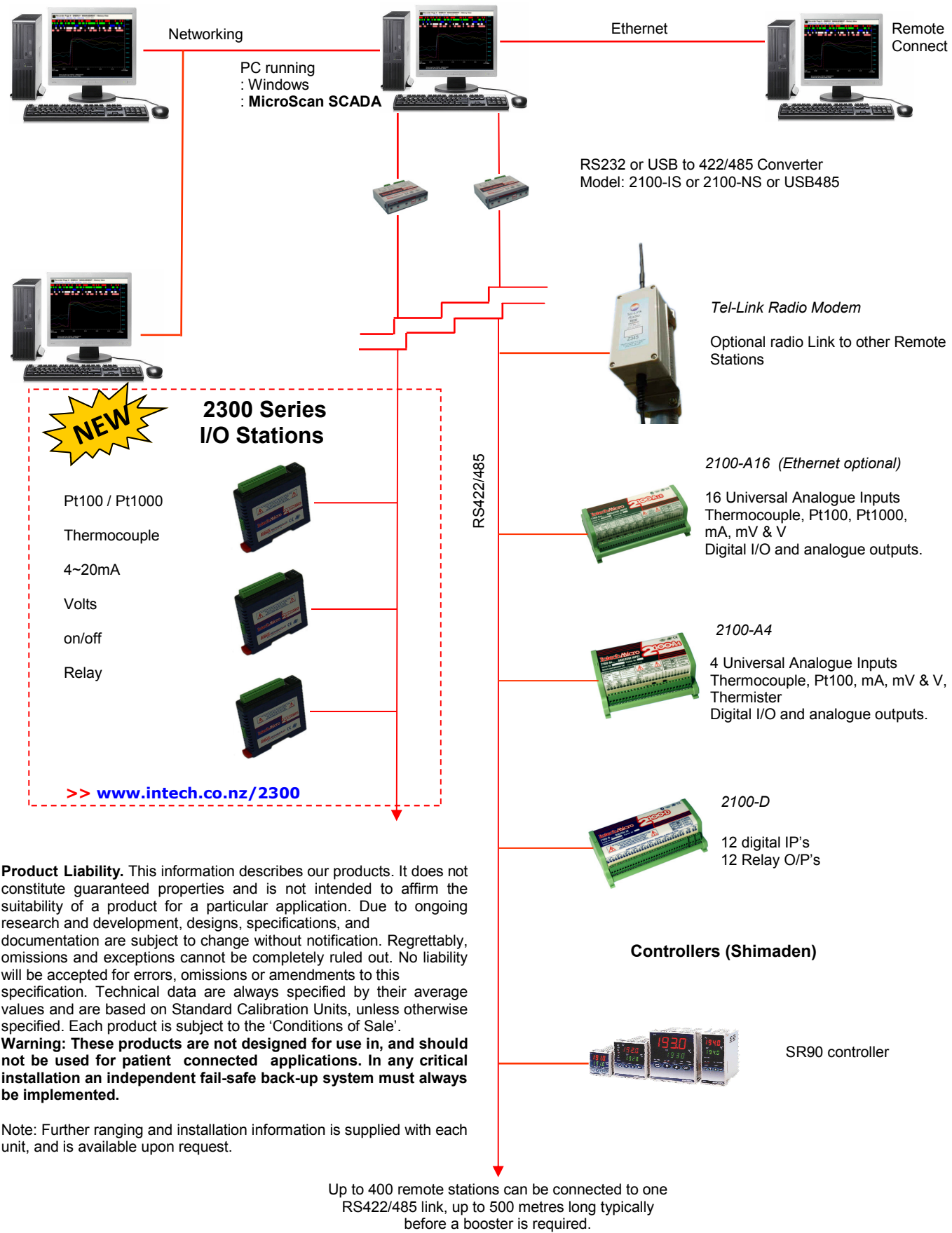


# Intech Micro 2100 Series Stations & Multiplexers



**Product Liability.** This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.  
**Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.**

Note: Further ranging and installation information is supplied with each unit, and is available upon request.



