C) / (-330~1100°F)
- MilliAmp (4~20 / 0~20mA)
- Clock/Reset Channel Selection, or Binary Channel Selection
- Universal power supply: 85~264Vac/dc (Standard) / 23~90Vdc Field selectable.
- High Accuracy 0.1%
- Compact DIN rail mount enclosure
- Easy to install
- Solid State Switches for reliability

Code	Specifications
2100-M-R	Analogue Input Multiplexer, RTD Input Range, 4~20mA Output, Clock/Reset, Upscale, 85~264Vac/dc Power Supply
2100-M-I	Analogue Input Multiplexer, Milli-Amp Input Range, 4~20mA Output, Clock/Reset, Upscale, 85~264Vac/dc Power Supply

Modbus protocols **are NOT** available with the 2100-M.
If you require a multiplexer with Modbus Protocols please view the 2400-A16 on page 31.

Channel select by PLC is the same for both multiplexers:



2100-D

Digital Input/Output Remote Station

- RS422/RS485 up to 1200m
- Selectable Baud Rates
- Digital Inputs:
  – State or Count
  – Speeds to 500Hz
- Easy Programming via MicroScan Maps
- Programmable Station Number
- Scaled Rate Value via MicroScan Recorder
- Scaled Totaliser Value via MicroScan Recorder
- Programmable Relay States – NO or NC
- Comms Failure Time-out using Relay 12
- Comms TXE and TX delay programming
- Programming information retained on power down
- Universal AC/DC Power Supply
- Compact DIN rail mount enclosure

Code	Specifications
2100-D	12 Digital Inputs and 12 Digital Outputs, RS485 Comms, 85~264Vac/dc Power Supply

2100-R2

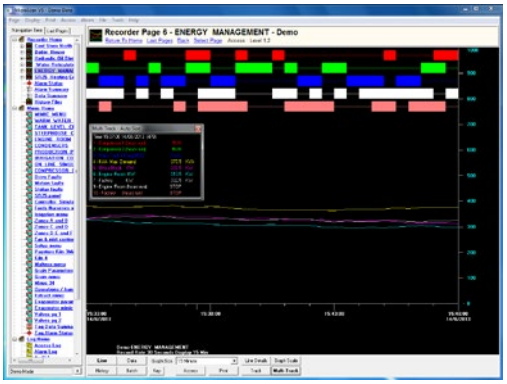
Relay Expansion Unit for 2100-A16

- 16 Digital, Isolated, Relay Outputs
- Cascade option for a second 2100-R2 [with 2100-A16 (rev 1.3) only]
- Enables 32 Digital, Isolated, Relay Outputs
- Cost Effective Output Expansion for 2100-A16
- Easy Programming via MicroScan Maps
- Programmable Relay States – NO or NC
- Universal AC/DC Power Supply
- Easy to install
- Compact DIN rail mount enclosure

Code	Specifications
2100-R2	Relay Output Expansion Unit, 85~264Vac/dc Power Supply

MicroScan SCADA

Data Logging and SCADA Software

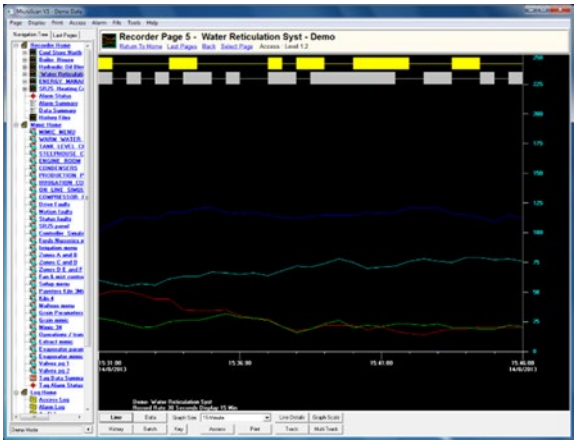


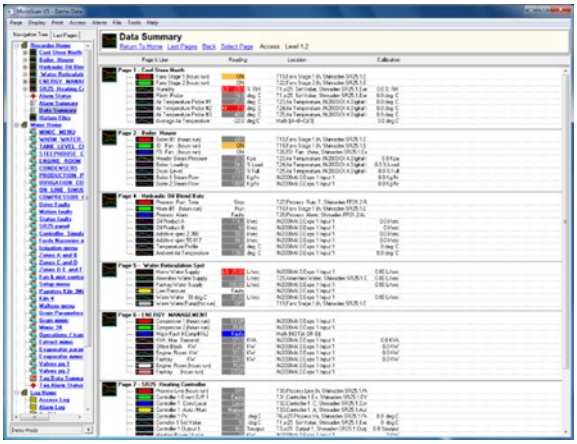
- Real Time Trends
- Data Screens
- Live mimic screens (MMI)
- History and Search Screens
- Totalising in engineering units
- Alarms and Events
- Mobile Alarm and SMS Text Messaging via Eze Controllers
- Mathematical blocks
- ISO 9000 support
- Operator logs
- Auto and manual printouts
- Cost effective field interface hardware
- Intech remote stations and PLC support
- Up to 64 stations

Code	Specifications
MicroScan Software "Recorder Packages" - Comes complete with USB Dongle	
R8	MicroScan Recorder, 8 inputs, 8 outputs
R16	MicroScan Recorder, 16 inputs, 16 outputs
R32	MicroScan Recorder, 32 inputs, 32 outputs
R50	MicroScan Recorder, 50 inputs, 160 outputs
R100	MicroScan Recorder, 100 inputs, 160 outputs
R200	MicroScan Recorder, 200 inputs, 160 outputs
R300	MicroScan Recorder, 300 inputs, 160 outputs
R400	MicroScan Recorder, 400 inputs, 160 outputs
R600	MicroScan Recorder, 600 inputs, 160 outputs
R800	MicroScan Recorder, 800 inputs, 160 outputs
R1000	MicroScan Recorder, 1000 inputs, 160 outputs Note: 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	
T50	MicroScan Tag package, 50 tags
T75	MicroScan Tag package, 75 tags
T150	MicroScan Tag package, 150 tags
T300	MicroScan Tag package, 300 tags
T500	MicroScan Tag package, 500 tags
T750	MicroScan Tag package, 750 tags
T5000	MicroScan Tag package, 5000 tags Note: <Maximum Tags = 5000 (max I/O = 5000)
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

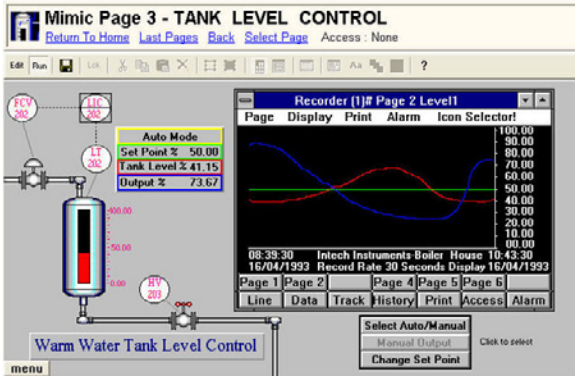
Code	Specifications
Optional Software Modules	
TB+	MicroScan Tool Box Data transfer, mathematical formulas, time clocks, step controller, recipes, data base and remote editor
PLC	PLC Interface – specify PLC make and model to confirm
Network Drivers:	
P1	Active PC will support 1 Passive PC
P2	Active PC will support 2 Passive PC's
P3	Active PC will support 3 Passive PC's
P4	Active PC will support 4 Passive PC's
P5	Active PC will support 5 Passive PC's
P6+	Active PC will support 6 Passive PC's
V4 to V5	**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
Package-Upgrade	**Moving to a larger package and/or modules combination** Price is the dollar difference between packages plus a new Dongle or License Key. Also if increasing modules.
USB Dongle	**USB Dongle, Includes license key** Notes: Old Sentinel-C dongles are now redundant and must be returned to Intech Software Locking is NOT available!
License	**New MicroScan License Key** Charge for issuing new license key (License only, no dongle)

