



85XX⁺ Scanner

Monitor. Protect. Control.
Annunciation. Communication. Logging.



The 85XX⁺ is an upgrade on the most successful model 85XX; additional capabilities have been added by way of multi-serial ports, Ethernet port, USB port, Profibus, Scanning speed and alphanumeric display.

Modular and Expandable

85XX⁺ is modular in architecture and expandable, 5 I/O slots can accommodate a mix of Analog Input, Digital Input, Open collector output, Analog output or Relay output to suit different applications in Power, Water, Pharma, Pipeline and Infrastructure Industries. All field inputs are wired by Pre-fab cables directly into panel terminals.

Configuration

85XX⁺ can be configured using **mSCAN⁺** software which is very user friendly; the unit can also be edited by front keyboard and display. The unit has numeric and alpha-numeric displays for value and tag display, Alarm/Trip and control status are displayed by discrete LEDs on front fascia.

Communication

85XX⁺ comes with one RS485 port as a standard, a second RS485 port or a Ethernet Port, Profibus DP & USB port are options to enhance the communication capabilities of the unit and use it as an RTU, Alarm controller or protection device for motors, transformers, indicator, logger etc

Control or Alarm or Trip

The 8 Relay outputs can be freely mapped to any channel set points and configured as Alarm or Trip functionality with Fail-Safe or Normal Logic.

The 24 OC outputs can be used as On/Off control output for individual channel or as a status output for Alarm condition.

Analog Output

An isolated 4-20 mA Re-Transmission output option is available for onward transmission to PLC/DCS/Recorder/SCADA. Max 8 output per card is possible.

Features

- Compact and Rugged
- Extruded Aluminum Chassis with IP-55 front fascia
- Alpha-Numeric display for programmable tag no./ Engineering unit
- EMI/EMC Type test qualified & CE Marked
- 3 I/P and 2 O/P Slots capacity
- Max Configuration: 24 AI / 8 AI & 16 DI + 8 Relay + 24 OC / 8 AO
- 8 channel Universal Analog Input Module
- 16 channel Digital Input Module (Optional)
- 8 Relay output Module (Optional)
- 24 Open Collector Output Module (Optional)
- Analog Output (Optional)
- Fast sampling and generation of Alarm/Trip
- Comprehensive alarm/trip logic / control
- User free mapping of Relay to Channels
- 2X RS485 Serial communication ports
- 1X Ethernet port (Optional)
- 1X USB port (Optional)
- 1X Profibus-DP port (Optional)
- Modbus RTU over serial and Modnet over ethernet Protocols
- Windows based free **mSCAN⁺** configuration software
- Datalogging option

Applications

- Substation Monitoring
- Motor/Generator Monitoring and Protection
- Transformer monitoring and protection
- Compressor/Pump/DG set monitoring
- Asset Monitoring
- As a Serial/Ethernet RTU
- Remote I/O module
- Multi Point On/Off control
- Pipeline Heat Tracing circuit control
- Backfilling with PC log software

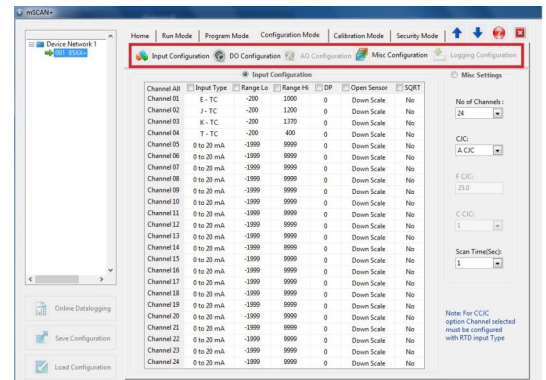
User-friendly Programming and Monitoring

mSCAN⁺ Software

mSCAN⁺ Software is used to Monitor and Configure the Multichannel Scanner

- Auto device discovery of 85XX+ over RS485 Port
- Run Time Data monitoring
- Configuration through RS485 and Ethernet Port
- Data Log Retrieval(Periodic and Event) in .xlsx and .pdf file formats
- Online Data logging in .xlsx format
- Report Generation
- Alarm/Trip Setpoints
- Time Stamping