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# Intech Micro 2100 Series



Remote Data Acquisition Stations for plant wide monitoring

16 Channel Multiplexer  
Analogue input expansion  
Pt100  
mA  
V & mV

2100-M

2100-A16

16 Programmable Inputs  
Thermocouple with CJC  
Pt100 or Pt1000  
mA  
V & mV  
Digital  
Outputs  
Relay

2100-D  
12 Digital inputs  
12 Relay outputs

2100-A4  
4 Programmable Inputs  
Thermocouple with CJC  
Pt100  
mA  
V & mV  
Digital  
Outputs  
2 Analogue (optional)  
4 relay (2100-A4)  
8 relay (2100-A4E)

Data Hiway  
RS485  
RS422

MicroScan SCADA Software

2100-IS

## Applications:

Factory wide monitoring  
Cold Stores  
Refrigeration  
Energy Management  
Fermentation  
Research  
Shipping  
Heat Treatment  
Mining  
Laboratories  
Timber Processing  
Water / Waste Water  
Meat Industry  
Food Processing  
Energy Management  
Plastic / Rubber  
Textile  
Security  
Radio Communications  
& many others

### Introduction:

The Intech Micro 2100 series are an industrial multi sensor to computer interface (field remote station). Using the latest technology, the 2100 series provide intelligent signal conditioning including both analogue and digital I/O and RS422/485 communications on the Data Hi-way. The unique universal inputs with outputs means only a few station types are needed. A saving is made on spares, and familiarity with many different stations is not required.

### Stand alone Controller / Alarm Solution:

The 2100-A4 and 2100-A16 contain in built stand alone and ready to go on/off controllers and alarms. The 2100-A16 has 16 controllers, while the 2100-A4 has 4 controllers. Simply download the control or alarm set point from the MicroScan SCADA software. Other download parameters include; Control differential, Auto/Manual and Manual on & off. Alternatively, the outputs can be switched from software generated alarms or controllers.

### Power Supply:

Wide range power supply from 85 to 264Vac/dc, or 23 to 90Vdc selectable; plus a 10 to 28Vdc option is available.

### Flexible Data Hi-way Communications:

The Intech Micro 2100 series require just one pair of wires (RS485), or 2 pair (RS422), to communicate with their controlling host computer. The 2100 series will also communicate using modems or radios. The Data Hi-way will multi drop to up to 400 Intech Micro 2100 remote stations and will typically extend up to 1.2km before a booster is required. The communications on each remote station is isolated to ensure reliable trouble free operation. BCC error checking ensures error free and accurate communications. Both RS232 and USB plus Ethernet converters are available.

### Individually Programmable Inputs:

The Intech Micro 2100 series are in a class of their own because of their ability to accept multiple different sensor types and ranges of analogue inputs. Each input of the 2100-A4 and 2100-A16 is individually and easily configured for different analogue input types and ranges. Each digital input of the 2100-D, A16 or A4 is individually configured for on/off state, count, or rate using pulses from a flow meter and electricity meter etc. Being processor based means high accuracy over long periods of time.

### Modular Industrial Mounting:

The Remote Stations conveniently mount on DIN & EN rail. Terminations are conveniently laid out and clearly labeled. Each terminal is numbered for easy integration onto electrical drawings.



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**2100-IS and 2100-NS**  
**RS232 to RS422/485 Converter**

The 2100-IS and 2100-NS is a compact module that converts RS232 from a computer to RS422 or RS485 for communication to a field data logging system. The 2100-IS includes audible and fail safe alarms for communications failure, with selectable time delays plus input/output isolated.

**Specifications:**

**Comms Baud Rate:**  
 19200, 9600, 4800, 2400

**Comms Input / Output isolation (2100-IS)**  
 1.0kV AC/DC for 1 min  
 Comms Failure alarm:  
 Internal audible plus alarm relay output

[www.intech.co.nz/2100-is](http://www.intech.co.nz/2100-is)  
[www.intech.co.nz/2100-ns](http://www.intech.co.nz/2100-ns)

**2100-NET**  
**Ethernet to RS422/485 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 network. Each 2100-NET is located in a cabinet with the remote stations and takes over the job of the 2100-IS/NS in communicating with the stations in the cabinet. The 2100-NET can be fitted to existing systems, to take the place of the existing 422/485 data loop.

