

INT5

Universal Input Panel Meter



KEY FEATURES

- Universal input
- 6 digit, 3 colour, LED display
- Real time diagnostics of sensor wiring
- Sensor drift correction
- Direct or theoretical calibration
- Readings linearised or non-linearised
- Adjustable display brightness
- 6 logic input ports with selectable functionality
- 95-265V AC or 11-30V DC powered
- IP65 front panel sealing
- Comprehensive user manual

SENSOR INPUTS

4-20mA Active
4-20mA Passive
0-10V
DC Shunt - 50mV, 60mV, 75mV or 100mV
Load Cell - Up to 4 x 350 Ohm
Elapsed Timer - START, STOP, RESET inputs
Potentiometer - 3 wire or 4 wire
Pulse (NPN or contact closure) - Rate/RPM
Pulse (NPN or contact closure) - Total
Resistance - Up to 20 kOhms
RTD - PT100 or PT1000
Thermocouple - Type B, E, J, K, N, R, S or T
Onboard ambient temperature
Power frequency monitor
Real time clock

DESCRIPTION

The INT5 is the fifth generation of our popular 1/8 DIN INTUITIVE panel meter range and has been designed with a universal sensor input.

The INT5 is the fastest, highest performing, panel meter we have produced to date and our patented multi-sensor design makes it the most universal meter ever.

The 6 digit, 7 segment, LED display is our own custom designed module and gives the user a choice of red, green or yellow digits.

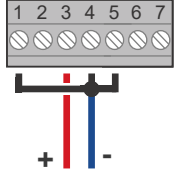
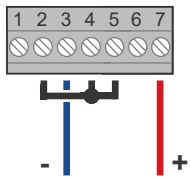
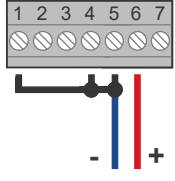
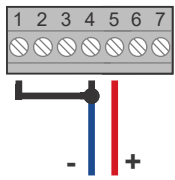
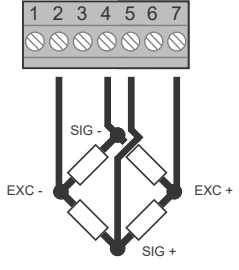
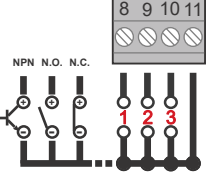
OUTPUTS

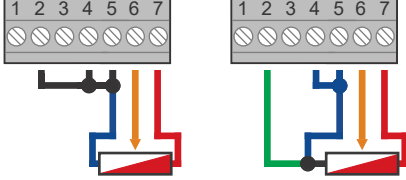
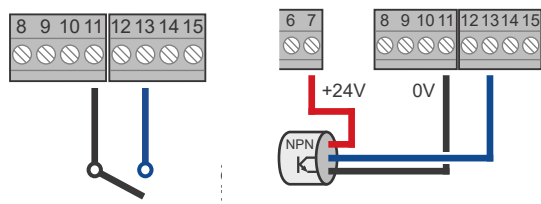
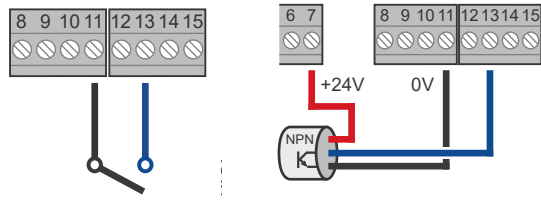
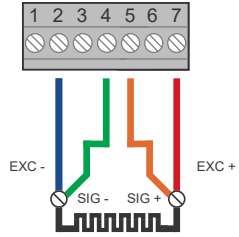
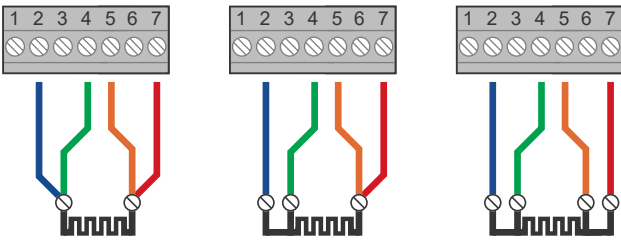
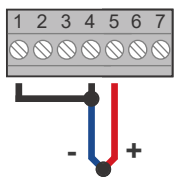
0-10V or 4-20mA active source or passive sink
1, 2, 3 or 4 x SPDT mechanical relays
1 or 2 x RS232 or RS485, ASCII, Modbus ASCII or Modbus RTU

