

Access Instrumentation



5000 Series

Multi-Channel Process Condition and Critical Alarm Monitor.

Description

The 5000 Series is highly versatile process condition monitor capable of the simultaneous reading of up to 24 analogue process signals. The instrument is equipped to handle most process signal types from mA and mV to RTD and Thermocouples with software selectable scaling and linearization's. Each channel is equipped with software strategies for Alarming and Logging providing the user with an array of possibilities for process monitoring.

The dual channel I/O cards are built on the proven Field 1000PLUS platform and feature high quality analogue components giving high accuracy and thermal stability.

The system is available in 6 Channel, 12 Channel and 24 Channel base configurations.

Analogue Process Signal Capability

PT100	-200 °C to 850 °C
Ni120	-70 °C to 300 °C
Cu10	-50 °C to 250 °C
Cu30	-50 °C to 25 °C
Pt20	-50 °C to 25 °C
Thermistor	0 °C to 150 °C

T/C Type J	-180 °C to 750 °C
T/C Type K	-180 °C to 1250 °C
T/C Type T	-200 °C to 400 °C
T/C Type E	-60 °C to 1000 °C
T/C Type N	0 °C to 1210 °C
T/C Type R	0 °C to 1600 °C
T/C Type S	0 °C to 1560 °C
T/C Type L	-200 °C to 900 °C
T/C Type U	-200 °C to 600 °C
T/C Type B	50 °C to 1820 °C
T/C Type C	0 °C to 2310 °C

Resistance	0 to 450Ω
Millivolts	-10mV to 10mV
	-20mV to 20mV
	-50mV to 50mV
	-100mV to 100mV
	-200mV to 200mV
Volts	-1v to +1v
	-2v to 2v
	-5v to 5v
	-10v to 10v
	-20v to 20v
Milliamps	0mA to 20mA
	0mA to 10mA

Key Features

- 6, 12 and 24 Channel DIN Enclosure with 2 part screw terminal connections to the rear.
- Channel cards may be added at any time by the user, these are available in Single or Dual Channel format.
- Each Channel has a dedicated microprocessor for high speed data acquisition.
- Universal analogue inputs supporting many industrial process signal types with high accuracy / thermal stability electronics and high performance 24 bit ADC.
- User configurable 'soft' input scaling and linearization, alarm & event triggers and data logging.
- Optional daughter board to provide Dual Alarm outputs with independent set-points and triggering strategies, including; High, Low, Rate of Change and Early Indication.
- Analogue Output repeat facility with user defined rescaling available with optional Analogue Output daughter board.
- 3.8" LCD HMI with Touch-screen interface for Channel card monitoring, local interrogation, alarm acknowledgement and system configuration.
- High speed robust and reliable MODBUS backbone between Channel cards and HMI.
- Simple setup via intuitive configuration screens on HMI.
- Auxillary communications options available for RS232, RS485 (MODBUS RTU/JBUS) and ETHERNET (MODBUS TCP) allowing 5000 units to be networked and/or interfaced to DCS & SCADA systems.

Applications

- Temperature Monitoring
- Vibration Monitoring
- Pressure Monitoring
- Flow Monitoring
- Pump Performance Monitoring

Electrical

Supply Voltage	DC Model : 24 vdc (+/- 10%) AC Model : 90 to 250 vac (50-60Hz)
Consumption	5 watts to 48 watts
Isolation	Power Supply to Logic : >1000 Vdc/ μ s Comms to Logic : >1000 Vdc/ μ s Logic to Outputs : >1000 Vdc/ μ s Channel to Channel : >600 Vdc/ μ s

Analogue Inputs

Accuracy	Measurement : $\pm 0.1\%$ of Range Linearization : $\pm 0.9\%$ of Range
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Resolution	Raw ADC : 24 bits Processed : 16 bits
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Scan Speed	<100ms
CMR	>90dB @ 50Hz 500Vdc to Earth

Temp Coefficient	± 20 ppm/degC
CJC Accuracy	± 0.1 °C

Analogue Output

Resolution	12 Bit
Accuracy	$\pm 0.1\%$

Alarm Outputs

Relay	Normally Open & Closed Contacts Load Switching: 1A @ 200v ac/dc On resistance : 150 milliohms
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Mechanical

Weight	TBA
Casing	Noryl SE1 GFN2 Glass Reinforced Plastic

Fixing	Side secured fixing clamps
Terminals	2 part cage clamp screw terminals Maximum Conductor Size : 2.5 mm ²

Environmental

Ambient Limits	Storage -20 to +70 degC Operation -10 to 50 degC Humidity 20 to 90% RH (non condensing)
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Protection	IP42 Standard
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EMC	Immunity to EN50082-2
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	Emissions to EN50081-1
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Safety	Complies with EN609050
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Functional

Delay Time	Adjustable between 0 and 255 seconds. (for each alarm trip point)
Hysteresis	Adjustable between 0 and 25% of input range in 0.1% increments. (for each alarm trip point)
Response Time	Less than 200mS
Logging	Alarm event and data logging with time stamp. Up to 32768 events/data points.

Chassis

5006-M1	6 Channel Chassis, 24v DC powered, 3.8" Touchscreen Display, No Cards fitted.
5012-M1	12 Channel Chassis, 24v DC powered, 3.8" Touchscreen Display, No Cards fitted.
5024-M1	24 Channel Chassis, 24v DC powered, 3.8" Touchscreen Display, No Cards fitted.
5006-M2	6 Channel Chassis, 90-250v AC powered, 3.8" Touchscreen Display, No Cards fitted.
5012-M2	12 Channel Chassis, 90-250v AC powered, 3.8" Touchscreen Display, No Cards fitted.
5024-M2	24 Channel Chassis, 90-250v AC powered, 3.8" Touchscreen Display, No Cards fitted.

Channel Cards

A5601	Single Channel Universal Input plug-in card. No Analogue or Relay Output Card fitted.
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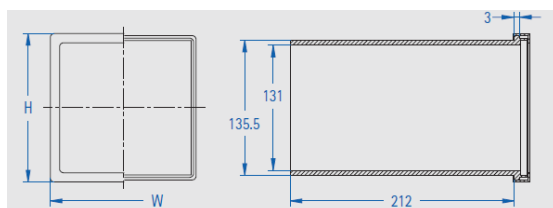
A5602	Dual Channel Universal Input plug-in card. No Analogue or Relay Output Card fitted.
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Options

A5201	4 Channel Common Alarm and Auxillary Communications (RS232/485-ModbusRTU) Card
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A5401	2 Channel Relay Output Daughter Board (for A5601/A5602 - one required per channel)
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A5501	Single Channel 0-20mA or 0-10v (link selectable) Analogue Output Daughter Board (for A5601/A5602 - one required per channel to repeat Analogue Input reading)
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Chassis	Height (H) mm	Width (W) mm
5006	144	192
5012	144	288
5024	192	432