

Process Scanner (Model 85XX)



Masibus' continues to be the leader in the process scanner market with its innovative product features. Model 85XX is Masibus' flagship product designed for versatile industrial monitoring and machine protection applications.

Model 85XX is the latest and most advanced multi-channel monitoring and alarm annunciation system. This is one of the popular models among our OEMs & end users. Our scanner product range is now serving market needs for more than 20 years & still going strong due its excellent performance, stability & reliability.

Model 85XX features configurable and universal input types per channel and displays sequentially in engineering unit. Model 85XX is modular in design and all I/O cards are plug-in type. Model 85XX comes in three variations 8/16/24 channels. 8/16 Channel scanner is capable of field upgrade for higher channels. In addition to most of popular process inputs, Model 85XX can also accept special RTDs like Cu-53 & Pt-46 3W. Option for channel to channel online isolation up to 125V AC and 300V DC and off-line isolation up to 500VDC is available for critical applications.

The terminal back-plate is pluggable type which can be detached from the instrument without removing field connections, saving lot of maintenance time. This unit is fully programmable, configurable from front keys and also by software. Calibration is done digitally using front keys, without trim-pots.

Model 85XX comes with password protection for all configurable data. User can program individual alarm and trip set points and logic individually or in group. Channels can be configured up to 6 groups with two relay outputs per group. Two discrete LEDs are provided per channel for visual annunciation. Model 85XX also has optional retransmission output (up to 4) which are user configurable channel or group mapping. Model 85XX also provides serial communication as an option.

Features

- *Micro-controller based advanced process scanner*
- *8/16/24 channel configuration*
- *Universal input for each channel-mix*
- *Most flexible, user defined alarm/trip logic*
- *Individual or group alarms*
- *One-shot algorithm*
- *Options :*
 - *Upto 4 Retransmission output (Isolated)*
 - *RS 485 Serial communication*
 - *Direct serial printer interface*
 - *48 open collector outputs*
 - *Channel to channel input isolation*
 - *Weather proof/ flame proof enclosure*

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TECHNICAL SPECIFICATIONS 85XX

DISPLAY	
Channel number	2 digit 0.56" Red seven segment LED's
PV display	4 digit 0.56" Red seven segment LED's
Mode selection	Discrete Red LED's Individual discrete Red LED's to indicate channel status.
INPUT	
	Universal Input
No. of inputs	8,16 or 24
Thermocouple type	E, J, K, T, B, R, S (ANSI Standard)
RTD	Pt 100, Pt 46, CU-53 3-wire
Linear	4-20 mA / 1-5 V DC / 0-20 mA / 0-5 V DC (250 ohm/0.1% external Resistor required)
Digital input	Wetted internally Digital input is mapped on 0-5V input and display is as "ON " if input voltage is less than 2.5v DC and "OFF" if input voltage is greater than 2.5v DC. The reverse feature can be obtained on using UPSCALE/DOWN SCALE of open sensor. There is no relay or any output action for digital input
CJC compensation	Automatic for thermocouple types
Three wire cancellation	Automatic by software for RTD types
Accuracy	± 0.1% of FS ± 1 count
Sampling Speed	T/C & Linear Input -250 mS per channel RTD Input - 450 mS per channel
Display Scan Rate	Setting from 1 to 99 seconds
CMRR	> 120 db @ 50Hz
NMRR	> 40 db @ 50Hz

