



8204

4-Channel Scanner/ DAQ Module

The most compact Multichannel Indicator with Alarms

8204 Scanner offers multi-channel monitoring with advanced functions and simple programming features in very compact 1/8 DIN size for monitoring process values and protection application.

8204 has flexible configuration option for 4 channels accepting universal input and 4 relays to serve various applications. The unit has separate Numeric displays for CH. No. and Process Value. All Configuration and Calibration can be done from front panel keypad.

8204 has 4 relays with full mapping and logic flexibility. User has facility to program alarm, trip set-points and logic individually or group wise. Channels can be configured up to 4 groups with one relay per group; 2 groups with 2 relays per group or 1 group with 4 relays per group. One discrete LED is provided per relay for indication.

8204 has built-in Isolated RS485 serial communication port with Modbus RTU protocol and provides optional analog retransmission output with Max/Min to further interface with PLC/DAS/DCS/ SCADA.

Features

- Universal input for each Analog Input
- Compact 1/8 DIN mounting
- Front Panel Programming
- Fast Sampling rate with instantaneous relay action
- Four relays for alarm/trip
- RS485 Serial communication port for remote monitoring
- Comprehensive Alarm/Trip logic programming
- Multiple Levels of configuration and password protection
- Retransmission output (Optional)

Applications

- Generator Monitoring and Protection
- Monitoring of Air compressor, pump, transformers, fans and blowers DG temperature monitoring
- Motor protection: Winding & Bearing temperature
- Water and Waste-Water remote monitoring
- Electrical Sub-station monitoring
- Drying Ovens
- Fermentation Processes
- Flow Monitoring
- Retorts and Cooking Processes
- Heat Treatment: to achieve desired result of hardening or softening material
- Power Monitoring
- As a SCADA RTU
- Metal and mining applications
- Machine condition monitoring
- As a distributed I/O module for interface with PLC/DCS/DAS etc

Technical Specifications

Input	
No of Input	4
Input Type	Thermocouple (E, J, K, T, B, R, S, N), RTD (Pt-100, 3W), Current, Voltage
Display Range	Refer Table-1
Accuracy	±0.1% of FS ± 1 Count
ADC Resolution	17 bits
Display Resolution	0.1 / 1.0°C
Sampling Rate	TC and Linear Input : 100mSec/channel RTD Input: 200mSec/channel
CJC Error	±2.0° C
Sensor Open	All inputs except 0-5VDC / 10VDC
Sensor Burnout current	1.2µA
RTD Excitation current	1 mA (Approx.)
NMRR	> 40dB
CMRR	> 120dB
Temp-co	< 100ppm/°C
Input Impedance	> 1MΩ
Max Voltage	20VDC

Display & Keys	
Process Value	4-digit, 0.56", Red seven segment LED
Channel No	1-digit, 0.56", Green seven segment LED
Status	4 Red LEDs for Relay status, 1 Red LED Manual mode status, 2 RED LEDs for Communication
Keys	Menu/Enter, Escape, Increment, Shift Key/Decrement

Output	
Relay	
No of Relays	4
Type	Single Change over (C, NO or C, NC)
Rating	2A@230VAC/ 30VDC
Time Delay	1 to 99 secs

Retransmission Output (Optional)	
Current	0/4-20mA @ 500Ω Max
Voltage	0/1-5V, 0-10V @3KΩ Min
Accuracy	0.25% FS
Selection	Max or Min Reading of Channels

Communication Output	
Interface	RS485
Protocol	Modbus RTU
Baud Rate	9600,19,200

Power Supply	
Standard	85-265VAC / 110-300VDC
Optional	18-36VDC
Consumption	<10VA

Isolation (Withstanding voltage)

- Between primary terminals* and secondary terminals**: **At least 1500 V AC for 1 minute**
- Between primary terminals* and grounding terminal: **At least 1500 V AC for 1 minute**
- Between grounding terminal and secondary terminals**: **At least 1500 V AC for 1 minute**
- Between secondary terminals**: **At least 500 V AC for 1 minute**

* Primary terminals indicate power terminals and relay output terminals.
** Secondary terminals indicate Analog I/O signal and Communication O/P.
Insulation resistance: 20MΩ @ 500V DC between power terminals and grounding terminal.

Physical	
Dimension (in mm)	48(H) x 96(W) x 120(D)
Front Bezel (in mm)	48(H) x 96(W)
Panel Cutout (in mm)	45(H) x 92(W)
Depth behind Panel	112 mm
Enclosure	ABS Molded
Weight	300 grams approx.
Protection	IP20
Terminal Cable size	2.5 mm ²
Accessories	2 numbers mounting clamps

Environmental	
Operating Temperature	0-55° C
Storage Temperature	0-80° C
Humidity	30-95% RH non-condensing

Table 1: Display Range		
	Input Type	Ranges
Thermocouple	E	-200 °C to 1000 °C
	J	-200 °C to 1200 °C
	K	-200 °C to 1370 °C
	T	-200 °C to 400 °C
	B	450 °C to 1800 °C
	R	0 to 1750 °C
	S	0 to 1750 °C
RTD	N	-200 °C to 1300 °C
	Pt-100	-199.9 to 850.0° C
Linear	-10 - 20mV	-1999 to 9999
	0 - 75mV	
	0 - 100mV	
	0.4 - 2V DC	
	4-20 mA (Ext.100Ω)	
	0 - 2 VDC	
	0 - 20mA (Ext 100Ω)	
	0 - 5V	
	1 - 5V	
0 - 10V		

Ordering Code					
Model	Input Type	Auxilliary Power Supply	Retransmission Output Type		
8204	1	E	U1 85-265 VAC / 110-300VDC	N	None
	2	J	U2 18-36 VDC	1	4-20mA
	3	K		2	0-20mA
	4	T		3	1-5 V
	5	B		4	0-5 V
	6	R		5	0-10 V
	7	S			
	8	N			
	9	Pt-100			
	A	-10 to 20mV			
	B	0-75 mV			
	C	0-100 mV			
	D	0-2 V			
	E	0.4-2 V			
	F	0-5 V			
	G	1-5 V			
H	0-10 V				