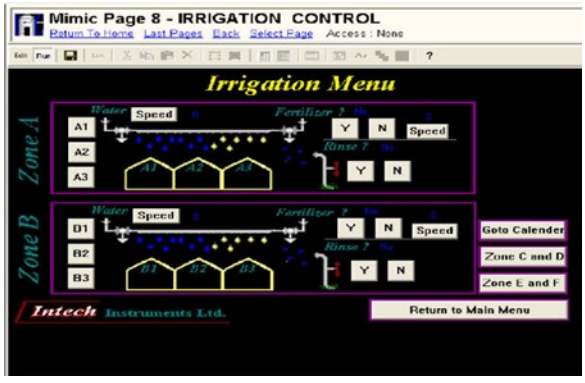
See also the **Z-2400 Series – MicroScan Wireless Data Links - ZigBee®** on page 46.



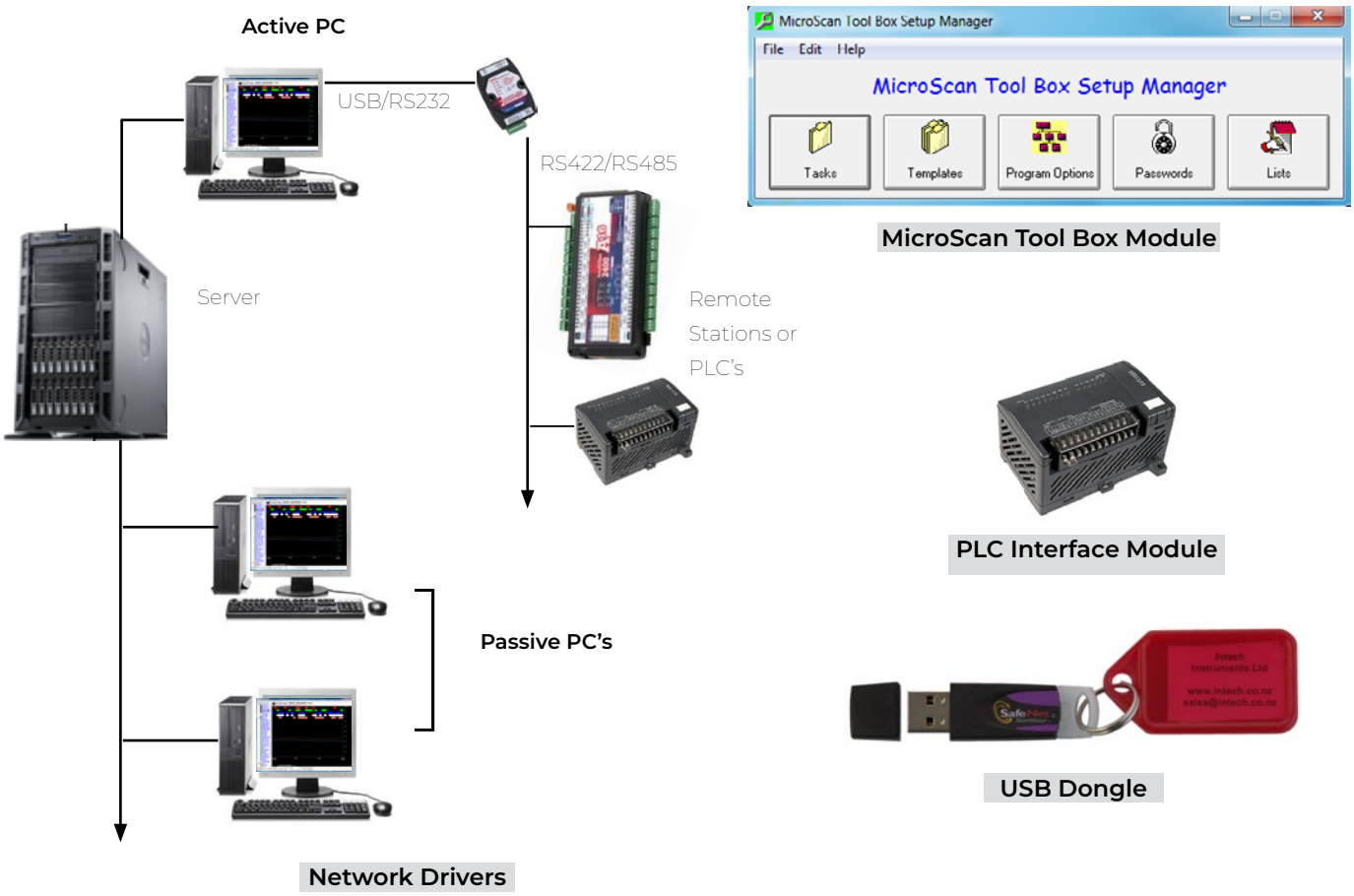


Recorder Module





Mimic Module

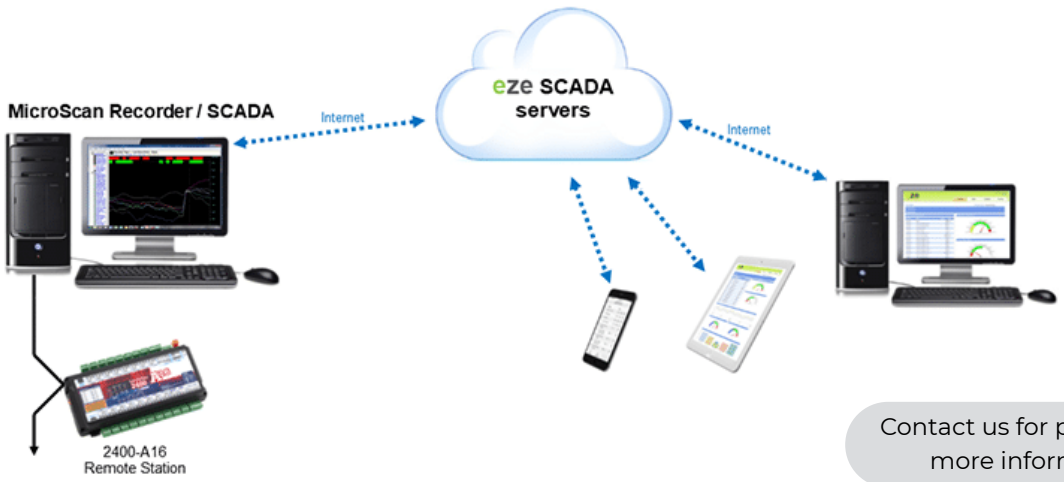


MicroScan Cloud

MicroScan SCADA and Cloud Based Monitoring System

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.



