

Quick User Guide

masibus
 A Sonepar Company

4 Channel Scanner-8204



8204 Universal Scanner

Input Type	Range	Input Type	Range
E	-200 to 1000°C	0 to 75 mV	-1999 to 9999
J	-200 to 1200°C	0 to 100 mV	
K	-200 to 1370°C	0.4 to 2 V	
T	-200 to 400°C	0 to 2 V	
B	450 to 1800°C	0 to 20 mA	
R	0 to 1750°C	4 to 20 mA	
S	0 to 1750°C	0 to 5 V	-1999 to 9999
N	-200 to 1300°C	1 to 5 V	
RTD(PT100)	-199.9 to 850.0°C	0 to 10 V -10 to 20 mV	
Table 1.1		SI (Serial Input)	-1999 to 9999

SPECIFICATIONS

ACCURACY TC:	±0.1% of instrument range ±1 digit for temp. ≥0°C OR ± 0.25% of instrument range ± 1 digit for temp. <0°C OR ±0.25% of instrument range ± 1 digit(B,R,S TYPE TC)
RTD/LINEAR:	± 0.1% of instrument range ± 1 digit
RESOLUTION TC(E,J,K,T,N)/RTD: TC(B,R,S): LINEAR:	ADC: 17 bits 0.1°C 1°C 1 Count
APPLICABLE STANDARD	DIN (ITS-90) for Thermocouple and RTD
INPUT TYPE	Refer table 1.1
SAMPLING PERIOD	TC & Linear Input: 100

PER INPUT	ms RTD: 200 ms
BURNOUT DETECTION	For TC, RTD, linear input signal It detects whether sensor is connected or not.
MEASUREMENT CURRENT(RTD)	1 mA
INPUT IMPEDANCE	>1 MΩ for TC/RTD/Linear input
NMRR	> 40 dB (50/60 Hz)
CMRR	> 120 dB (50/60 Hz)
ALLOWABLE WIRING RESISTANCE FOR RTD	Maximum 15 Ω/wire (Conductor resistance between three wires should be equal).

Retransmission Output (Optional)

NUMBER OF OUTPUTS	1
OUTPUT SIGNALS	0-20mA, 4-20mA, 0-5V, 1-5V or 0-10V DC
LOAD RESISTANCE	≤500 ohms for current o/p ≥3K ohms for voltage o/p
OUTPUT ACCURACY	±0.25% of span
OPERATION MODES	Internal: Physical AI Values, Modbus AI Values External: Direct Commands Through Modbus Master

Relay Contact Outputs

NUMBER OF OUTPUTS	4
OUTPUT SIGNAL	Two terminals (NC/NO and C) (NC/NO is selectable by jumper setting)
RELAY CONTACT RATING	250 VAC / 30 VDC @ 2A
OPERATION MODES	Internal: Physical AI Values, Modbus AI Values External: Direct Commands Through Modbus Master

Communication Specification

COMMUNICATION TYPE	Half duplex/Asynchronous
COMMUNICATION PROTOCOL	MODBUS RTU. All parameters are Configurable through MODBUS Protocol.
MAXIMUM NO. OF UNITS	32
COMMUN. ERROR DETECTION	CRC Check

Display Specification

PV DISPLAY	4-digits, 7-segment, Red LEDs , 0.56" character height
CHANNEL NO. DISPLAY	1-digits, 7-segment, Green LEDs, 0.56" character height
STATUS INDICATING LEDs	4-Red LEDs for Relay status, 1-Red LED for Manual mode status, 2-Red LEDs for Communication

Power Supply Specification

RATED VOLTAGE	85-260 VAC-50/60Hz 100-300 VDC or 18-36 VDC
POWER CONSUMPTION	Max. <10 VA
DATA BACKUP	Non-volatile memory

Isolations (Withstanding Voltage)

- Between primary terminals* and secondary terminals**: 1500VAC for 1 minute
 - Between secondary terminals: 500V AC for 1 minute
- * Primary terminals indicate power terminals and relay output terminals
 ** Secondary terminals indicate analog input signals, Digital Contact output terminals, communication terminals and Ethernet N/W terminal

Insulation Resistance: 20MΩ or more at 500 V DC

Signal Isolation Specifications

Signals	Signal Isolation
PV Input Terminals	Not isolated input terminals and from the internal circuit. But isolated from other input/output terminals.
Retransmission Output terminals	Not isolated from current or voltage outputs but Isolated from other input/output terminals and internal circuit.
RS-485 Communication	Isolated from other input/output terminals and internal circuit
Relay contacts Control output Terminals	Isolated between contact output terminals and from other Input/output terminals and internal circuit.