LOGIC INPUTS

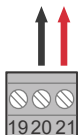

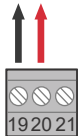
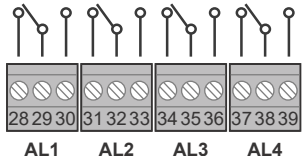
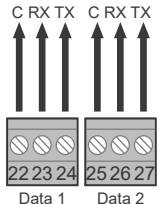
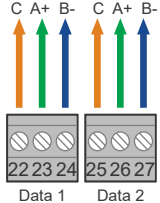
6 x NPN or contact closure inputs configurable as:-		
Tare	Peak Gross	Gross
Show Tare	Peak Nett	Nett
Reset	Valley Gross	Mirror Image
Hold	Valley Nett	Ambient Temperature






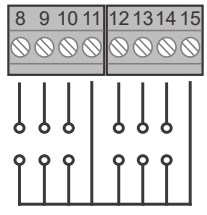
SENSOR INPUTS		
Input	Description	Connections
4-20mA Active	<p>Suitable for 4-20mA sent from an active device.</p> <p>In this mode, the meter can accept an input of -40 to +40mA and it will tolerate up to 30V DC across the current input terminals without damage.</p>	
4-20mA Passive	<p>In this mode, the meter provides 24V DC excitation voltage to power a 2-wire 4-20mA transmitter.</p>	
0-10V	<p>Suitable for connecting an active DC voltage signal sent from another device.</p> <p>In this mode, the meter can accept -20 to +20V DC.</p>	
DC Shunt or mV	<p>This mode is ideal for DC current measurements.</p> <p>The meter accepts shunts of all current ratings with mV outputs from 5mV full scale to 100mV full scale.</p>	
Load Cell	<p>Ideal for all weighing, torque, strain and force measurements.</p> <p>The meter only needs a 4-wire connection for high performance cable resistance compensation, thanks to our new patented signal processor.</p> <p>You can connect up to 4 x 350 Ohm or 8 x 700 Ohm load cells.</p>	
Elapsed Timer	<p>This mode is ideal for a wide range of applications such as process timing, takt timing, countdown to completion, etc.</p> <p>START, STOP and RESET contact inputs with selectable UP or DOWN counting modes.</p>	

SENSOR INPUTS		
Input	Description	Connections
Potentiometer	<p>Ideal for position, displacement and angle applications using a resistive 3-wire potentiometer as the sensor.</p> <p>A 4-wire connection reduces the effect of cable resistance.</p>	
Pulse Rate/RPM	<p>Rate mode works well in production line applications. Measurements can be taken over short or long periods.</p> <p>You can average the rate over a chosen time period from as little as 1 second up to 24 hours.</p>	
Pulse Total	<p>Totaliser mode is ideal for most counting applications. It is easy to scale and has non-volatile memory to store the count if power is lost.</p>	
Resistance	<p>This mode is ideal for measuring the resistance of components such as inductors, heaters, transformers and earth bonds.</p> <p>The 4-wire connection gives high performance cable resistance compensation thanks to our new patented signal processor.</p>	
RTD	<p>Accepts 2, 3 or 4 wire PT100 or PT1000.</p> <p>Displays measured temperature in Centigrade, Fahrenheit, Kelvin or Rankine and has 0.1 or 1.0 degree selectable resolution.</p>	
Thermocouple	<p>Accepts type B, E, J, K, N, R, S or T thermocouples.</p> <p>Displays measured temperature in Centigrade, Fahrenheit, Kelvin or Rankine and has 0.1 or 1.0 degree selectable resolution.</p>	