Contact us for pricing and more information

COMMUNICATION CONVERTERS

2400-IS

Isolated Auto-Detecting USB/RS232 to RS485/422/232 Converter

- The 2400-IS converts and Isolates USB/RS232 from a computer to RS485/422/232 (Auto-Detecting) for communication to data highway stations
- Complete with USB cable (length = 1m) & RS232 cable (length = 2m)
- 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

Code	Specifications
2400-IS	Isolated Auto-Detecting USB/RS232 to RS485/RS422/RS232 Converter

2100-IS-USB

Isolating USB to RS422/RS485 Converter

- The 2100-IS-USB converts and isolates USB from a computer to RS485 or RS422 for communication to data high-way stations
- Desktop module, complete with serial cable and power cord
- Audible and relay alarms for communication failure with selectable alarm time delays
- Radio modem compatible
- Comms baud rate: 9600 (default): 19200, 4800 (optional)
- Relay output: 1 relay, change over. Rating, 1 amp, 24Vdc
- Power supply: 9V plug pack (supplied with 2100-IS-USB)
- With built-in watchdog comms fail alarm

Code	Specifications
2100-IS-USB	Isolating USB to RS422/RS485 Converter

2100-NET

Isolated Auto-Detecting USB/RS232 to RS485/422/232 Converter

- 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
- Comms baud rate: RS485/422/232 (Software Selectable) 19200, 9600, 4800
- Power supply: 85~264Vac/dc: 50/60Hz: 10VA, or 23~90Vdc: 10VA (selectable)

Note: The 2100-NET is used with the **2400/2100 series** I/O Remote Stations and Shimaden Controllers when connecting via Ethernet TCP/IP

Code	Specifications
2100-NET	Ethernet TCP/IP to serial Isolating Converter

2300-NET

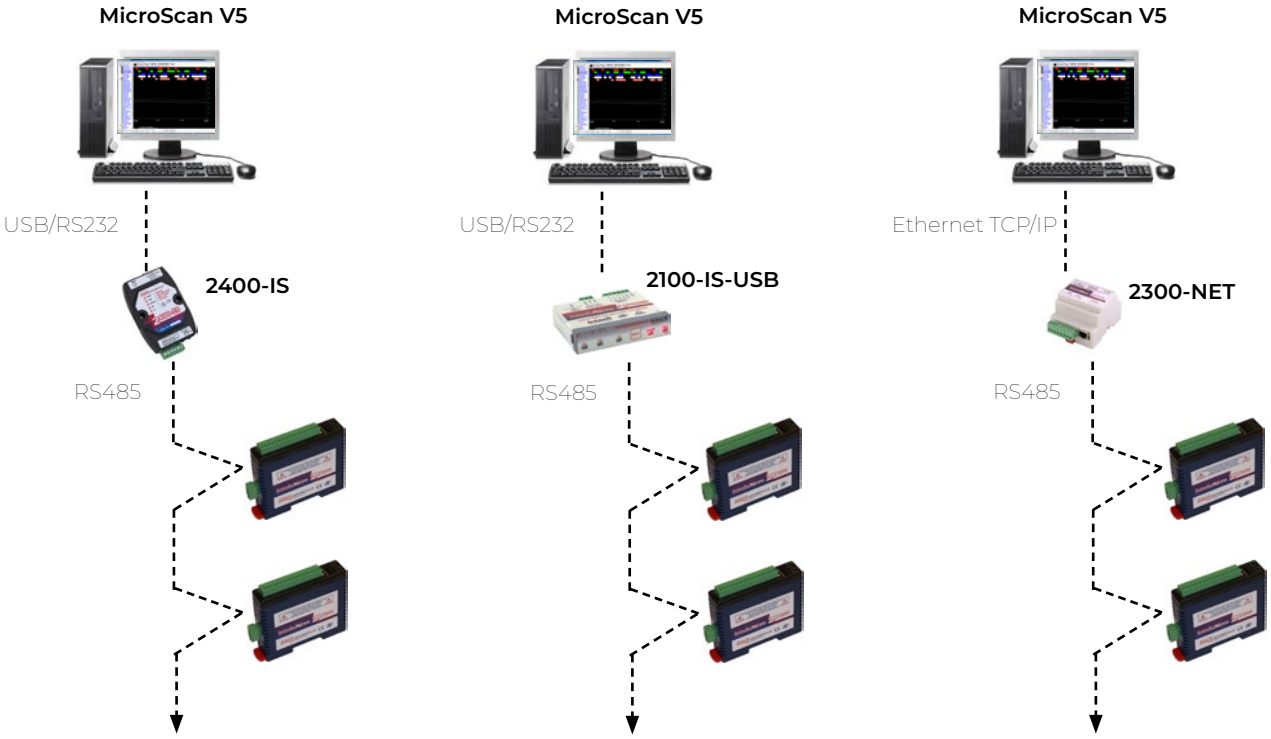
Ethernet TCP/IP to RS485 Isolating Converter

- The 2300-NET converts Ethernet TCP/IP to RS485 for communication to the 2300-XX series stations
- Comms baud rate: 9600
- Power supply: 24Vdc
- Modbus TCP to Modbus RTU Protocol
- Compact DIN rail mount enclosure

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 39)

Code	Specifications
2300-NET	Ethernet TCP/IP to RS485 Isolating Converter

Examples of connectivity - RS485 data Hi-way - Intech Micro 2300 Series



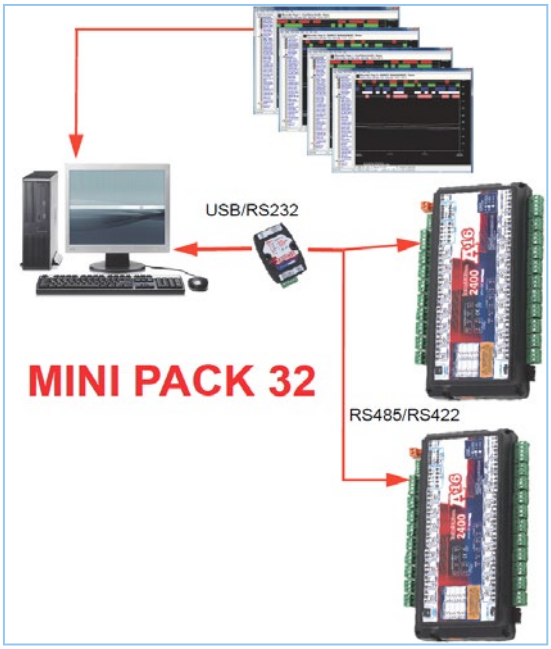
Important: The 2300-XX stations cannot share a data hi-way with the 2400-XX / 2100-XX stations and/or Shimaden Controllers

Mini Packs

Convenient Hardware and Software Packages

Code	Specifications
Minipack-8-1	MINI PACK 8: 1 x MicroScan V5 Recorder R8 1 x 2400-IS Comms Converter 1 x 2300-RTD6 RTD Remote Station 1 x PSW-10-F Power Supply
Minipack-8-2	MINI PACK 8 1 x MicroScan V5 Recorder R8 1 x 2400-IS Comms Converter 1 x 2300 Remote Station (specify) 1 x PSW-10-F Power Supply

Code	Specifications
Minipack-16	MINI PACK 16 1 x MicroScan V5 Recorder R16 1 x 2400-IS Comms Converter 1 x 2400-A16-I16 Remote Station



Code	Specifications
Minipack-32	MINI PACK 32 1 x MicroScan V5 Recorder R32 1 x 2400-IS Comms Converter 2 x 2400-A16-I16 Remote Stations

Intech Micro I/O Stations - Schematic Layout

SOFTWARE
- Windows
- MicroScan SCADA
- MA5 Mobile Alarming

Networking to other computers

Ethernet TCP/IP Network to 2400-A16-NET etc

PLC data highway

Total stations all up = 400

PLC Station

2400-IS

Z-2400 ZigBee® and eze System compatible

2400-A16
Remote Station

PLC Units that communicate with MicroScan

Windows32/64 (x86/x64)
Modbus RTU/TCP
Omron C series
Image Interface 32
OPC Client (requires OPC server - purchased separately)

Windows32 (x86) only
Allan Bradley
Fuji NJ series
Mitsubishi A series
Toshiba
Siemens RK512
Modbus ASCII
Image Interface
Any PLC units with DDE servers

2100-M
Multiplexer

Intech / Shimaden data highway

2100-M
Multiplexer
A maximum of 4 multiplexers to each 2400-A16

2400-A16
Programmable Intelligent Multiplexer

Optional tandem connection

2400-R2
16 relay outputs

2400-R2
16 relay outputs

Z-2400 ZigBee® and eze System compatible

2100-A16
Remote Station

2100-M
Multiplexer
A maximum of 4 multiplexers to each 2100-A16

2100-D
Remote station
12 digital inputs
12 relay outputs

2100-R2
16 relay outputs

Shimaden Controllers Digital Displays

2100-R2
16 relay outputs

Notes:
- RS485/422 = max 100 stations per data highway.
- Ethernet TCP/IP = max 400 stations.