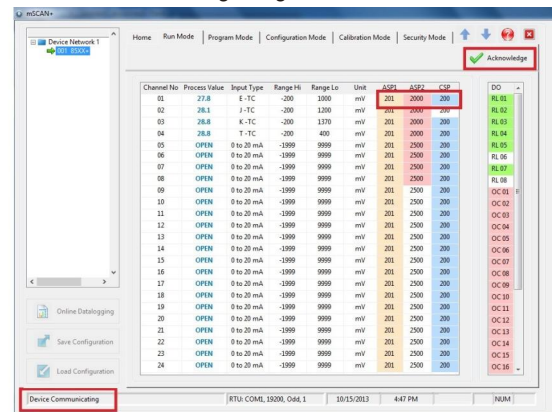
Programming using **mSCAN⁺** software



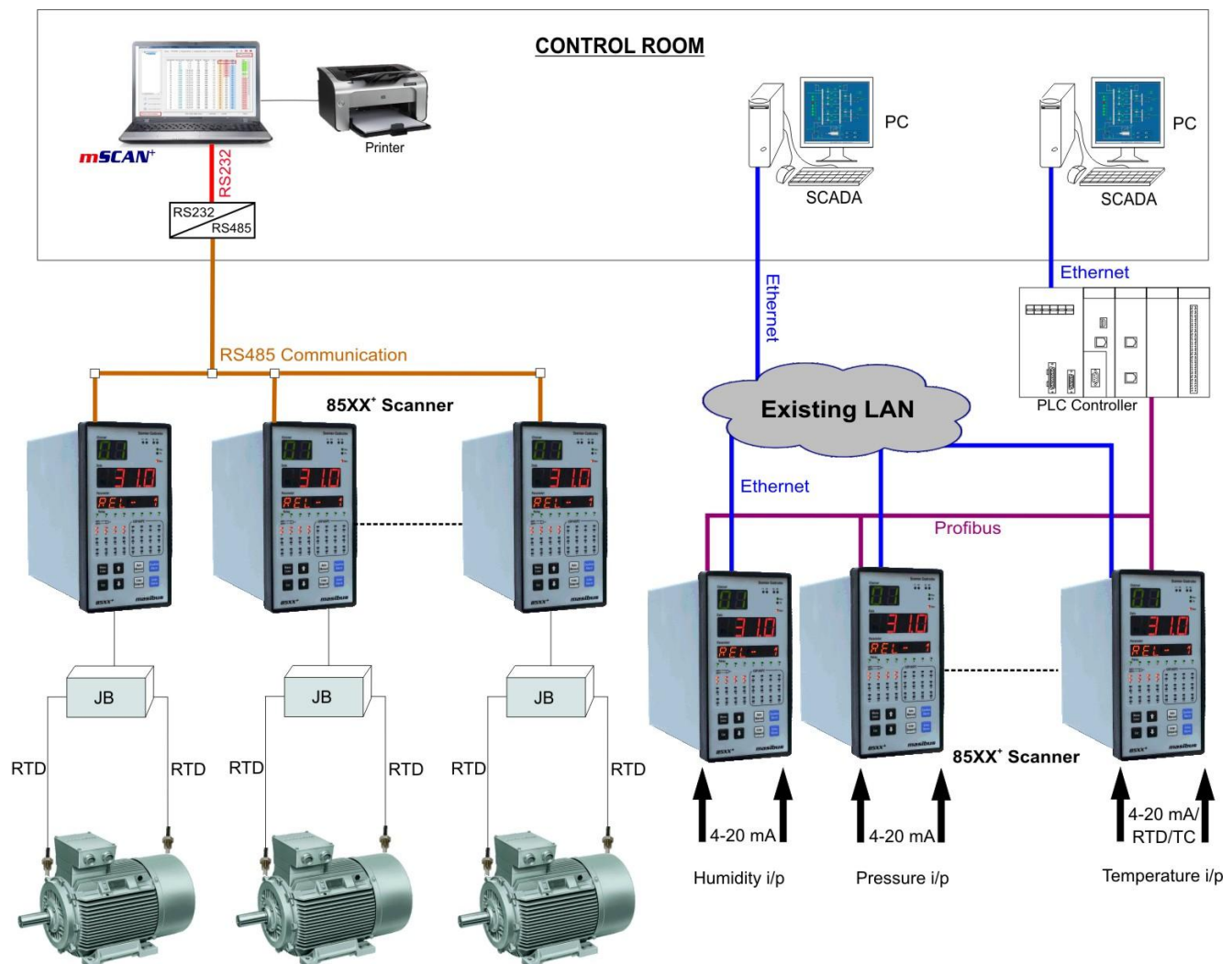
Easy to Monitor

| Parameters | Front Display | mSCAN ⁺ Software |
|------------------------------|---------------|-----------------------------|
| Real-time data | ✓ | ✓ |
| • Channel No. | ✓ | ✓ |
| • Process Value | ✓ | ✓ |
| • Zero/Span, Input Type | ✓ | ✓ |
| • Alarm Status | ✓ | ✓ |
| • Channel wise Process value | ✓ | ✓ |

