

SMARTLINE HMI

A Smart Connectivity

*Available with Connectivity to
Mitsubishi FX and Messung PLC Series*



HUMAN MACHINE INTERFACE (HMI) SERIES

SMART HMI Sr.

The conventional Operator Panels use push buttons, indicating lamps, key-boards, displays. These are individually wired-up to Input / Output Modules. This arrangement requires complex ladder programming, resulting in limited flexibility and expandability.

Messung's **SMARTLINE^{Sr.}** Series of Human Machine Interface (HMI) offers an innovative solution to replace conventional Operator Panels. It also exploits the power of today's industrial controllers, in the form of data entry/storage, display of production related information.

The **SMARTLINE^{Sr.}** HMI is an advanced Microprocessor based device which serially communicates with a Programmable Logic Controller. It is a Panel mounted, industrially hardened Operator Panel with a choice of 20 ch x 4 Line Displays : LCD (Back-lit), Vacuum Fluorescent Display (VFD).



Smartline Sr. HMIs



USER FRIENDLY SOFTWARE - "SOFTLINE"

- Menu-driven and user-friendly Software designed to run on IBM PC/AT
- Allows to select Key-functionalities and their position
- Allows addressing of Built-in LEDs mapped in PLC Logic
- Facilitates message programming from 1 Line to 4 Lines (Upto 40 Characters)
- Facilitates programming of production data and attributes in messages
- Comprehensive documentation facility
- Serial connection to **SMARTLINE** HMI Series allows direct transfer of configuration and messages

CONSTRUCTION

- Housed in aesthetically and ergonomically designed plastic moulded box.
- Battery-free operation due to Onboard EEPROM for message storage.
- Specially designed to withstand electrically noisy environment.

FLEXIBLE KEY FUNCTIONS

- Facility of 50 User-selectable functions for keys.
- Provides 28 Keys to be configured as ON/OFF, Numerical (0-9), Cursor Control (←, ↑, →, ↓).
- Rugged Key-matrix replace conventional push-buttons, selector-switches etc.

DISPLAY OPTIONS

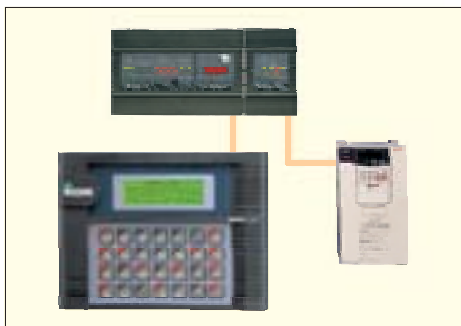
- Wide viewing angle, high intensity and back-lit facilities better visibility on industrial shopfloor.
- Display types : LCD (Back-lit), VFD.

ABOUT MESSAGES

- Allows storage upto 256 messages x single Line.
- Facilitates viewing and modifying production parameters intermingled in messages.
- Allows selection of attributes to messages such as Blinking, Scrolling, Audio Alarm.
- Allows Messages Triggering either by PLC Logic or by invoking via a function Key.

Typical Application : HMI Connectivity

APPLICATION : Compressed Air Dryer Package



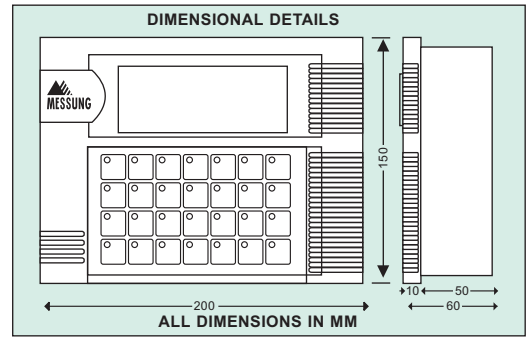
Integrated Package :
Smartline Sr. HMI with
Messung Micro PLC &
Mitsubishi A-540 Inverter.

GENERAL SPECIFICATIONS :

Power Supply	: 24 V DC, ±20% @ 500 mA (maximum) Combicon Phoenix Connector
Ambient Temperature	: Upto 50° C Max.
EMI Characteristics	: CE Compliance as per EN 61326 (1997), IEC 61326 (1998)
Dimensions in mm (W x H x D)	: 200 x 150 x 50
Mounting	: Front Panel
Panel Cutout (W x H)	: 186 X 141

FUNCTIONAL SPECIFICATIONS :

Function Keys	: 28, (Membrane Type) freely software configurable functionality
LED Indicators	: 28 housed in each function key
Display Options	: 20 Ch. x 4 Line LCD (Backlit) (Character Size = 2.95W x 4.15H mm) 20 Ch. x 4 Line VFD (Character Size = 2.4W x 4.7H mm)
Serial Interface	: RS-232C, RS-485/20mA current loop for PLCs (Mitsubishi FX PLC Series, Nexgen 4000 interfaces now available)
Audio Alarm Interface	: Provided for external piezo-buzzer
Max. No. of Messages	: 256 x Single Line
Message Memory	: 8K EEPROM
Programming tool	: User friendly DOS based Software Package "SOFTLINE" runs on an IBM PC-XT/AT Compatible Computer with the facility for configuring keys, LEDs, messages and data records, read/write HMI programmes and documentation