Power Terminals	Isolated from other input/output terminals and internal circuit
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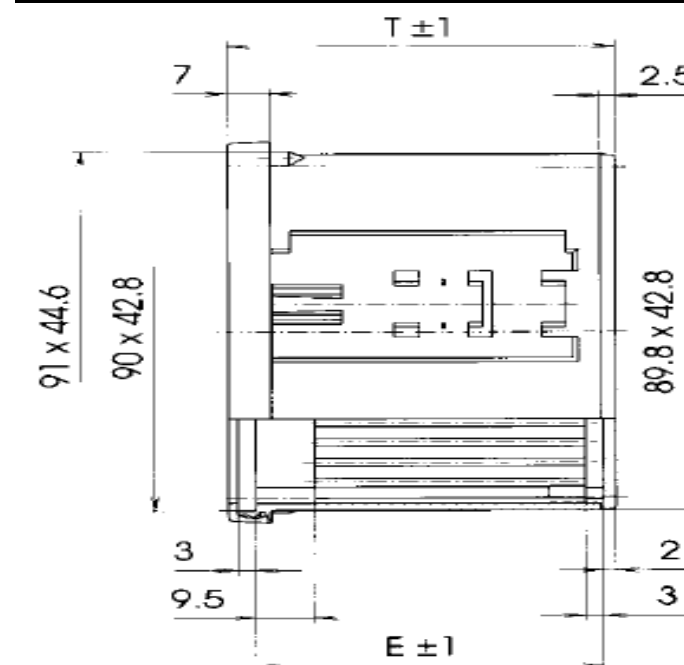
Environmental Specification

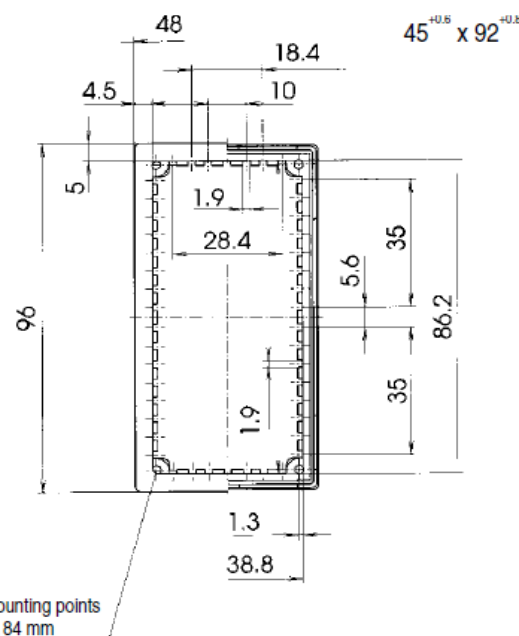
AMBIENT TEMPERATURE	0 to 55°C
HUMIDITY	30% to 95% RH (Non-Condensing)
TEMPERATURE COEFFICIENT	•For Data < 100ppm •For Retransmission < 150ppm
INSTRUMENT WARM-UP TIME	>30 mins after power on

Construction, Installation, and Wiring Specification

MATERIAL	ABS resin and Polycarbonate
CONSTRUCTION	Only the front panel is dust-proof
CASE COLOR	Black
WEIGHT	< 0.4 kg
DIMENSIONS	48 (W) x 96 (H) x 130 (depth from panel face) mm
INSTALLATION	Panel-mounting type. With Top and Bottom mounting hardware (1 each)
PANEL CUTOUT	46 x 92 mm
FRONT BEZEL	48 x 96 mm