Monitoring using **mSCAN⁺** software



Application



Technical Specifications

| Input | | | | |
|---|---|----------------------------|----------------------------|----------------------------|
| Analog Input | | | | |
| No of AI Modules | 1 (8 ch) , 2 (16 ch) or 3 (24 ch) | | | |
| Input Type | Thermocouple, RTD, Voltage, Current | | | |
| Input Range | Refer Table -1 | | | |
| Accuracy | 0.1% FS | | | |
| ADC Resolution | 17 bits | | | |
| Display Resolution | 0.1 / 1.0 °C | | | |
| Sampling Rate | T/C & Voltage/Current: 50mSec/Channel RTD: 100mSec/Channel | | | |
| Display Scan Rate | 1 to 99 Sec (Programmable) | | | |
| CJC | Auto/ Manual/ External for T/C type | | | |
| Sensor open | All inputs except 0-5V, 0-10 VDC | | | |
| Sensor Burnout current | 0.4uA | | | |
| RTD excitation current | 250uA (Approx) | | | |
| NMRR | > 40dB | | | |
| CMRR | > 120dB | | | |
| Temp-co | < 100ppm/°C | | | |
| Input Impedance | > 1MΩ | | | |
| Max Voltage | 20VDC | | | |
| Connector Type | 24 pin Rectangular connector | | | |
| Digital Input [▲] | | | | |
| No. of DI modules | 1 (16 ch)* | | | |
| Response time | 50 msec | | | |
| Rated Input Voltage (Factory Settable) | 12 VDC (Sink / Source) | 24 VDC (Sink / Source) | 110 VDC (Sink / Source) | 220 VDC (Sink / Source) |
| Input On Voltage | ≥7 VDC | ≥15 VDC | ≥75 VDC | ≥110 VDC |
| Input Off Voltage | ≤4 VDC | ≤5 VDC | ≤30 VDC | ≤50 VDC |
| Input Current (At Rated Input Voltage) | Approx 3mA / Channel | Approx 3mA / Channel | Approx 3mA / Channel | Approx 3mA / Channel |
| Maximum Allowable Input Voltage | 15 VDC | 30 VDC | 132 VDC | 250 VDC |
| * When Digital Input is selected; only 8 analog input is possible | | | | |
| Display and Keys | | | | |
| Channel number | 2-Digit, 0.56", Green seven segment LED | | | |
| Process Value | 4-Digit, 0.56", Red seven segment LED | | | |
| Engineering Unit | 6-Digit, 0.3", Orange Alphanumeric LED | | | |
| Status LEDs | Manual, Run, Flt, Tx/Rx, Relay status Alarm/Control Status per channel | | | |
| Keys | 2 X 4 for Configuration, Operation and Calibration | | | |
| Output | | | | |
| Alarm/Trip/Control Output (Optional) | | | | |
| Relays | 8 Nos. per card | | | |
| Type | C- NO or C-NC (Jumper Selectable) | | | |
| Rating | 2A @ 250VAC / 30VDC | | | |
| Connector Type | 25 D-Sub | | | |
| Open Collector (OC) Output (Optional) | | | | |
| OC Outputs | 24 | | | |
| Type | Sinking | | | |
| Rating | 100mA@30VDC | | | |
| Connector Type | 25 D-Sub | | | |
| Analog Output [▲] (Optional) | | | | |
| Number of outputs | Max 8 | | | |
| Output signal | 0/4 to 20 mA (Isolated) | | | |
| Load Resistance | 500Ω max | | | |
| Display to output accuracy | ± 0.25 % of span | | | |
| Resolution | 16 bits | | | |
| Communication Output | | | | |
| RS485-1 (Standard) & RS485-2 (Optional) | | | | |
| Interface | 2 Wire, EIA RS485 | | | |
| Protocol | Modbus-RTU Slave | | | |
| Baud Rate | 9600 or 19200 or 57600 | | | |
| Ethernet (Optional) | | | | |
| Interface | RJ45 | | | |
| Protocol | Modbus - TCP/IP(Modnet) Slave | | | |
| Speed | 10 Mbps | | | |