A RS485 or RS422 data highway transmission distance of 1200 metres is typical before a booster unit is required

CLOUD BASED MONITORING

Eze System

Cloud Based Monitoring System

- Four onboard inputs per ezeio controller
- Expansion options for up to 40 inputs per ezeio controller
- Input types: 0~10Vdc, 0~5Vdc, 4~20mA, Resistive or Pulse
- 2 relay outputs, for control or alarm functions
- 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. GSM/M2M optional
- Alarms: Text messages (SMS) / Voice messages / E-mail / 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 and low cost

ezeio-STD

ezeio-GSM

Service Options

5 Inputs are logged	15 Inputs are logged	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

Available for 6 Months, 1 Year, 3 Year and Lifetime options.

Code	Specifications
Ezeio STD	Ezeio Controller c/w Ethernet. ** Comes with a limited, free service period
Ezeio GSM-S	Ezeio Controller GSM/3G (850MHz) +RF - M2M
Eze M2M	M2M SIM card and 12 month M2M Plan for GSM eze
Eze M2M-Data	Ongoing Data costs per year on M2M card
Eze Cable-485	Eze Cable RS485 (1m), if using ezeio with an Intech Remote Station
Eze Fee	EZE Setup Fee for 8 Inputs or less
Eze Fee +	EZE Setup Fee for more than 8 Inputs
Support	Pre-commission and Remote/Onsite Commissioning/Support (per hour). (Plus travel and accommodation where applicable)

ezeio® mkII Hardware, Cloud Software and User Interface

Monitor, control, automate and consolidate any type of remote industrial devices, equipment & systems. From connecting sensors to automating applications.

ezeio-mkII

Combining all hardware & firmware components needed for making IoT work. 100% remotely managed, configured & synchronized. The 5-in-1 hardware controller:

- Input/Output Unit
- Data Logger
- Modem (LTE Cat M1) & Gateway
- PLC (edge processing)
- 8 configurable inputs on board, plus external expansion using the 2400-A16 plus the 2300 series.

The ezeio® Cloud is a highly optimized solution for the automated synchronization of the entire deployed ezeio® Hardware units. It's the core architecture which make the system highly secure, fully redundant and greatly scalable from one user with a single ezeio® to enterprise level deployments with thousands of field devices and users.

The eze.io User Interface is the single hub for all of the users technical and managerial needs. Any number of ezeio® Hardware units can be accessed by as many users as needed.

- Account Management
- Configuration Management
- Scripting Editor
- Live status
- Dashboards
- Alarms & Notifications
- Timers & Schedules
- Mapping & Geofencing

Code	Specifications
Ezeio mkII KIT	Ezeio mkII Controller Kit complete with antenna, bracket and wall adapter
Activation Cost:	
Pre-setup	Pre-configuration set up for either service below:
STANDARD	Initial setup, Includes 1000 SMS, 1 years Subscription and 10 min logging frequency *
STANDARD + I/O Expansion	Initial setup, includes 1000 SMS, 1 years Subscription, I/O Expansion Driver package (when being used with our 2400-A16 or 2300 series) and 10 min logging frequency*
Add on Options:	
API	1 million, no expiry (Shared across all controllers on the account)
SMS	Extra 1000 SMS, if customer runs out of SMS within the year. The SMS do not expire (Shared across all controllers on the account).
Subscription	Yearly subscription per controller
Support	Pre-commission and Remote/Onsite Commissioning/Support (per hour). (Plus travel and accommodation where applicable)

WIRELESS ANALOGUE BRIDGE TRANSMITTERS

Z-2400-A2 Series

Wireless Data Links using ZigBee® for Analogue and Digital Interface

Ideal for wireless monitoring and/or remote control solutions.

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.

Features

- Communicates analogue and digital signals via a wireless link
- No computer required (once units are programmed)
- Multiple repeater units can be added to extend the wireless range

The XU-USB is required for programming the Z-2400-A2 series using **uP configure** Programming Software.

XU-USB

The Z-2400-A2I can also be used with the **Z-2400 Series** as part of a MicroScan SCADA Wireless system. See page 36.

Code	Specifications
Z-2400-A2IO KIT	**Wireless Input/Output Pair Kit** 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.
Z-2400-A2I	**Wireless Analogue/Pulse Input Unit (P2P Mode)** 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: • 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.
Z-2400-A2O	**Wireless Analogue/Pulse Output Unit (P2P Mode)** The Z-2400-A2O is a 2 channel analogue output wireless node. It acts as the base. 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.
Z-2400-A2R	**Repeater Unit for Wireless Expansion** 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.
XU-USB	USB Programming key
PSW-10-F	Instrument Power Supply, Output Voltage: 24Vdc, 1.0A

Z-2400 Series

MicroScan Wireless Data Links - ZigBee®

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.

Features

- Integrated with ZigBee® technology to form a mesh network
  between all Z-2400 nodes
- Communicates data signals via a wireless network
- Secure networking
- Low power consumption

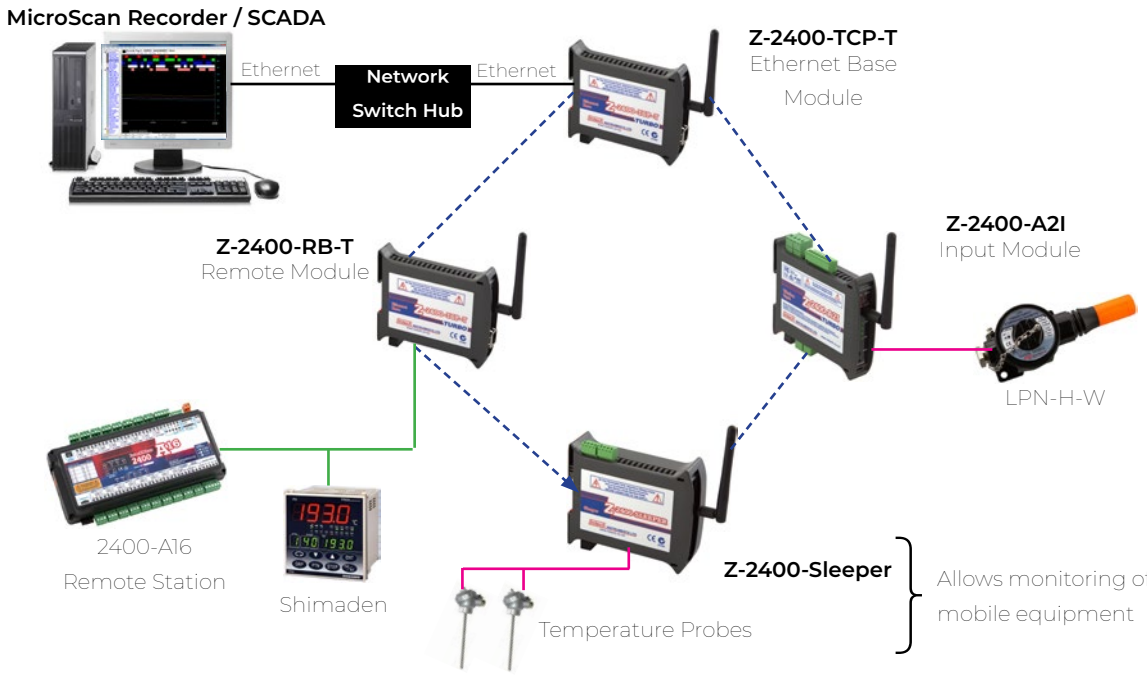
Common Specifications:

- Wireless standard: IEEE 802.15.4-2006
- Wireless range: 100m typical line of sight with included whip
- Wireless Frequency: 2405~2485MHz
- Frequency Hopping: 15 Channels
- Power supply: 9~36Vdc
- Power Consumption: 5 VA

Code	Specifications
Z-2400-RB-T	**Base or Remote Turbo Module** Communications: RS232, RS422, RS485. Duty: Configurable as Base or Remote Embedded protocol support: MicroScan ASCII. Wireless Power: 100mW Plug pack power supply included
Z-2400-TCP-T	**Ethernet Base Turbo Module** Communications: Ethernet TCP/IP. Duty: Base only Embedded protocol support: MicroScan TCP. Wireless Power: 100mW Plug pack power supply included
Z-2400-A2I	**Input Module.** (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
Z-2400-Sleeper	**Sleeper Module** - Battery Powered 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 ASCII Battery life: Approx 2 years life when wake up interval set to 2 minutes. Note: Poor signal strength reduces battery life. Option to connect 12Vdc power supply.
Z-2400-T Powered Sleeper	**Sleeper Turbo 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: 100mW Embedded protocol support: MicroScan ASCII Internal battery for intermittent mains power failure. Battery life: Approx 2 months of intermittent use. (Must be permanently powered - plug pack power supply - included)
Accessories	
Z-2400-BAT	Replacement battery for Z-2400-Sleeper
XU-USB	USB Programming key
EZE-PS	Power Supply 12W 15V
PSW-10-F	Instrument Power Supply, Output Voltage: 24Vdc, 1.0A

Example Schematic

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



Z-2400-A2 Antennas

Zigbee ® Antennas 2.4GHz for Z-2400-A2 Series

ZA-OD24-2 | ZA-OD24-8 | ZA-PG24-19

Features

- Used when greater distances are involved
- Indoor and outdoor Antenna types available
- Directional and Omni directional antennas
- Supplied as a complete kit
- Easy to install

Code	Specifications
ZB-ANT-08	Antenna 2.4GHz 8dBi Monopole
ZB-ANT-05	Antenna 2.4GHz 5.5dBi Rubber Duck Indoor Only
ZB-ANT-14	Antenna 2.4GHz 14.5dBi Yagi
ZA-OD24-2	Outdoor 2.2dBi Omni Directional Whip Antenna, wall mount bracket complete with 0.5m coax cable with bulkhead and 1.5m Coax Seal
ZA-OD24-8	Outdoor 8dBi Omni Directional Monopole Antenna complete with 3m Coax Cable and 1.5m Coax Seal
ZA-PG24-19	Outdoor 19dBi Directional Parabolic Grid Antenna complete with 3m coax cable and 1.5m Coax Seal

DIGI485

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.

Features

- Wireless communications for RS485/422 devices
- Easy to use, no configuration required
- True peer-to-peer communications (no “master” required)
- Mesh, point-to-point and point-to-multipoint topologies supported
- Operates on the license-free 900MHz ISM band (Industrial, Scientific and Medical)
- LED’s on the front to indicate the wireless signal quality

Code	Specifications
DIGI485	Digi Radio Modem for RS485/422

HR SERIES - STAINLESS STEEL DATA LOGGERS

GP-HR

General Purpose Data logger - 4 Inputs

The GP-HR is a small High Resolution (12 bit) multi purpose data logger housed in a rugged 20mm 304 stainless steel case, that can be configured to accept any (up to four) of the following inputs:

Three analogue input channels, any to log:

- Temperature
- Humidity
- Pressure
- Light
- Voltage (DC)
- Current (DC) including 4~20mA
- Wind Direction

One Digital pulse input channel, to log:

- Rainfall
- Wind Speed
- Flow
- Counter (up to 65535)
- Frequency (up to 60kHz)

The GP-HR has 3 Analogue inputs (individually configurable using **Omni7 Software**) and 1 Digital pulse input channel. It also has an internal temperature sensor for convenient logging of ambient temperature if desired. Logging can be configured to: start on time, immediate start, stop when full, loop around (overwrite oldest data).

The GP-HR (mark 4) features a storage capacity of over 1,000,000 8bit samples; or over 500,000 12bit samples, as well as a user replaceable battery!

GP-HR with mA3+P-PS

GP-HR with Pt3-PS

Code	Specifications
GP-HR	GP-HR General Purpose Data Loggger
Sensors and Plug Sets for GP-HR	
mA1-PS	One 4~20mA or 0~20mA input
mA3+P-PS	Three 4~20mA or 0~20mA inputs c/w One Pulse input
R-PS	One Slow Pulse for Rain Gauge input
P300-HR-PS	Pressure sensor. Range = -15~300psi (Overload 600psi, Burst 1500psi), 1500mm cable, 1/8"NPT.
P100-HR-PS	Pressure sensor. Range = -15~100psi (Overload 200psi, Burst 500psi), 1500mm cable, 1/8"NPT.
Pt3-PS	Three RTD Pt1000 Temperature Probes. 4mmø x 140mm, 2m long. Range -50~130°C Note: GP-HR maximum RTD Pt1000 temperature range is -100~400°C - Other available on request
L-PS	Light Energy cable
##VD3-PS	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)
ACM-Ma2-PS	Flow metering off the pump run contact plus two 4~20mA inputs
FLOW-mA2-PS	Coil or open collector plus two 4~20mA inputs
DLC3USB	USB Download Cable HR Series

HT-HR

Humidity & Temperature Data Logger

- Temperature & Humidity can be set to any combination of Point, Average, Maximum & Minimum readings
- The data from any logger that records Temperature and Relative Humidity can be processed, by the Omni7 software, to add Absolute Humidity and/or Dew Point readings to the data.
- The logger can be set to log Humidity only, Temperature only or both Humidity and Temperature
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now” or started at a given time in the future
- The data from any logger that records Temperature can be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops

Code	Specifications
HT-HR	Humidity & Temperature Data Logger, Range -30~70°C
DLC3USB	USB Download Cable HR Series

Tc-HR

Thermocouple Temperature Data Logger

Tc-HR with Probe

- Over 500,000 samples can be logged (when logging thermocouple only)
- The logger accepts Type J, K, N, R and T thermocouple probes (factory set to Type K)
- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now”, started at a given time in the future or on a condition (e.g. temperature >20°C)
- The data from any logger that records Temperature can be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops

Code	Specifications
Tc-HR	Dual Temperature, Thermocouple Datalogger, Range -30~70°C (Does not include Thermocouple probe)
Options:	
HHT-03	3.2mm x 100mm, Type K, 900mm PVC, SS, -30~300°C, Mini-spear probe
Tc-HR Plug Set	70mm lead (Specify thermocouple type), includes Switchcraft plug (logger end) and Mini jack (connects to T/c Mini plug)
DLC3USB	USB Download Cable HR Series

T-HR

Single Temperature Data Logger

- Over 500,000 samples can be logged
- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings
- Logging can be configured to: start on time, immediate start, stop when full, loop around (overwrite oldest data)
- The data from any logger that records Temperature can be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops

Code	Specifications
T-HR	Single Temperature Data Logger, Range -30~70°C
DLC3USB	USB Download Cable HR Series

Pt-HR

External RTD Temperature Data Logger

Pt-HR with TP-Pt100

- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings
- Both the RTD and Internal Temperatures can be logged, or one Temperature only
- Logging can be configured to: start on time, immediate start, stop when full, loop around (overwrite oldest data)
- The data from any logger that records Temperature can now be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops.