HARDWARE CONFIGURATION

A) FOR XMP8-40 PLC

Sr. No.	Description	Ordering Code
1.	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line LCD (Backlit)	SL 2004 LX
	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line VFD	SL 2004 VX
2.	Please refer the Cable Chart for Link Cables connecting HMI ^{Sr} to XMP8-40 PLC	

B) FOR MINI XMP8-20 PLC/MICRO PLC SERIES

Sr. No.	Description	Ordering Code
1.	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line LCD (Backlit)	SL 2004 LM
	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line VFD	SL 2004 VM
2.	Please refer the Cable Chart for Link Cables connecting HMI ^{Sr} to Mini XMP8-20 PLC/Micro PLC Series.	

C) FOR NEXGEN-4000 PLC / NEXGEN-5000 PLC SERIES

Sr. No.	Description	Ordering Code
1.	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line LCD (Backlit)	SL 2004 LN
	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line VFD	SL 2004 VN
3.	Please refer the Cable Chart for Link Cables connecting HMI ^{Sr} to NEXGEN-4000 & NEXGEN-5000 PLC Series	

D) FOR MITSUBISHI FX PLC SERIES

Sr. No.	Description	Ordering Code
1.	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line LCD (Backlit) with connectivity to Mitsubishi FX PLC Series	SL 2004 LFX
2.	SMARTLINE^{Sr} HMI with 20 Ch. x 4 Line VFD with connectivity to Mitsubishi FX PLC Series	SL 2004 LVX
3.	Please refer the Cable Chart for Link Cables connecting HMI ^{Sr} to Mitsubishi FX PLC Series	

(Please Order Suitable HMI Sr. Link Cable Separately)

E) MISCELLANEOUS

Sr. No.	Device Type	Description	Ordering Code
1.	PC Based Software Package	SOFTLINE , V4.02, DOS based HMI configuration Software on IBM compatible PC-XT/AT	SFL V4.02
2.	Serial Link Cable	From HMI ^{Sr} to IBM compatible PC-XT/AT (Length = 3 mtrs.)	SL CAB 0300
3.	Serial Port Converter	For port conversion of IBM compatible PC-XT/AT	XMP8 SPC 2010

SR. NO.	CABLE DESCRIPTION	Wherever ✓✓ = 03, 05, 10, 15, 20, 25 for 3Mtr., 5Mtr., 10Mtr., 15Mtr., 20Mtr. & 25Mtr. respectively	
		LINK CABLE LENGTH	COMMENT
1.	HMI ^{Sr} to XMP8-40 PLC	SL CAB ✓✓ 01	5 Mtr. Cable NA
2.	HMI ^{Sr} to XMP8-20 PLC	SL CAB ✓✓ 02	5 Mtr. Cable NA
3.	HMI ^{Sr} to XMP8-11/12/15/16 PLC	SL CAB ✓✓ 06	-
4.	HMI ^{Sr} to NEXGEN 4000 PLC	SL CAB ✓✓ 07	-
5.	HMI ^{Sr} to NEXGEN 521x PLC Series (Port-2)	SL CAB ✓✓ 08 02	-
6.	HMI ^{Sr} to NEXGEN 521x PLC Series (Port-3)	SL CAB ✓✓ 08 03	-
7.	HMI ^{Sr} to NEXGEN 522x / 523x PLC Series (Port-2,3)	SLB CAB ✓✓ 09	-
8.	HMI ^{Sr} to MITSUBISHI FX PLC	SL CAB ✓✓ 50	3 Mtr. Cable NA
9.	HMI ^{Sr} to MITSUBISHI FXON / FX2N PLC	SL CAB ✓✓ 51	3Mtr., 15Mtr., 20 Mtr. & 25 Mtr. Cable NA

Example : For ordering HMI Sr. to XMP8-40 PLC of 15Mtr. Cable length, the Ordering Code would be SL CAB 1501.

SMART HMI Jr.

The **SMARTLINE^{Jr.}** Human Machine Interface (HMI^{Jr.}) is a panel mounted device which functions as an operator panel for the PLC.

The HMI^{Jr.} is a very Cost Effective Operator Panel Interface for wide range of PLCs like Micro, Mini, NEXGEN, FX Series PLCs. It facilitates the operator to monitor / modify various field parameters. The serial Interface between HMI^{Jr.} and PLC reduces the otherwise bulky cabling, thus reducing installation time and cost. It is a panel mounted operator terminal with two Line LCD (Back lit).

The HMI^{Jr.} can easily be configured, to suit different applications, with the PC based Programming Software, "SOFTLINE".

SMART FEATURES

- A must for every Micro XMP8-10 / Mini XMP8-20 PLC application.
- Can store upto 230 x Single Line User Defined messages.
- Fixed keyboard for Parameter entry along with 4 user configurable keys.
- User configurable Bi-color LEDs (Red/Green) with dual frequency flashing capability.
- IP 65 Rating front panel protection with sealed membrane keyboard.
- CE Compliance as per EN 61326 (1997) and IEC 61326 (1998).
- Slide in Legend strip for 4 user defined keys.
- Easy configuration with PC based Programming Package **SOFTLINE**.