MOUNTING DETAILS



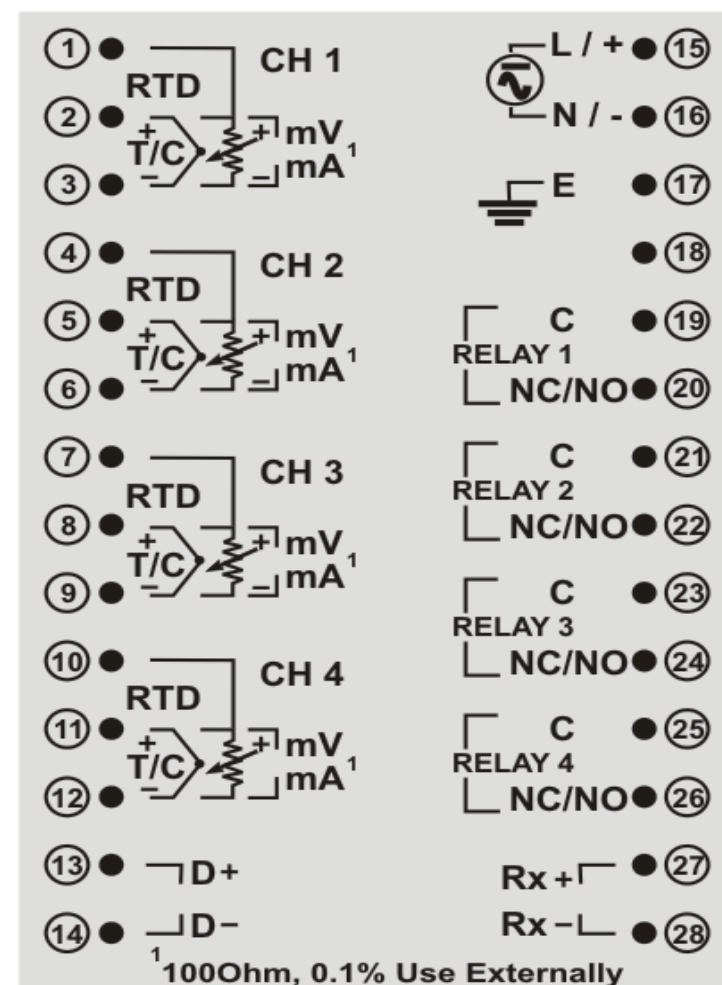


FRONT PANEL DESCRIPTION

Name of Part	Function
	It is used to enter in the sub menu (various levels) and save the parameters to non-volatile memory
	It is used to come out from any sub menu (various levels) to the run mode. It is used for come out of the manual mode to auto mode too
	It is used to increment the parameter for selection.
	It is used to Shift the digit to set the parameter or decrement the parameter
PV	Displays Process Value. Display Parameter Name When You Set Parameter. Displays Error Message When An Error Occurs.

CH No.	Displays Channel Number in run mode. Also it will display relay number (01 – 04) in set mode (i.e.R.1,R.2,R.3,R.4). It will also display Group no(GP 1,GP 2/GP 1,GP 2,GP 3,GP 4) in set mode
RL1, RL2, RL3, RL4	When Respective Relay LED Lits (In Red) OR When Channel is OPEN(Channel no. is corresponding to Relay no.)
A/M	If LED is on, it indicates Manual mode and if LED is off Auto Mode.
Rx/Tx	When Communication on, two LEDs (In Red) blink.

BACK PLATE CONNECTION DETAIL



RELAY OUTPUTS

Following function can be set for Relay outputs for **do.op** in Int.r mode.

Relay Function: Relay function can be selected as ALARM or TRIP.

- If relay is selected as ALARM, when abnormal condition occur Relay will ON, once normal condition after abnormal condition occur Relay will OFF.
- If relay is selected as TRIP, when abnormal condition occur Relay will ON, once normal condition after abnormal condition occur Relay will ON. Relay will be off through Acknowledge.

Relay Delay: A time delay can be provided for the actual output.

Relay Open Sensor: Open sensor up scale or down scale can be selected for each relay output.

Relay Mapping: Refer Menu layout LEVEL - 2

Relay Types: Various relay operations are shown in the reference figure. (High, Low, Very High- High, Low-Very Low, High- Low)
For relay types selection Refer Menu layout LEVEL-2

Following function can be set for Relay outputs for **do.op** in M.bus mode.

In Modbus mode, digital outputs (DO 1–4) can be controlled using standard function codes. Use FC5 (Single Coil Write) to turn a single relay ON or OFF, e.g., turn Relay 2 ON. Use FC15 (Multiple Coil Write) to control multiple relays at once, e.g., turn Relay 1 and Relay 3 ON while Relay 2 and Relay 4 are OFF.

CONTROL OUTPUT (ON/OFF CONTROL)

ON/OFF Controller is the simplest form of temperature control device. The output from the device is either on or off, with no middle state. An on-off controller will switch the output only when the temperature crosses the set point. For heating control, the output is on when the temperature is below the set point, and off above set point. Since the temperature crosses the set point to change the output stage, the process temperature will be cycling continually, going from below set point to above, and back below.
In cases where this cycling occurs rapidly, and to prevent contactors and valves from getting damaged, an on-off differential, or "hysteresis," is added to the controller operations. This hysteresis assures, if temperature exceed set point by a certain amount before then only output will turn off or on again. On-Off hysteresis prevents the output from "chattering" or making fast, continual switches if the cycling above and below the set point occurs very rapidly.

Relay type High (H-ON):
For High type of set value, once process value reaches up to set point + Hysteresis value, relay will be ON after few seconds (as per relay delay) and it will be ON until process value goes down to Set point.

Relay type Low (L-ON):
For Low type of set value, once process value reaches down to set point - Hysteresis value relay will be ON after nearly few seconds (as per relay delay) and it will be ON until process value goes up toward Set point.

NOTE:
8204 has both Control Logic (ON-OFF) & Alarm Logic. If Control Logic (ON-OFF) is required, rloP in lvl2 must be selected as Co. Whenever Control Output(ON-OFF) logic is selected , all relays are mapped as shown in chapter no.6. As well as relay latch is off and relay group is assigned as relay per group 1. In this logic, user cannot change relay mapping, relay latch and relay group and user cannot acknowledge relays.

For operation manual please visit www.masibus.com
Specifications are subject to change without notice due to continuous improvements.
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