Code	Specifications
Pt-HR	External RTD Pt100/Pt500/Pt1000 Temperature Data Logger, Range -30~70°C
Options	
TP-Pt100	RTD Pt100 temperature probe for Pt-HR, range -100~150°C
DLC3USB	USB Download Cable HR Series

mV-HR

milliVolt Data Logger

mV-HR with Test Lead

- milliVoltage and Temperature can be set to any combination of Point, Average, Maximum & Minimum readings.
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time.
- The logger can be started “Now” or started at a given time in the future.

Code	Specifications
mV-HR	milliVolt Data Logger ±50mV / ±100mV / ±200mV / ±400mV
Options	
mV-HR Lead	Test Lead set for mV-HR logger
DLC3USB	USB Download Cable HR Series

pH-HR

pH & Temperature Data Logger

pH-HR with pH Probe

- Over 500,000 samples can be logged (when logging pH only)
- pH and Temperature can be set to any combination of Point, Average, Maximum & Minimum readings
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now”, started at a given time in the future or on a condition (e.g. pH > 6.2pH)
- The data from any logger that records Temperature can now be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops

Code	Specifications
pH-HR	External RTD Pt100/Pt500/Pt1000 Temperature data logger
Options	
pH-HR-Plug Set	Fit plug set to pH sensor for use with pH-HR logger
DLC3USB	USB Download Cable HR Series

See page 8 for **pH Probes** available from Intech

WT-HR

Water Level & Temperature Data Logger

- Temperature can be set to any combination of Point, Average, Maximum & minimum readings
- Temperature can be logged in high resolution or low resolution mode
- Low resolution mode is used to increase the number of samples
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now” or started at a given time in the future

Code	Specifications
WT-HR-250	Water Level & Temperature Data Logger 0~0.25m
WT-HR-500	Water Level & Temperature Data Logger 0~0.5m
WT-HR-1000	Water Level & Temperature Data Logger 0~1.0m
WT-HR-1500	Water Level & Temperature Data Logger 0~1.5m
WT-HR-2000	Water Level & Temperature Data Logger 0~2.0m
Options	
DLC3USB	USB Download Cable HR Series

LCD SERIES - LCD DISPLAY DATA LOGGERS

HT-LCD

Humidity & Temperature Data Logger

- Storage capacity of over 500,000 samples
- Easy to use LCD menu options
- LCD display shows logger status and alarm status continuously
- The data from any logger that records Temperature and Relative Humidity can be processed, by the Omni7 software, to add Absolute Humidity and/or Dew Point readings to the data
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now”, at a given time in the future, on a condition (e.g. temperature >20°C), or on Trigger (push button on logger)
- The data from any logger that records Temperature can now be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops

Code	Specifications
HT-LCD	Humidity & Temperature LCD Data Logger
DLC8USB	USB Download Cable LCD Series

THT-LCD

Humidity and Dual Temperature Data Logger

THT-LCD with HT-11

- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings.
- The data from any logger that records Temperature and Relative Humidity can be processed, by the Omni7 software, to add Absolute Humidity and/or Dew Point readings to the data.
- The battery voltage of the logger can be logged if required.
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time.
- The logger can be started “Now” or started at a given time in the future

Code	Specifications
THT-LCD	Humidity & Dual Temperature LCD Data Logger (includes HT-11 probe)
DLC8USB	USB Download Cable LCD Series

Tc-LCD

Humidity & Temperature Data Logger

- Universal miniature thermocouple connector socket can be used to connect type J, K, N, R and T thermocouples (factory set to type K)
- Storage capacity of over 500,000 samples
- Easy to use LCD menu options
- LCD display shows logger status and alarm status continuously
- LCD display can be set to show; thermocouple temperature, internal temperature, battery voltage, number of logged samples and alarm status.
- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now”, at a given time in the future, on a condition (e.g. temperature >20°C) or on Trigger (push button on logger)

Code	Specifications
Tc-LCD	Thermocouple Temperature LCD Data Logger Accepts Type J,K,N,R and T probes via Universal plug (Does not include Thermocouple probe)
Options:	
HHT-03	Type K temperature probe for Tc-LCD. Range -30~300°C. Spear Probe 2m pvc cable with handle & mini plug
DLC8USB	USB Download Cable LCD Series

Pt-LCD

RTD Temperature Data Logger

- 6 pin Connector Socket can be used to connect to 2 wire, 3 wire and 4 wire RTD Pt100, Pt500 and Pt1000 temperature probes
- Storage capacity of over 500,000 samples
- Easy to use LCD menu options
- LCD display shows logger status and alarm status continuously
- LCD display can be set to show; RTD temperature, internal temperature,
- battery voltage, number of logged samples and alarm status
- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now”, at a given time in the future, on a condition (e.g. temperature >20°C) or on Trigger (push button on logger)

Code	Specifications
Pt-LCD	LCD RTD (Pt100, Pt500 & Pt1000) Temperature Data Logger. (Does not include RTD probe)
Options	
TP-Pt100-LCD	RTD Pt100 temperature probe for Pt-LCD, range -100~150°C, 4.7 x 100mm SS probe with 2m tefzel cable
DLC8USB	USB Download Cable LCD Series

P-LCD

Pressure Data logger with LCD Display

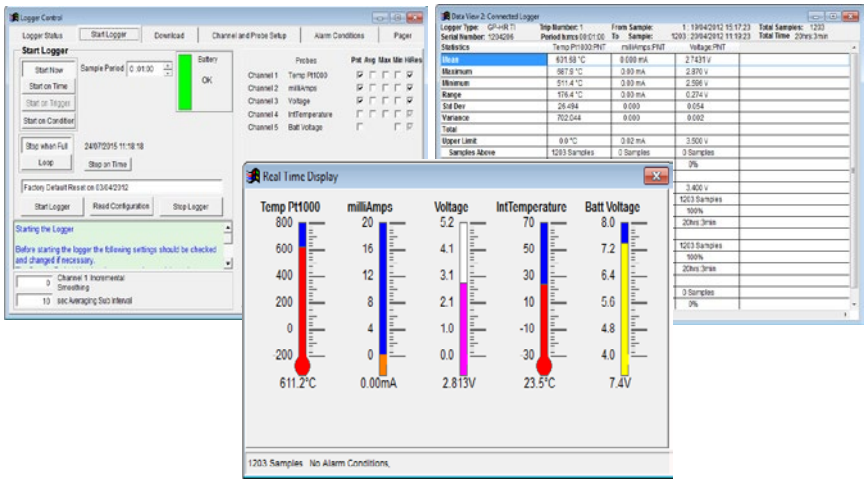
- Storage capacity of over 500,000 samples
- Easy to use LCD menu options
- LCD display shows logger status and alarm status continuously
- LCD display can be set to show; pressure, internal temperature, battery voltage, number of logged samples and alarm status
- The battery voltage of the logger can be logged if required
- The logger can be run in either “Stop when memory is Full”, “Loop Around” mode or set to stop at a future time
- The logger can be started “Now”, at a given time in the future, on a condition (e.g. temperature >20°C) or onTrigger (push button on logger)
- Can display pressure in kPa, Bar or PSI on the LCD Screen