OUTPUTS

Output	Description	Connections
4-20mA Active	<p>This will drive a current into a passive device (<600 Ohms) such as a moving coil meter.</p> <p>This is the most common 4-20mA output configuration.</p>	
4-20mA Passive	<p>This will modulate a current from a connected external excitation voltage.</p> <p>The output stage acts similar to a 4-20mA 2-wire transmitter.</p>	
0-10V	<p>Suitable for sending an active DC voltage signal to another device.</p> <p>Can drive into loads greater than 600 Ohms.</p>	
Alarms	<p>1, 2, 3 or 4 SPDT mechanical relays.</p> <p>Rated 2A @ 250V AC resistive load.</p>	
RS232	<p>1 or 2 RS232 output ports with selectable protocols:-</p> <p>Continuous ASCII stream Polled London ASCII Polled Modbus ASCII Polled Modbus RTU</p>	
RS485	<p>1 or 2 RS485 output ports with selectable protocols:-</p> <p>Continuous ASCII stream Polled London ASCII Polled Modbus ASCII Polled Modbus RTU</p>	

SPECIAL INPUTS		
Input	Description	Connections
Ambient Temperature	<p>A temperature sensor on the rear of the meter measures the ambient temperature.</p> <p>This measurement can be viewed on the display or used as a source for the optional outputs.</p>	<p>NO CONNECTION NEEDED</p> 
Power Frequency	<p>AC powered meters can be factory configured to measure the power frequency.</p> <p>This measurement can be viewed on the display or used as a source for the optional outputs.</p>	<p>NO CONNECTION NEEDED</p> 
Real Time Clock	<p>The clock option module provides accurate time of day or date in several formats.</p> <p>It can also be used as a day counter for "Days Since Last Accident" or to count down days to an event.</p>	<p>NO CONNECTION NEEDED</p> 

LOGIC INPUTS		
Input	Description	Connections
<p>NPN</p> <p>or</p> <p>Contact Closure</p>	<p>6 inputs configurable as:-</p> <ul style="list-style-type: none"> Tare Show Tare Reset Hold Peak Gross Peak Nett Valley Gross Valley Nett Gross Nett Mirror Image Ambient Temperature 	

ACCESSORIES		
Splashproof Cover	Wall Mounting Enclosure	DIN Rail Mounting
		

TECHNICAL DATA

Display Specifications

Type	7 segment LED
Number of Digits	6
Digit Colour	User selectable green, red or yellow
Digit Height	14.2mm (0.56 inches)
Viewing Distance	7m (23 feet)
Brightness	10 levels of adjustment
Annunciators	4 x display status, 4 x alarm status, 1 x lock status
Display Update Rate	10 readings per second

Input Specifications

Current	-40 to +40mA - 2.5 Ohm impedance - 24V @ 30mA excitation
Voltage	-20 to +20V - 1 MOhm impedance
DC Shunt or mV	-100.5 to +100.5mV - 10 MOhm impedance
Load Cell	Up to 4 x 350 Ohm or 8 x 700 Ohm cells - Nominal 8V @ 120mA excitation
Elapsed Timer	3 x NPN or contact closure inputs for START, STOP and RESET
Potentiometer	3 or 4-wire resistive
Pulse - Rate / RPM	NPN or contact closure input - 24V @ 30mA excitation - Maximum pulse rate 400Hz
Pulse - Total	NPN or contact closure input - 24V @ 30mA excitation - Maximum pulse rate 400Hz
Resistance	4-wire - 1 Ohm, 10 Ohm, 100 Ohm, 1 kOhm, 10 kOhm, or 20 kOhm ranges
RTD	2, 3 or 4-wire - PT100 or PT1000 - Centigrade, Fahrenheit, Kelvin or Rankine - 0.1 or 1.0 degree resolution
Thermocouple	Type B, E, J, K, N, R, S or T - Centigrade, Fahrenheit, Kelvin or Rankine - 0.1 or 1.0 degree resolution
Ambient Temperature	Solid state silicon chip - 0.01°C resolution - -20 to +60°C range
Power Frequency	47.000 to 63.000Hz, 95-265V AC
Real Time Clock	Internal crystal oscillator - Automatic Summer / Winter time adjustment - +/- 10 seconds per month accuracy