| Profibus-DP [▲] (Optional) | | |
|---|---|-----------------------|
| Interface | 9-Pin D-Type Connector | |
| Protocol | Profibus-DP Slave | |
| Baud Rate | 9600 to 12Mbps (Auto Detected) | |
| Max I/P, O/p Data | 244 Bytes | |
| USB Port [▲] (Optional) | | |
| No. of port | 1 no max | |
| Standard | USB 2.0 (Mass Storage only) | |
| Fetch data format | Standard Tabular or AES-128 bit encrypted (Optional) | |
| Data file format | *.xls | |
| Max. USB pen drive size | 4 GB supported with FAT16/FAT32 formatting | |
| Data Logging | | |
| Memory | 25MB (Periodic), 7MB (Event) | |
| Logged Data Retrieval | Through mSCAN ⁺ Software | |
| Min Periodic Log Time | 1 Sec | |
| No of Records | $101888 \times \left[\frac{256}{(2 \times \text{No. of Ch}) + 12} \right]$ | |
| Power supply | | |
| Voltage | 85-265VAC, 50/60 Hz/ 100-295 VDC 18 - 36VDC (optional) | |
| Power Consumption | 16VA (Max) [85-265VAC] 8VA (Max) [18-36VDC] | |
| 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 I/O signal and Communication O/P. Insulation resistance: 20MΩ or more @ 500 V DC between power terminals and grounding terminal | | |
| Physical | | |
| Size (in mm) | 144 (H) X 72 (W) X 165 (D) | |
| Panel Cutout (in mm) | 137 (H) X 68.5 (W) | |
| Depth behind Panel (in mm) | 155 / 203 (with cable connector) | |
| Mounting | Panel Mount (Standard) | |
| Weight | 1.25 Kg | |
| Enclosure Material | Extruded Aluminum | |
| Protection | IP20 (Overall, except terminals), IP55 (Front Facia) | |
| Environmental | | |
| Operating temperature | -10 to 55 °C | |
| Storage temperature | 0 to 80 °C | |
| Humidity | 20 to 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 °C to 1750 °C |
| | S | 0 °C to 1750 °C |
| | N | -200 °C to 1300 °C |
| RTD | Pt100 | -199.9 °C to 850.0 °C |
| | Cu53 | -210.0 °C to 210.0 °C |
| | NI120 | -70.0 °C to 210.0 °C |
| Voltage/Current | 0/1-5V DC | -1999 to 9999 |
| | 0/4 -20mA (Ext. 250Ω) | -1999 to 9999 |
| | -10 to 20 mV DC | -1999 to 9999 |
| | 0 - 100 mV DC | -1999 to 9999 |
| | 0 - 10 V DC | -1999 to 9999 |
| Compliance | | |
| EN 61010-1:2010 (Safety) | | |
| EN 61000-6-2:2005 (EMI/EMC) | | |
| EN 61000-6-4:2007 (EMI/EMC) | | |

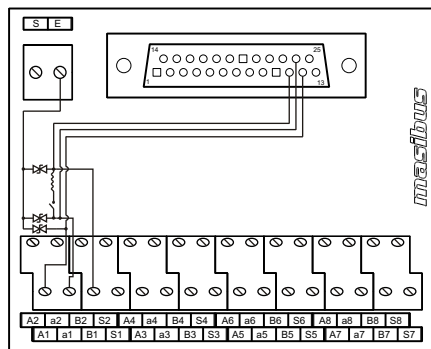
[▲]Options are not available in CE compliance Scanner

Technical Specifications

Field Interface Board for Analog Input (Optional)

Din Rail Mount Field Interfacing Board is designed for terminal panel of Analog input signal to interface with field signals.