Code	Specifications
P-LCD	LCD Pressure Data Logger (Does not include pressure sensor)
Options:	
P100-PS	-15~100psi Pressure sensor (Overload 200psi, Burst 500psi), 500mm cable, 1/8"NPT
P300-PS	-15~300psi Pressure sensor (Overload 600psi, Burst 1500psi), 500mm cable, 1/8"NPT
DLC8USB	USB Download Cable LCD Series

SOFTWARE & ACCESSORIES

Omni7

Software for Intech Data Loggers



- 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.
- The data from any logger that records Temperature can now be processed, by the Omni7 software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops.

INSTALLED DATA LOGGERS

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 GP-MC can be supplied in an optional seahorse IP66 Weatherproof enclosure if required. It can be configured to accept input from a wide variety of sources including:

- 4~20mA Probes
- Voltage (DC)
- Current (DC)
- Temperature Probes
- Pressure Probes
- Flow Sensors
- Frequency
- Switches
- * Thermocouple * (see below)
- Potentiometers
- Light Sensors
- Leaf Wetness Sensor
- Soil Water Tension Probes
- Wind Speed Probes
- Wind Direction Sensors
- Tipping Bucket Rain Gauges
- Solar Radiation Sensors

The GP-MC also has an internal temperature sensor for convenient logging of ambient temperature if desired.

One to Five year battery life depending on usage as below, user replaceable. Data is retained in the event of battery failure. Battery Status Monitor 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.
- Using the logger in temperatures below -5°C (23°F) will reduce battery life.

A DLC5USB [USB] download cable (2m) is required to connect the GP-MC to a computer.

Code	Specifications
GP-MC	General Purpose Multi Channel data logger
Sensors and Plug Sets for GP-MC:	
mA-MC-PS	One 4~20mA or 0~20mA input
5VD-MC-PS	One 0~5Vdc input
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
Pt1000-MC-PS	RTD Pt1000 Temperature Probe, range -50~130°C. Note: GP-MC maximum RTD Pt1000 temperature range is -100~400°C
P100-MC-PS	Pressure sensor. Range = -15~100psi (Overload 200psi, Burst 500psi), 1500mm cable, 1/8"NPT
P300-MC-PS	Pressure sensor. Range = -15~300psi (Overload 600psi, Burst 1500psi), 1500mm cable, 1/8"NPT
Flow-MC-PS	Coil or open collector
ACM-MC-PS	Flow metering off the pump run contact
DLC5USB	USB Download Cable for GP-MC
Omni7	Omni7 Software (Free to download from Intech website)

DLC-#USB

USB Download Cable for Intech Data Loggers

DLC3USB

DLC5USB

DLC8USB

Code	Specifications
DLC3USB	USB Download Cable HR Series
DLC5USB	USB Download Cable for GP-MC
DLC8USB	USB Download Cable LCD Series

HR-MK4

HR Battery Mark 4 for HR Data Logers

Code	Specifications
HR-MK4	Replacement HR Battery Mark 4 for HR Dataloggers
Labour	If you want Intech to fit the battery for you, test and check data logger (Data logger needs to be returned to Intech)

Seahorse

IP66 Weatherproof Enclosure

- The Seahorse Logger Enclosure is a weatherproof lockable equipment housing designed to be mounted on posts or 50mm poles
- Seahorse equipment cases are watertight, airtight, dustproof, crush resistant and designed to keep your logging equipment safe from the elements
- The Seahorse Logger Enclosure is supplied with 2 U bolt clamps for attaching the enclosure to a 50mm outside diameter pipe

Code	Specifications
Seahorse	IP66 Weatherproof Enclosure

4~20mA WEATHER SENSOR TRANSMITTERS

T-CL

Temperature Sensor

Features:

- Single 4~20mA Outputs
- ±0.2°C pre-calibrated thermistor sensor
- Very Compact Design
- High Accuracy
- Easy to Install
- Reverse Polarity Protection
- Wide Power Supply Range
- IP67 weather proof

Code	Specifications
T-CL	Temperature Sensor complete with 1.5m cable (-30~70°C)

H-CL

Humidity Sensor

Features:

- Single 4~20mA Outputs
- Factory Calibrated digital Humidity sensor
- Very Compact Design
- High Accuracy
- Easy to Install
- Reverse Polarity Protection
- Wide Power Supply Range
- IP67 weather proof

Code	Specifications
H-CL	Humidity Sensor complete with 1.5m Cable (0~100%)

BP-CL

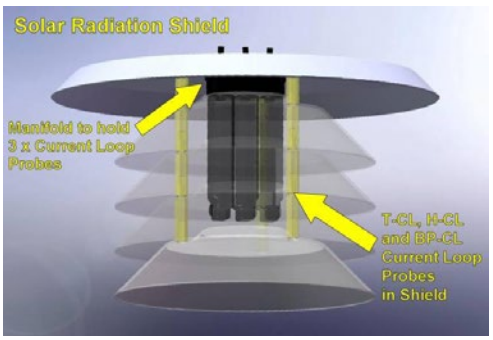
Barometric Pressure Transmitter

Features:

- Single 4~20mA Loop Powered Output
- Factory Calibrated digital Barometric sensor
- 700~1100 hPa
- Very Compact Design
- High Accuracy
- Easy to Install
- Reverse Polarity Protection
- Wide Power Supply Range
- IP67 weather proof

Code	Specifications
BP-CL	Barometric Pressure Transmitter, 700~1100hPa c/w 1.5m of cable.

These units can be added to one of of our **Fully Mounted Weather Stations** or our **Small and Medium Weather Systems** inside a **Radiation Shield**.



WD-CL

Wind Direction Vane

The wind vane has been manufactured from stainless steel and anodized aluminum so as to provide minimum maintenance and maximum reliability.

Features:

- Rugged construction
- Temperatures of -5~60°C
- Various output types (Standard 4~20mA)
- High accuracy
- Easy installation

Code	Specifications
WD-CL	Wind direction c/w 5m cable (0~360°), Damping: 2min Nominal over 90°

WS-CL

Wind Speed Sensor (Anemometer)

The Anemometer is used for the measurement of wind velocity. The Intech Anemometer is manufactured from stainless steel and anodized aluminium so as to provide minimum maintenance and maximum reliability.

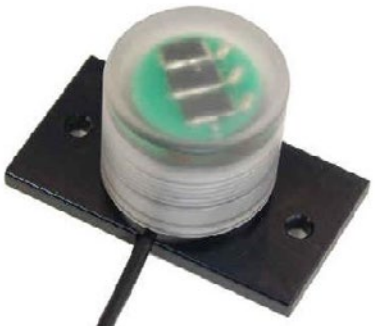
Features:

- Range: 0~60m/sec for 3 Cup and 0~80m/sec for 6 Cup
- Accuracy ±2%
- Start speed: 1.5 m/sec for 3 Cup and 0.45m/sec for 6 Cup
- Cable length: 5 metres
- Various output types

Code	Specifications
WS3-CL	Wind Speed 3 Cup with 4~20mA output (1.5m/sec start, 20mA = 60m/sec)
WS6-CL	Wind Speed 6 Cup with 4~20mA output (0.45m/sec start, 20mA = 80m/sec)

LE-CL

Solar Radiation Sensor (Pyranometer)



The pyranometer has been designed to provide a wide spectral response, an good cosine response and low susceptibility to inaccuracies caused by rain drop and dirt effects.

