masibus
A Sonepar Company

TPR-8208

Transformer Protection Relay

4 / 8 Channel

The TPR-8208 offers 4 / 8 channel monitoring with advanced functions and full programming features with touch sense keys in IP65 weather proof protection for monitoring process values and protection application.

The TPR-8208 is developed to safely operate medium voltage cast resin/dry type transformers at 70 °C extreme temperature. It is appropriate for installation in marshalling boxes and control rooms.

TPR-8208 has option for 4/ 8 channels accepting universal input and 4 relays to serve various applications. The unit has separate numeric displays for CH. No., Group and process value. All configuration and calibration can be done from front keypad.

TPR-8208 has 4 relays with full mapping and logic flexibility. User has facility to program alarm, trip, Fan, Fault 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. Two discrete LEDs are provided per channel and one LED per relay for indication.

The TPR-8208 is made with the purpose of storing each channel's maximum temperature. This feature display & store the maximum temperature prior to a Sensor Fault event and clears it to get a fresh reading.

TPR-8208 has built-in Isolated RS-485 serial communication port with modbus RTU protocol and provides optional analog retransmission output with max./ min. to further interface with PLC/DAS/DCS/ SCADA.

TPR-8208 is a wall mounting unit with 6 nos of PG11 glands for multi-core cable wiring. However 8 channels has an optional possibility of upto 12 nos. PG11 glands.

Features

- Universal input for each analog input
- IP65 for weather proof protection
- Easy programming by front touch sense keypad
- Fast sampling rate with instantaneous relay action
- Four relays for alarm/trip, Fan, Fault against OPEN Sensor
- Retains the maximum temperature of Each Channels
- RS-485 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
- Dry Type Transformer monitoring and protection
- Monitoring of air compressor, pump, fans and blowers DG temperature monitoring
- Motor protection: Winding & bearing temperature
- Water and waste-water remote monitoring
- Electrical sub-station monitoring
- Heat treatment: to achieve desired result of hardening or softening material
- Machine condition monitoring

TECHNICAL SPECIFICATIONS

Input

No of Channels	4 or 8
Input Type	RTD (Pt-100), Current, Voltage Thermocouple (E, J, K, T, B, R, S, N),
Display Range	Refer table-1
No of Set Point	4 (As per relay group)
Hysteresis	1 -250
Accuracy	0.1% of FS + 1 digit
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
T/C Burnout current	0.25µA
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.	2-Digit, 0.56", green seven segment LED
Group No.	1-Digit, 0.56", red seven segment LED
Status	4 Red LEDs for relay status, 1 red LED auto/manual mode status, 2 Green LEDs for communication, 1 red LED for fault, 16 red LEDs for alarms
Keys	Menu, escape / A/M, increment, shift / down / ACK

Output

Relay	
No of Relays	4
Type	Single change over (C, NO, NC)
Rating	2A@250VAC / 30VDC
Time Delay	1 to 99 secs.
Operation	Alarm, Trip, Fan
Retransmission Output (Optional)	
Current	0/4-20mA @ 500Ω max.
Voltage	0/1-5VDC, 0-10VDC @3KΩ min
Accuracy (DAC)	0.25% of FS
Selection	Max. or min. reading of channels
Communication Output	
Interface	RS-485
Protocol	Modbus RTU
Baud Rate	9600, 19200

Power Supply

Standard	85-265VAC @ 50Hz / 60 Hz / 110-290VDC
Optional	18-36VDC
Power Consumption	15VA Max.

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 or more at 500V DC between power terminals and grounding terminal.

Physical

Dimension (in mm)	200(H) x 200(W) x 120(D)
Weight	4 Kgs.
Enclosure	Steel sheet, 1.25 mm
Type of Protection	NEMA 4, IP65
Cable Entry Size / No.	6 nos. PG11 glands*
Terminal	MKDS type connector screw up to 2.5mm conductor
Mounting	Wall mount
Accessories	4 numbers mounting clamps

Enviromental

Operating Temperature	0-70° C
Storage Temperature	0-80° C
Humidity	30-95% RH non-condensing

Table 1: Display Range

Input Type		Range
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
	N	-200 °C to 1300 °C
RTD	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	No. of Input		Input Type		Auxilliary Power Supply		Retransmission Output Type	
TPR-8208	4	4 Channels	1	E	U1	85-265 VAC / 110-290VDC	N	None
	8	8 Channels	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				

**Standard 6 nos. PG11 glands are supplied for both 4/8 channel. In 8 channel upto 12 nos.PG11 glands can be provided if required at extra cost. Any change in type and no. of glands please consult factory before order placement*

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