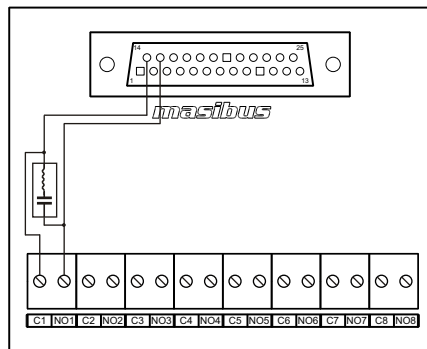
| | |
|------------------------|---|
| No of Input Channel | 8 Analog Input |
| Input Connection | Screw type PCB Terminal Block (2.5mm ² conductor size) |
| No of Output Channel | 8 Analog Output |
| O/P Connection | 25 Pin D-Type Plug in Type Connector |
| Size in mm (L X W X H) | 90 X 90 X 75 |
| Mounting | DIN Rail (35 mm) |



Field Interface Board for Relay Output (Optional)

Din Rail Mount Field Interfacing Board is designed for terminal panel of Relay Output signal to interface with field signals.

| | |
|------------------------|---|
| No of Input Channel | 8 Relay Input |
| Input Connection | Screw type PCB Terminal Block (2.5mm ² conductor size) |
| No of Output Channel | 8 Relay Output |
| O/P Connection | 25 Pin D-Type Plug in Type Connector |
| Size in mm (L X W X H) | 90 X 90 X 75 |
| Mounting | DIN Rail (35 mm) |



Ordering Code

| Model | No of I/O Slots and Type | | | | | | | | Power Supply | Communication | | USB [▲] port | Data Logging | | CE Compliance | | | |
|-------|--------------------------|------------|-----------------|--------------|----|------------|----|---------|-----------------|-------------------------|----|--------------------------|-----------------|--------------------------------|----------------|-----|---|-----|
| | 1 | | 2 | | 3 | | 4 | | | | | | | | | | 5 | |
| 85XX* | X | | X | | X | | X | | X | | XX | | X | | X | | X | |
| | AI | Analog I/P | N | None | N | None | N | None | N | None | U1 | 85-265VAC/ 100-295VDC | 1X | 1 X RS485 | N | No | N | No |
| | | | AI | Analog I/P | AI | Analog I/P | RL | 8 Relay | OC | Open Collector O/P | U2 | 18-36VDC | 2X | 2 X RS485 | Y [#] | Yes | Y | Yes |
| | | | DI [▲] | Digital I/P* | | | | | 1A [▲] | 1 no. 0/4-20 mA O/P | | | 1E | 1 X RS485 + 1 X RJ45 | | | | |
| | | | | | | | | | 2A [▲] | 2 nos. 0/4-20 mA O/P | | | 2E | 2 X RS485 + 1 X RJ45 | | | | |
| | | | | | | | | | 4A [▲] | 4 nos. 0/4-20 mA O/P | | | 1P [▲] | 1 X RS485 + 1 X Profibus-DP | | | | |
| | | | | | | | | | 6A [▲] | 6 nos. 0/4-20 mA O/P | | | | | | | | |
| | | | | | | | | | 8A [▲] | 8 nos. 0/4-20 mA O/P | | | | | | | | |
| | | | | | | | | | S | Special O/P | | | | | | | | |

Note:

Specify **X** from ordering code.

[▲]Options are not possible in CE compliance Scanner

* When Digital Input is selected; only 8 Analog input is possible

When USB option is selected, datalogging option must be selected

For Analog o/p type; other than 0/4-20mA please contact factory

Customer to specify required input type/range from Table-1 at the time of Order placement; else by default all channels will be calibrated for Input RTD Pt100 range

Prefab Cables Ordering Code (Extra Cost)

| Part Code | Description |
|-----------|---|
| AIC-2.5 | 8 points Input cable 25 Core 2.5 mtrs long (8 Ch: 1 Cable, 16 Ch: 2 Cables, 24 Ch: 3 Cables Required) |
| RLC-2.5 | 8 Relay output cable 25 Core 2.5 mtrs long |
| OCC-2.5 | 24 OC output cable 25 Core 2.5 mtrs long |

Field Interface Board Ordering Code (Extra Cost)

| Part Code | Description |
|----------------|--|
| m-85XX*-FIB-AI | 8 channel Field Interface Board for Analog Input (For 8 Ch: 1 Module, 16 Ch: 2 Modules, 24 Ch: 3 Modules Required) |
| m-85XX*-FIB-RL | 8 channel Field Interface Board for Relay output |

Prefab Cables for Field Interface Board Ordering Code (Extra Cost)

| Part Code | Description |
|---------------------|--|
| m-AIC-2.5-R24J-D25M | 8 points Analog Input cable 25 Core 2.5 mtrs long with DB25 connector (8 Ch: 1 Cable, 16 Ch: 2 Cables, 24 Ch: 3 Cables Required) |
| m-RLC-2.5-D25F-D25M | 8 Relay output cable 25 Core 2.5 mtrs long with DB25 connector |

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