**Specifications:**

**Comms Baud Rate:**  
 19200, 9600, 4800, 2400

**Features:**  
 Universal AC/DC Power Supply  
 LED Status Indications

[www.intech.co.nz/2100-net](http://www.intech.co.nz/2100-net)

**USB to RS485 Converter**

The Intech Micro USB485 is a compact interface module that converts USB to RS485, for communication to a field data logging system. The USB485 is ideal for use with a computer that does not have an RS232 serial port as it eliminates the need for a separate USB to serial adaptor.

Please Note: Only use the USB485 for temporary monitoring situations; for Industrial environments we recommend using a physical RS232 connection.

[www.intech.co.nz/usb485](http://www.intech.co.nz/usb485)

**2100-A16** Rev1.3  
**Analogue input Remote Station**

This station has all the friendly features of a monitoring and/or control station. The 16 universal analogue inputs are software programmable using the user friendly MicroScan software. Each input can be configured for any of the following inputs: Thermocouple, RTD Pt100 / Pt1000, mA, mV & V. The wide choice of spans ensures high accuracy. The analogue inputs on the 2100-A16 can be expanded up to 76 using the 2100-M input multiplexers. The 2 relay contact outputs perform an alarm or control function. Output expansion is available using the 2100-R2 16 relay output expansion module. This allows the station to stand alone as a multi channel controller with the relay outputs used for control or alarm or a combination of both. The set point (SV) for each of the controllers, is downloaded from the user friendly MicroScan software Mimic package, and held in permanent memory on the 2100-A16. Other controller parameters include, output switching differential, auto/manual and manual settings of output. The controllers/alarms will operate unaffected by computer power downs, or reboots etc. The digital inputs have the same capabilities & features as the digit inputs on the 2100-D.

**Specifications:**

**Analogue Inputs:** 16 Differential, 16 Bit A/D  
 Each Input can be individually software selected and scaled within the following span limits.  
**mV:** -500~500mV  
**V:** -15~15V  
**mA:** -100~100mA (4~20mA default)  
**RTD (Pt100 or Pt1000):** -200~850°C (-330~1550°F)  
 Note: On bd selectable. All Pt selections will be either Pt100 or Pt1000  
**Thermocouple: K & N**  
 J -200~1200°C (-330~2200°F)  
 T -200~400°C (-330~750°F)  
 R & S 0~1700°C (0~3000°F)  
 B 250~1800°C (500~3000°F)  
 E -200~900°C (-330~1650°F)  
**Differential Inputs:**  
 18Vdc peak between any 2 channels, mV, V, mA, T/C  
 ie: 18Vdc peak between any 2 points on the input terminals  
**Accuracy**  
 ± 0.1% FSO typical  
**Digital Inputs:**  
 4 Digital Opto Isolated Inputs  
 5 to 30Vdc  
**Max input frequency:**  
 50 Hz typical on/off and count.  
 LED Indication on each Channel.  
**Relay Outputs:**  
 2 normally open contact outputs, form A.  
 Contact rating = 30Vdc. 1 amp  
 LED Indication on each Channel  
**16 On board Controllers:**  
 up to 16 with 2100-R fitted  
**Communications:**  
 Isolated RS422, RS485, RS232  
 Comms failure alarm  
 MODBUS RTU now standard.  
**Comms Baud Rate:**  
 9600, 4800, 2400  
 selectable. Radio & Modem compatible  
**Power Supply:**  
 85~264Vdc/dc  
 23~90Vdc selectable  
 10~28Vdc/dc optional  
 Power Supply consumption 5VA  
**Expansion Options:**  
 Option 1: Input Expansion. Supports up to four 2100-M input multiplexers. Maximum distance between 2100-A16 & 2100-M = 50m  
 Option 2: Output Expansion: 2100-R2 relay output module  
 Option 3: Two Analogue Outputs: 4~20mA (12V max drive) 0~10Vdc (4 mA max drive)

[www.intech.co.nz/2100-a16](http://www.intech.co.nz/2100-a16)

**2100-A4**  
**Analogue Input Remote Station**

The universal inputs plus outputs gives this station a lot of flexibility. I/O include 4 analogue inputs, 4 digital inputs, 4 relay outputs plus optional 2 analogue outputs. (8 relay outputs available on 2100-A4-E).

