masibus
A Sonepar Company

Quick User Guide
8 Channel Scanner-8208

8208 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	
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: RTD/LINEAR:	±0.1% of instrument range ±1 digit for temp. ≥0ºC OR ± 0.25% of instrument range ± 1 digit for temp. <0ºC OR ±0.25% of instrument range ± 1 digit(B,R,S TYPE TC) ± 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 TC & RTD
INPUT TYPE	Refer table 1.1
SAMPLING PERIOD PER INPUT	100 ms for TC and Linear Input and 200 ms for RTD
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 & 100 ohms for mA 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)
RELAY CONTACT RATING	250 VAC / 30 VDC @ 2A
OPERATING / RELEASE TIME	<10 ms
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	2-digits, 7-segment, Green LEDs, 0.56" character height
RELAY GROUP DISPLAY	1-digits, 7-segment, Red LEDs, 0.56" character height
STATUS INDICATING LEDs	16-Red LEDs for Alarm status, 4-Red LEDs for Relay status, 1-Red LED for Manual mode status, 1-Red LED for Fault status, 2-Green LEDs for Communication

Power Supply Specification

RATED VOLTAGE	85-260 VAC-50/60Hz 100-300 VDC or 18-36 VDC
POWER CONSUMPTION	Max. 15 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: 20M or more at 500 V DC
Signal Isolation Specifications

Signals	Signal Isolation
PV Input Terminals	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

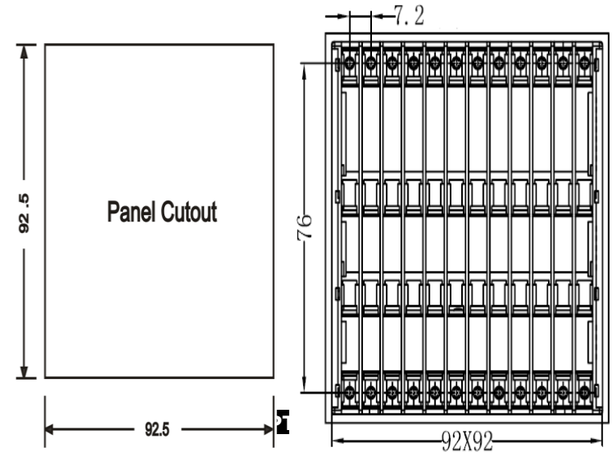
Environmental Specification

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

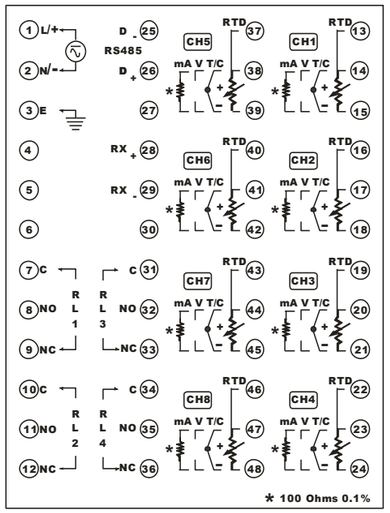
MATERIAL	ABS resin and Polycarbonate
CONSTRUCTION	Only the front panel is dust-proof
CASE COLOR	Black
WEIGHT	< 0.5 kg
DIMENSIONS	96 (W) x 96 (H) x 110 (depth from panel face) mm
PANEL CUTOUT	92.5 + 0.8(W) x 92.5 + 0.8(H) mm
INSTALLATION	Panel-mounting type

MOUNTING DETAILS



Name of Part	Function
	It is used to enter in the sub menu (various levels) and save the parameters to non-volatile memory
ESC	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
A/M	It is used to switch between auto to manual mode and manual to auto mode. During manual mode Increment key is used to change channel number
DATA	Displays Process Value. Display Parameter Name When You Set Parameter. Displays Error Message When An Error Occurs.
CHANNEL	Displays Channel Number in run mode. Also it will display relay number (01 – 04) in set mode
GROUP	Displays Group Number for Relay Mapping
RL1, RL2, RL3, RL4	When Respective Relay LED Lits (In Red)
AL1	When Alarm1 Occurs, Respective Alarm LED for Channel-1 to 8 will Lit (In Red).
AL2	When Alarm2 Occurs, Respective Alarm LED for Channel-1 to 8 will Lit (In Red).
MAN	If LED is on, it indicates Manual mode and if LED is off Auto Mode.
T1,R1 & T2,R2	When Communication on, two LEDs 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.

MENU LAYOUT

Level-1:

Parameter		Setting name and description	Default value
Symbol	**Name**		
pwd (PWD)	Level-1 Password	0 to 9999	0000
Sp.1 (SP.1)	Target Set point-1	SetPoint-1 for Channel 1 to 8.	0100 (for all 8 channels)
SP.2* (SP.2)	Target Set point-2	SetPoint-2 for Channel 1 to 8.	0200 (for all 8 channels)
Hys (HYS)	Hysteresis	Hysteresis for Channel 1 to 4.	0002 (for all 8 channels)

***** Shows only if Relay group 2 is selected

Level-2:

Parameter		Setting name and description	Default value
Symbol	**Name**		
pwd (PWD)	Level-2 Password	0 to 9999	0000
inpt (inP.t)	PV Input Type	Input type for 1-8 channel	K-TC
Pv.hi (PV.HI)	Process value range high setting	Range of the sensor /-1999 to 9999 (for linear input types)(1-8 Channel)	1370
Pv.lo (PV.LO)	Process value range lower setting	Range of the sensor /-1999 to 9999 (for linear input types)(1-8 Channel)	-200
dp (dP)	Decimal Point Setting	0 to 3(1 – 8 Channel)	0
Rl.lg (rL.LG)	Relay Logic	**Nrml / flsf** 0:Noraml 1:Fail Safe	Normal
Rl.fn (rL.Fn)	Relay Function	**ALRM / TRiP** 0:ALARM 1:TRIP	Alarm
Rl.dl (rL.dL)	Relay Delay	1 to 99 seconds	1 second
Rl.os (rL.o.S)	Relay Open sensor	**up / DoWn** 0:DOWN 1:UP	Up Scale
Rl.mp (rl.mp)	Relay mapping	Relay Configuration	-
Rl.tp (rl.tp)	Relay Group Type	Relay Configuration	-

Level-3:

Parameter		Setting name and description	Default value
Symbol	**Name**		
pwd (PWD)	Level-3 Password	0 to 9999	0000
Skip (skip)	Channel skip/Unskip selection.	**yes / no** 0:NO 1:YES	0(for all 8 channel
Rl.lH (rL.LH)	Relay Latch	**on / off** 0:OFF 1:ON	0
Rl.Gp (rL.GP)	Relay Group	**RGP.4 / RGP.2** 0:Relay Group-4 1:Relay Group-2	1
SCAn (SCAn)	Scan Time	1 to 250 seconds	1
A.CJC (A.CJC)	Auto cold junction(Only applicable for TC input type	**yes / no** 0:NO 1:YES	1
F.CJC (F.CJC)	Fix cold junction(Only applicable for TC input type	0.0 to 60.0 Deg C	0.0 Deg C
Sr.no (Sr.no)	Unit ID	1 to 247	1
BAUd (baud)	Communication Baud rate	**9600 / 19.2K** 0:(9600) – 9600 bps 1:(19.2K) – 19.2 Kbps	19.2k bps
Pr.St (Pr.St)	Parity/Stop bit selection	**P.N.S.1 / P.N.S.2 / P.O.S1 / P.E.S.1** 0:(P.N.S.1)-parity none-stop bit-1 1:(P.N.S.2)-parity none - stop bit-2 2:(P.O.S.1)-parity odd - stop bit-1 3:(P.E.S.1)-parity even - stop bit-1	No parity /Stop bit - 2
T.ouT (t.out)	Timeout for display back to Run Mode	10 to 100 Seconds	60
RT.o.S (rt.o.s)	Retrasmission Open sensor	**Up / Down** 0:DOWN 1:UP	1
Rt.tp (rt.tp)	Retransmission Output Type	**0-20/ 4-20/ 0-5v/ 1-5v/ 0-10v** 0:(0-20) – 0-20mA 1:(4-20) – 4-20mA 2:(0 - 5) – 0 – 5volt 3:(1 - 5) – 1 – 5volt 4:(0 – 10) - 0 -10volt	1
Rt.dr (rt.dr)	Retransmission direction	**Dir / rev** 1:(dir) 0: (rev)	1
Rt.CH (rt.CH)	Retransmission Channel	1 to 8 channel	1
Rt.rd (rt.rd)	Retransmission Channel Value	**MAx / Min / avg** **0**: (Min) 1: (Max) 2: (Avg)	1
S.Pwd (S.PWD)	Password Set password to lock selected level	0 to 9999	0
do.oP	Digital Output Operation (Relay) (Internal/M.bus)	**Int.r/M.bUS** 0: (Int.r) 1:(M.bUS)	0
rt.oP	Retransmission Analog Output Operation (Internal/M.bus)	**Int.r/M.bUS** 0: (Int.r) 1:(M.bUS)	0
Si.to	Serial Input communication Timeout	**1-255(Sec)**	30
C.b.dP	Serial Input Write communication break Display	**LSt.P/----** 0: (LSt.P) 1: (----)	0
do.to	Timeout for Relay(Digital output) operating in M.bus mode.	**0(off)/1-255 Sec (on)** 0:off 1-255 Sec (ON)	0
rt.to	Timeout for Retransmission operating in M.bus mode.	**0(off)/1-255 Sec (on)** 0:off 1-255 Sec (ON)	0

rt.pv	Retransmission Output Predefine Value in M.bus mode.	**0:** Scale Low **1:** Scale High	0

Calibration:

Parameter		**Setting name and description**	**Default value**
Symbol	**Name**		
pwd (PWD)	Password	0 to 9999	0000
amb (Amb)	Ambient	Ambient adjustment	-
CAL.Z (CAL.Z)	Thermocouple, Rtd and Linear Zero Calibration	Depending on PV sensor type selected	-
CAL.S (CAL.S)	Thermocouple, Rtd and Linear Span Calibration	Depending on PV sensor type selected	-
Rtr.Z (rtr.Z)	Retransmission voltage and current Zero calibration	Depending on Retrasmission type selected	-
Rtr.S (rtr.S)	Retransmission voltage and current Span calibration	Depending on Retrasmission type selected	-

Factory Reset Parameters:

Parameter		**Setting name and description**
Symbol	**Name**	
Pwd (Pwd)	Password	0 to 9999
L.def (L.dEF)	LOAD Default	**CAL\PARA\ all** (CAL)\(PARA)\(ALL) **CAL-** Only calibration set to default value **PARA-** All parameters excluding calibration will set to default value **ALL-**Calibration and parameters will set to default value

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