- Range 0~1500 w/m²
- Accuracy ±5%
- Cosine error is typically less than 3% from vertical to 85° in all directions
- Temperature Coefficient 0.15% per 1°C
- Other output types available on request

Code	Specifications
LE-CL	Light energy sensor with base plate and 5m cable,4~20mA Output

RAIN-CL

Rain Collector

- 0.2mm Rain gauge
- Pulse output
- 4~20mA output via included **PI-F transmitter**, 0~55mm/hr
- Sensor Type: Tipping bucket with magnetic reed switch
- Output: Contact closure
- Attached Cable Length: 12 m
- Cable Type: 4-conductor, 26 AWG
- Connector: Modular connector (RJ-11)
- Recommended Maximum Cable Length: 270 m
- Housing Material: UV-stabilized ABS plastic
- Dimensions Rain Collector: 16.5 cm diameter x 24 cm high
- Collection Area: 214 cm2

Code	Specifications
RAIN-CL	Rain gauge 0.2mm, 4~20mA Output via included **PI-F** transmitter, 0~55mm/hr
RAIN	Rain gauge 0.2mm, Pulse output, Pole mount

Mounting options

Mounting options for Weather Sensor Transmitters

LB
L-Bar with attachment plate and two 50mm U bolts

TB
T-Bar with attachment plate and two 50mm U bolts

Shield
Solar Radiation Shield – For housing the temperature, humidity and pressure sensors

Code	Specifications
LB	L-Bar with attachment plate and two 50mm U bolts
TB	T-Bar with attachment plate and two 50mm U bolts
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

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 (1 inch) diameter pipe or bolting to posts or buildings. The L-Bar and T-Bar are supplied complete with two 50mm (2inch) U bolts.

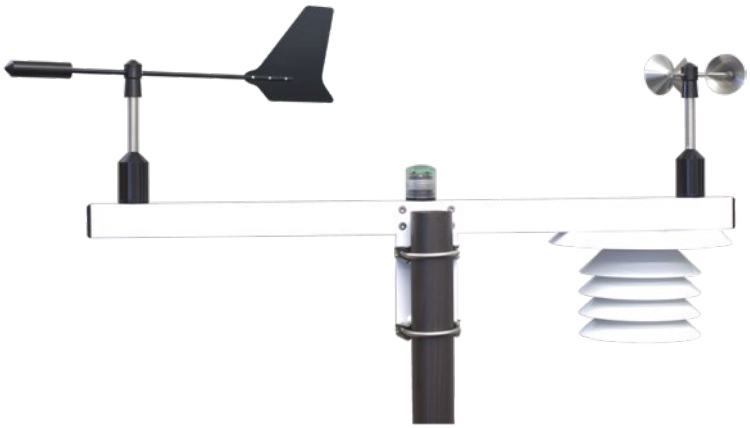
Weather Stations

Weather Sensors Transmitters mounted on L or T Bar arms

THP-LB-CL

WS3-WD-THP-TB-CL

Code	Specifications
WS3-WD-TB-CL	Wind speed 3 cup and Wind Direction, mounted on T-Bar mounting arm complete with 5m cable
WS3-WD-THP-TB-CL	Wind speed 3 cup and Wind Direction with Temperature, Humidity and Barometric Pressure sensors, all housed in a Solar Radiation Shield, mounted on T-Bar mounting arm complete with 5m cable
THP-LB-CL	Temperature, Humidity & Barometric Pressure sensors, all housed in a Solar Radiation Shield mounted on L-Bar mounting arm c/w 5m of cable
Options	
LE-CL	Light Energy Sensor
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)



WS3-WD-THP-LE-TB-CL

WS3-LB-CL

Note: Please contact us for complete **Environmental Monitoring Systems.**
See our **GP-HR (4 Input) Multi Purpose Datalogger** on page 49 and/or **GP-MC (10 Input) Multi Purpose Datalogger** on page 56. Please see also **MicroScan SCADA** on page 36 and **eze Cloud based** on page 43 for Monitoring Systems.

HUMIDITY TRANSMITTERS

LPN-H

Relative Humidity & Temperature Transmitter

LPN-H-W

F2

LPN-H-D

Features

- Sensirion SHT25 Digital Humidity Sensor
- Long Term Stability
- Fast response: 4 seconds from 0~100%RH under ideal conditions
- Dual 4~20mA Outputs
- %RH Temperature Compensated Linear Output RTD Pt100 Sensor
- Temperature Output 0~100°C (0~200°F option on request)
- Temperature Output Linearised
- Operating Temperature: -30~70°C
- Very compact design
- High accuracy
- Easy to install
- Reverse polarity protection
- Wide Power Supply Range
- Rugged and reliable

Code	Specifications
LPN-H-W	Relative Humidity & Temperature Transmitter, Wall Mount
LPN-H-D	Relative Humidity & Temperature Transmitter, 220mm Duct Mount
Accessories	
F2	Flange for LPN-H-D, 100mm OD x 24.5mm ID with locking screw
LPN-H-CAL	Non-Spill Calibration kit with 33% and 75% RH salt solutions including adaptor

Accessories

LPN-H-CAL - Calibration System for LPN-H Humidity sensors

The LPN-H-CAL system is designed to allow in situ calibration of LPN-H-W and LPN-H-D Humidity Transmitters.

The LPN-H-CAL system consists of canisters containing humidity regulating salt solutions that replace the protective filter on the sensor.

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.

WET/DRY BULB HUMIDITY TRANSMITTER

IN-HWD

Wet & Dry Bulb Humidity and 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

Features

- 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

Code	Specifications
IN-HWD	Humidity and Temperature Indicator/Transmitter, High Voltage Power Supply
Options	
LV	Low Voltage Power Supp;y
R4	4x 5A Relay Outputs
WS232	Serial Port RS232: Includes Modbus RTU
WS485	Serial Port RS485: Includes Modbus RTU

WDT-DW

Wet & Dry Bulb Humidity 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

Features

- Sensor: Band 5 RTD, Pt100, 4.7ø x 150mm. Others by request
- Fill port: 1/8”BSP nipple
- Overflow port: 1/8”BSP nipple
- Mount: Wall or duct mount
- Cable: 3 metres

Code	Specifications
WDT-DW	Wet & Dry Bulb Humidity Tank (Includes two RTD Probes and wick)
Accessories	
WDT-WICK	Spare wick for wet bulb sensor
RL-S4.7-150-E-3000	Spare Probe for WDT-DW, RTD Probe with Lead, Band 5 sensor, 4.7mm x 150mm, 3m PFA

Intech Instruments Limited

CONDITIONS OF SALE

Note: These terms and conditions apply to the transaction to which this invoice relates and also 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 fromvariation 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 not withstanding 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 (unless an alternative currency is stated on your invoice) at the registered office of Intech by the 20th of the month following the month in which the goods were despatched. If you are a Cash Only customer, then payment must be received before dispatch of goods. 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.

INDEX

Intech®
Instruments

Intech Christchurch

59 Mandeville Street
Riccarton, Christchurch 8011

Phone: (03) 343 0646

Email: export@intech.co.nz