Field programmable inputs include thermocouples, RTD, Pt100, mA, mV & V, thermister. Each input can be individually programmed and ranged for any span via on Bd links. The analogue inputs on the 2100-A4 can be expanded up to 64 using the 2100-M input multiplexers.

Outputs include relays for control or alarm, plus an option for 2 analogue outputs of 4~20mA or 0~10Vdc. The 2100-A4 contains 4 in built on/off controllers or alarms. The controller / alarm set point (SV) and other parameters are down loaded from the user friendly MicroScan software, Mimic package, and held in permanent memory on the 2100-A4.

Other controller parameters include, output switching differential, auto/manual and manual settings of output. The 4 controllers/alarms on the 2100-A4 will operate unaffected by computer power downs or reboots etc. The digital inputs have the same capabilities & features as the digit inputs on the 2100-D.

**Specifications:**

**Analogue Inputs:** 4 single ended, 12 bit A/D  
 Each Input can be individually selected on Bd and scaled within the following span limits.  
**mV:** 0~300mV  
**V:** 10V  
**mA:** 0~20mA (4~20mA)  
**RTD (Pt100):**  
 -50~350°C (-50~650°F)  
 100~1200°C (220~2150°F)  
**Thermocouple: K & N**  
 J 100~1300°C (220~2350°F)  
 T 100~1200°C (220~2150°F)  
 E 100~400°C (220~750°F)  
 100~1000°C (220~1800°F)  
**Accuracy**  
 ± 0.1% FSO typical  
**Digital Inputs:**  
 4 Digital Opto Isolated Inputs  
 5 ~ 30Vdc  
**Max input frequency:**  
 50 Hz typical On/off and count  
 LED Indication on each Channel  
**Relay Outputs:**  
 4 Isolated contact outputs 2100-A4.  
 8 Isolated contact outputs 2100-A4-E.  
 Change over Form C  
 250Vac. 2 amp  
 30Vdc. 2 amp  
 selectable  
**Relay State:**  
 On/off action and heat/cool  
**4 On Bd Controllers:**  
**Communications:**  
 Isolated RS422, RS485, RS232  
 Comms failure alarm  
**Comms Baud Rate:**  
 19200, 9600, 4800, 2400  
 selectable. Radio and Modem compatible  
**Power Supply:**  
 85~264Vdc/dc  
 23~90Vdc selectable  
 10~28Vdc/dc optional  
 Power Supply consumption 10VA  
**Expansion Options:**  
 Option 1: Input Expansion. Supports up to four 2100-M input multiplexers. Maximum distance between 2100-A16 & 2100-M = 50m  
 Option 2: Output Expansion: 2100-R relay output module  
 Option 3: Two Analogue Outputs: 4~20mA (12V max drive) 0~10Vdc (4 mA max drive)

[www.intech.co.nz/2100-a4](http://www.intech.co.nz/2100-a4)

**2100-D**  
**Digital Input / Output Remote Station**

The 2100-D offers a high degree of flexibility for both the fully isolated Digital inputs and Relay outputs, which are configurable by the user friendly MicroScan software. Configuration of Digital inputs include:

- on/off state
- Flow metering. Pulses from flow or power meters etc are accurately integrated into rate and totaliser values with virtually no loss of accuracy.
- Counter function. Pulses are counted up to 16383 and the counter value reset.

Relay outputs include 10 with change over Form C contacts, and 2 with normally open Form A contacts. The output state of the contacts are configurable. All program settings retained on power down.

The 2100-D includes a communications failure alarm output, and supports communications via modem or radio.

**Specifications:**

**Digital Outputs:**  
 12 Isolated Relay Outputs  
 10 Change over/Form C  
 2 Normally Open Form A  
 2 A 250Vac  
 2 A 30Vdc  
 0.3A 110Vdc  
 1/10 H.P. 125Vac  
 1/6 H.P. 250Vac

**Relay State:**  
 Software selectable.  
 LED Indication on each Channel.

**Digital Inputs:**  
 12 Digital opto Isolated Inputs 5 to 30Vdc.  
 LED Indication each Channel.  
 High Speed Inputs 500Hz Max.