Power Specifications

AC Version (red connector)	95-265V AC - 47-63 Hz - 8W max. - Fuse with 2A 'T' rated (anti-surge) fuse - Also accepts 100-300V DC
DC Version (black connector)	11-30V DC - 8W max. - Fuse with 5A 'T' rated (anti-surge) fuse - Source must provide at least 2A peak current
Isolation	Switch-mode transformer galvanic isolation

Case Specifications

Bezel	96mm (3.78 inches) wide x 48mm (1.89 inches) high
Panel Cutout	92mm (3.62 inches) wide x 45mm (1.77 inches) high
Front of Panel Projection	13mm (0.51 inches)
Depth Behind Panel	125mm (4.92 inches)
Maximum Weight	360 grams (12.69 ounces) with all options installed
Case Material	Black polycarbonate

Environmental Specifications

Front Panel Sealing	IP65 (standard), IP67 with optional SPC4 cover
Rear Sealing	IP20
Storage Temperature	-25 to +60°C
Operating Temperature	0 to +50°C
Humidity	+10 to +95%, non-condensing
Altitude	-1000m to +3000m
Vibration / Shock	0-5G, less than 200Hz
Cleaning	Use only damp cloth moistened with water

TECHNICAL DATA

Analogue Output Specifications

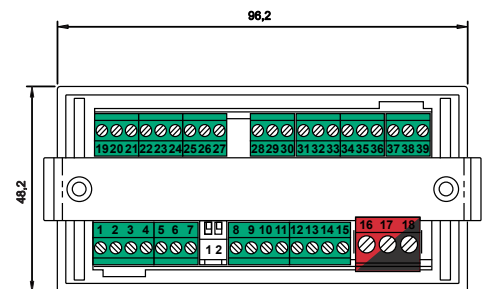
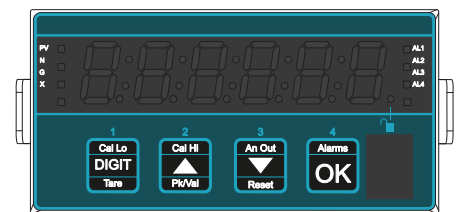
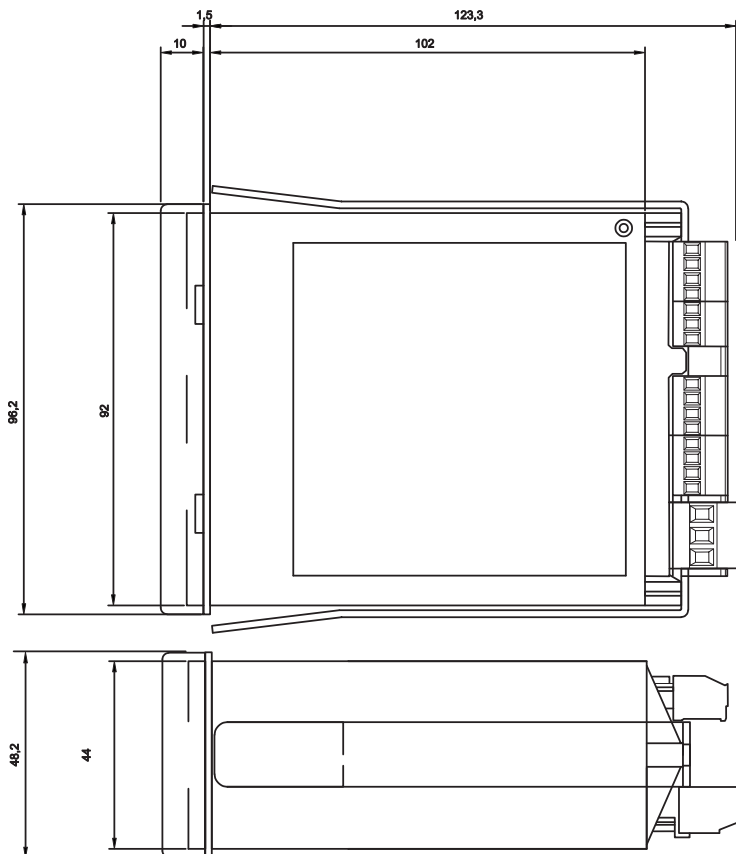
ANI Option	0-20mA or 4-20mA into loads <600 Ohms
ANV Option	0-10V into loads >600 Ohms
Galvanic Isolation	Optically isolated from all ports up to 250V AC
Response Speed	10 updates per second
Resolution	18 bit
Precision	+/- 0.05% of range
Temperature Stability	+/- 50ppm of range per °C