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Range	
E	-200 to 1000 °C
J	-200 to 1200 °C
K	-200 to 1372 °C
T	-200 to 400 °C
B	400 to 1820 °C
R	0 to 1768 °C
S	0 to 1768 °C
CU-53	-210 to 210 °C
PT46	-200 to 600 °C
PT100(RTD 1)	-199 to 850 °C
PT100 (RTD 0)	-199.0 to 200.0 °C
4-20mA - Field scalable	-1999 to 9999 Counts
0-5 V - Field scalable	-1999 to 9999 Counts
Calibration	
Ambient, Zero and span adjustable by digital calibration through front panel keys. No trim-pots	
Zero Span Calibration of output through front panel keys	
One shot Calibration of both input and output	
Self check calibration through front panel keys	
Controls	
Verify, Increase, Decrease, Auto/Man, Next/Group Check, Skip/Self Check, AI1/AI2, Scan Time/Print Time and Enter/ ACK keys for operation, programming & calibration	
Serial Communication	
Isolated RS232/485 Serial Communication	
Protocol MODBUS RTU or Standard Serial Printer Output	

Data Logging(Optional)

Periodic logging:

Memory Capacity: **5MB Flash**

Real Time Clock

Data Log: Measured Value with Time stamping.

Log Period: 1 minutes to 99 minutes

Channel Selection: Any Channel can be configured for data logging or Data Logging on demand, separate key available as "DATA LOGGING" facilitates the user to log the required channel data on its invoking.

Max. Total records : 60964

Event logging:

Memory Capacity: 1MB Flash

Real Time Clock

Data Save: Measured Value with Time stamping.

Channel Selection: Any Channel can be configured for data logging. OR Data Logging on demand, separate key available as "DATA LOGGING" facilitates the user to log the Required channel data on its invoking.

Max. total records : 23800

Note: Once datalogging facility is opted in Scanner, PC based mscan software is supplied as standard for scanner configuration, calibration and fetching logged data from scanner memory.

OPTIONS FOR AUXILIARY OUTPUTS

	Relay card	Analog Output Card	Open Collector Card	Printer Card
Slot 1	2relay/1relay(per group) 3 groups(1 to 3) with 2 set points/ 6 groups(1 to 6) with 1 set point	Two Isolated Retransmission groups (Gr. No.: 1 and 2)	24 Open Collector Outputs	
Slot 2	3 groups(4 to 6) with 2 set points 6 groups(7 to 12) with 1 set point	Two Isolated Retransmission groups (Gr. No.: 3 and 4)	24 Open Collector Outputs	Centronics Printer Port interface
Common Description	2A@230V A.C. with N.O./C/N.C. Relay Mapping possible with number of channels	Groups:- MAX or MIN Outputs:- 4-20mA Accuracy:- 0.25% of Range Load:- 250 Ohms	24V D.C. @ 100mA externally wet Contacts	Parallel printer port

NOTE: The possible combinations are explained in the operational manual in Topic no. 8.

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General	
Power supply	85V to 265V AC 50 Hz 24 V DC, 125 to 280 VDC, 110 VDC optional
Ambient temperature	0 to 55 °C
Humidity	Up to 95% RH (Non-condensing)
Power consumption	Less than 20 VA
Scanning time	For T/C and Linear input - 250 mS For RTD - 450 mS
Physical	
Case	M.S. powder coated with ABS molded bezel
Terminals	Screw type, can accept up to 2.5 mm ² wire
Bezel size	96(W) X 192(H) (all in mm)
Depth behind panel	Less than 250mm (with terminal plate)
Panel cutout	92(W) X 188(H) (all in mm)
Special Features	
	Real time RTC interface for Serial or parallel printer output (option)
	Print on Time and Hot printing feature
	Print time setting from 0-99 minutes
	Scanner is fully addressable and configurable through software on MODBUS protocol
Other Options	
	Channel to channel online isolation up to 125V AC and 300V DC and off-line isolation up to 500VDC is available for critical applications
	PCLOG software available for real time display, alarm, trend and reporting purpose
Relay Logic	
Alarm AL1	Momentary alarm (when in abnormal condition ACK is pressed) Condition - high/ low/ vlow Lamp - on/ off/ flash/ latch Relay - on/ off/ latch
Alarm AL2	Momentary alarm (when in abnormal condition ACK not pressed) Condition - vhigh/ high/ low Lamp - on/ off/ flash/ latch Relay - on/ off/ latch