**Housing:**  
 DIN Rail Mount.  
 L=195mm W=120mm H=70mm

**Communications:**  
 Isolated RS422, RS485, RS232

**Comms Baud Rate:**  
 19200, 9600, 4800, 2400  
 selectable. Radio and Modem compatible.

**Power Supply:**  
 85~264Vdc/dc  
 23~90Vdc selectable  
 10~28Vdc/dc optional  
 Power Supply consumption 10VA

[www.intech.co.nz/2100-d](http://www.intech.co.nz/2100-d)

**2100-M**  
**Analogue Input Multiplexer**

The 2100-M is used extensively in industrial plants, with proven reliability and accuracy. It comes complete and ready to operate in a compact DIN rail mount enclosure.

The 2100-M (previously the EXPO-3) can multiplex up to 16 analogue inputs, into one input of a PLC or a Data Logging System. It uses solid state switches, making it extremely reliable and durable.

The 2100-M is widely used to expand up inputs on the 2100-A16 and 2100-A4, plus give economic, easy and accurate analogue input expansion on a PLC.

The PLC only requires two digital outputs and one analogue input to select and receive data from the 2100-M. For each additional 2100-M added to the system, only one more analogue input is required. (The typical fan-out for most PLC's is up to eight 2100-M's) The 2100-M-I, the 2100-M-R and the 2100-M-V are on board input span programmable. The output can be configured to a selection of industry standard output signals.

**Specifications:**

**Analogue Input Multiplexer:** 16 single ended.

Each Multiplexer is span programmable with in the specified input type as below:  
 2100-M-R = RTD Pt100 (-200~600°C) (-330~1100 °F)  
 2100-M-I = 4~20 / 0~20mA  
 2100-M-V = mV & V (0~500mV and 0~10Vdc)

**Accuracy:** ± 0.1% FSO Typical  
**Ambient Drift:** < 0.01% / °C FSO Typical  
**Isolation on clock & reset:** 1kV ac/dc for 1 min  
**Operating Temperature:** 0~60°C  
**Storage Temperature:** -20~80°C  
**Operating Humidity:** 90% RH. Non condensing  
**Housing:** DIN Rail Mount.  
 L = 195mm W = 120mm  
 H = 70mm  
**Power Supply:**  
 85~264Vdc/dc  
 23~90Vdc selectable  
 10~28Vdc/dc optional  
 Power Supply consumption 10VA

[www.intech.co.nz/2100-m](http://www.intech.co.nz/2100-m)

**2100-R2**  
**Relay Output Expansion**

The 2100-R2 is used in conjunction with the 2100-A16 and 2100-A4 to expand the outputs using individual and isolated change over contacts. The 2100-R2 is ideal for on/off control or alarms and allows full use of the 16 on Bd controllers in the 2100-A16.  
 Two of the 2100-R2 can be connected to the 2100-A16 (rev1.3) for a total of 32 relay outputs.

**Specifications:**

**Relay Outputs:**  
 16 Isolated contact outputs  
 Change over Form C  
 2 A 250Vac  
 2 A 30Vdc  
 0.3A 110Vdc  
 1/10 H.P. 125Vac  
 1/6 H.P. 250Vac

**Relay State:**  
 Selectable LED Indication each Channel.

**On Bd Controllers:**  
 Allows use of 16 on Bd On/Off controllers when fitted to 2100-A16.

**Controller Settable Parameters:**  
 Set Point (SV)  
 Switching differential  
 Auto/Manual  
 Manual output setting

**Isolation voltage:**  
 1000V Peak ac/dc for 1 min.

**Power Supply:**  
 85~264Vdc/dc  
 23~90Vdc selectable  
 10~28Vdc/dc optional  
 Power Supply consumption 10VA

[www.intech.co.nz/2100-r2](http://www.intech.co.nz/2100-r2)

**Quality Assurance Program:**  
 The modern technology and strict procedures of the ISO9001 Quality Assurance Programme applied during design, development, production and final inspection grant long term reliability of the instrument. This instrument has been designed and built to comply with EMC and Safety Standards requirements.

Refer to Installation Guide for full specifications