Alarm Relay Outputs Specifications

AL1, AL2, AL3 or AL4 Option	1, 2, 3 or 4 mechanical relays
Relay Type	Single Pole Double Throw (SPDT)
Contact Rating	2A @ 250V AC resistive load
Galvanic Isolation	Optically isolated from all ports up to 250V AC
Response Speed	10 updates per second, mechanical response 15mS

Data Ports Specifications

232 Option	RS232 full duplex
485 Option	RS485 half duplex
Galvanic Isolation	Optically isolated from all ports up to 250V AC
Response Speed	Up to 10 updates per second depending on selected baud rate
Baud Rates	300, 600, 1200, 2400, 4800, 9600, 19200, 38400 or 115200
Address Range	2 bytes, 01 to FE
Data Format	7 or 8 data bits - odd, even or no parity - 1 or 2 stop bits
Protocols	Continuous ASCII stream, Polled London ASCII, Polled Modbus ASCII or Polled Modbus RTU



ORDERING CODES		INT5	- X	- X	- X	- X	- X	- X	- X	- X
Function / Input Type:										
Digital input (counter, rate meter, elapsed timer)	D									
Power frequency monitor (AC powered only)	PFM									
Real time clock	RTC									
Universal input (analogue and digital signals)	U									
Analogue Output:										
None	0									
4-20mA	ANI									
0-10V	ANV									
Alarm Outputs:										
None	0									
1 x SPDT mechanical relay	AL1									
2 x SPDT mechanical relays	AL2									
3 x SPDT mechanical relays	AL3									
4 x SPDT mechanical relays	AL4									
Data Output 1:										
None	0									
RS232	232									
RS485 + Modbus ASCII + Modbus RTU	485									
Data Output 2:										
None	0									
RS232	232									
RS485 + Modbus ASCII + Modbus RTU	485									
Power:										
95-265V AC or 100-300V DC									AC	
11-30V DC									DC	
Options:										
Power frequency monitor (AC powered only)									PFM	
Real time clock									RTC	
Accessories:										
DIN rail mounting										DIN
IP67 front cover										SPC4
IP65 wall mounting enclosure for 1 x meter										WALLBOX
IP65 wall mounting enclosure for 2 x meters										WALLBOX2

Examples:

INT5-D-0-AL2-0-0-DC

- D = Digital input (counter, rate meter, elapsed timer)
- 0 = Analogue output not fitted
- AL2 = 2 x SPDT mechanical relays
- 0 = Data output 1 not fitted
- 0 = Data output 2 not fitted
- DC = 11-30V DC powered

INT5-U-ANI-0-0-0-AC

- U = Universal input (analogue and digital signals)
- ANI = 4-20mA output
- 0 = Alarm outputs not fitted
- 0 = Data output 1 not fitted
- 0 = Data output 2 not fitted
- AC = 95-265V AC or 11-30V DC powered