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Alarm AL1	Maintained alarm (when in abnormal condition ACK is pressed) Condition - high/ low/ vlow Lamp - on/ off/ flash/ latch Relay - on/ off/ latch
Alarm AL2	Maintained alarm (when in abnormal condition ACK not pressed) Condition - vhigh/ high/ low Lamp - on/ off/ flash/ latch Relay - on/ off/ latch
NOTE: The possible combinations are explained in the operational manual in Topic no. 12.	
Protection	
Input range protection	This restricts accidental wrong setting of set-point Instrument displays 'OVER' and 'UNDR'
Input open protection	Upscale/downscale (programmable)
Operation modes	
Run mode	Channel window will display current channel number and data window will display process value.
Auto/manual mode	Auto mode displays all un-skipped channels sequentially where as manual mode displays one channel selected manually continuously.
Program mode	This mode is used to display/ change alarm limits, scan time and skip status of channels.
Configuration mode	This mode is used to change basic configuration of unit like scanner type, input type, number of groups, set-point type, abnormal status, relay status, alarm latching, numbers of channels in group, open sensor, hysteresis, zero and span value, decimal point position, password, serial number, serial output type, baud rate and open collector type.
Verify mode	This mode is to verify the alarm units, scan time and channel skip information during run time.
Calibration mode	This mode is used to calibrate ambient, zero and span.

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Process Variable MODBUS Addresses

Sr.no	Analog Parameters	Absolute Address	Type of Access	Parameter Type
1.	CH1	40001	Read only	Int
2.	CH2	40002	Read only	Int
3.	CH3	40003	Read only	Int
4.	CH4	40004	Read only	Int
5.	CH5	40005	Read only	Int
6.	CH6	40006	Read only	Int
7.	CH7	40007	Read only	Int
8.	CH8	40008	Read only	Int
9.	CH9	40009	Read only	Int
10.	CH10	40010	Read only	Int
11.	CH11	40011	Read only	Int
12.	CH12	40012	Read only	Int
13.	CH13	40013	Read only	Int
14.	CH14	40014	Read only	Int
15.	CH15	40015	Read only	Int
16.	CH16	40016	Read only	Int
17.	CH17	40017	Read only	Int
18.	CH18	40018	Read only	Int
19.	CH19	40019	Read only	Int
20.	CH20	40020	Read only	Int
21.	CH21	40021	Read only	Int
22.	CH22	40022	Read only	Int
23.	CH23	40023	Read only	Int
24.	CH24	40024	Read only	Int

ORDERING CODE

Model	No of Input	Input type/Configuration					X Datalogging	PS	Communication		Display Col.	Mounting		Auxiliary o/p				
85XX	X	XX	X			N None	XX	X		X	XX		XX					
						Y Yes #								Relay	OC	AO		
8	Eight	NF	Non Iso. Fix	1	E		U1	85-265VAC	N	None	R	Red	P0	Panel	XX	0	0	0
A	Sixteen	NM	Non Iso. Mix	2	J		U2	125-280VDC	1	RS232	G	Green	W1	Wall-IP55	XR	1	0	0
B	Twenty four	IF	Isolated Fix	3	K		A3	24VDC	2	RS485			FP	Wall-FLP	XO	0	1	0
		IM	Isolated Mix	4	T		A4	110VDC	3	Printer Serial					XA	0	0	1
				5	B				4	Printer Parallel					RR	2	0	0
				6	R										OO	0	2	0
				7	S										AA	0	0	2
				9	Pt-100, 3W										RA	1	0	1
				A	Cu-53													
				B	Pt-46													
				C	4-20mA													
				D	0-20mA													
				E	1-5VDC													
				F	0-5VDC													
				S	Special*													

0, 1, 2 - Number of cards
 Note:
 1. With Mix input option-No AO card
 2. If printer parallel option is selected RR, OO, AA, RA option is not available.

- Printer port (serial / parallel)
 is not available in communication.

* - Consult factory

X - Specify from table