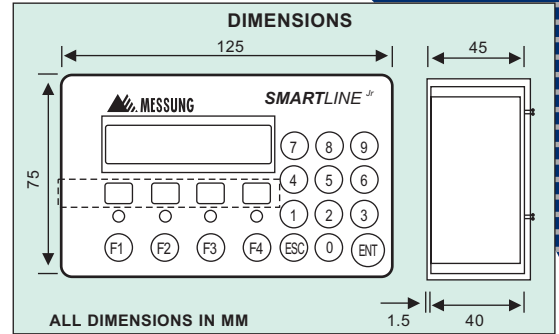


Smartline Jr. HMI

TECHNICAL SPECIFICATIONS FOR SMARTLINE^{Jr} HMI

GENERAL SPECIFICATIONS :

Power Supply	: 4 - 16 V DC/1.5 Watts approx. (During RUN MODE works directly on PLC power. During Program/Transfer Mode power is supplied by Link Adapter/Power Supply Unit)
Ambient Temperature	: Upto 50° C Max.
EMI Characteristics	: CE Compliance as per EN 61326 (1997) and IEC 61326 (1998)
Dimensions in mm (W x H x D)	: 125 x 75 x 40
Panel Cutout (W xH)	: 117 x 67 mm.
Mounting	: Front Panel
Protection Rating (Front)	: IP 65



FUNCTIONAL SPECIFICATIONS :

Keyboard	: 16 Keys with tactile feed back (12 Nos. Predefined or fixed keys, 4 Nos. user defined keys with Slide in Legend strip with space for 2 Lines x 4 Characters). Membrane Type
LED Indicators	: 4 Nos. of Status LEDs, Bi-Colour (Red/Green) with dual frequency flashing capability.
Display	: 16 Character x 2 Line LCD, Back Lit (Character Size = 2.95 W x 4.35 H mm)
Serial Interface	: RS-422 @ 9600 Baud
PLC Linking	: 8 Pin Mini Din Connector. (Please refer the Cable Chart for Link Cable Details)
Max. No. of Messages	: 230 x Single Line
Message Memory	: 8K Bytes, EEPROM type
Programming tool	: User friendly DOS based Software Package "SOFTLINE" runs on an IBM PC-XT/AT Compatible Computer with the facility for configuring keys, LEDs, messages and data records, read/write HMI programmes and documentation

HARDWARE CONFIGURATION :

A) FOR XMP8-40 PLC

Sr. No.	Description	Ordering Code
1.	SMARTLINE ^{Jr} HMI with 16 Ch. x 2 Line LCD (Backlit)	SL JR 1602 LX
2.	Please refer the Cable Chart for Link Cables connecting HMI ^{Jr} to XMP8-40 PLC	

B) FOR MINI XMP8-20 PLC/MICRO PLC SERIES

Sr. No.	Description	Ordering Code
1.	SMARTLINE ^{Jr} HMI with 16 Ch. x 2 Line LCD (Backlit)	SL JR 1602 LM
2.	Please refer the Cable Chart for Link Cables connecting HMI ^{Jr} to XMP8-20 PLC.	
3.	Please refer the Cable Chart for Link Cables connecting HMI ^{Jr} to Micro PLC Series.	

C) FOR NEXGEN-4000 PLC / NEXGEN-5000 PLC Series

Sr. No.	Description	Ordering Code
1.	SMARTLINE ^{Jr} HMI with 16 Ch. x 2 Line LCD (Backlit)	SL JR 1602 LN
2.	Please refer the Cable Chart for Link Cables connecting HMI ^{Jr} to NEXGEN-4000 PLC Series	

D) FOR MITSUBISHI FX PLC SERIES

Sr. No.	Description	Ordering Code
1.	SMARTLINE ^{Jr} HMI with 16 Ch. x 2 Line LCD (Backlit) with connectivity to Mitsubishi FX PLC Series	SL JR 1602 LFX
2.	Please refer the Cable Chart for Link Cables connecting HMI ^{Jr} to Mitsubishi FX PLC Series	(Please Order Suitable HMI Jr. Link Cable Separately)

E) MISCELLANEOUS

Sr. No.	Device Type	Description	Ordering Code
1.	PC Based Software Package	SOFTLINE, V4.02, DOS based HMI configuration Software on IBM Compatible PC-XT/AT	SFL V4.02
2.	Serial Link Cable	From HMI ^{Jr} to IBM Compatible PC-XT/AT & Link Adapter/Power Supply Unit (Length = 3 mtrs.)	SL JR CAB 0300
3.	Serial Port Converter	For port conversion of IBM Compatible PC-XT/AT	XMP8 SPC 2010
4.	Link Adapter/ Power Supply Unit	For connection of HMI ^{Jr} to IBM Compatible PC-XT/AT	XMP8 PSU 1010

SR. NO.	CABLE DESCRIPTION	Wherever ✓ = 03, 05, 10, 15, 20, 25 for 3Mtr., 5Mtr., 10Mtr., 15Mtr., 20Mtr. & 25Mtr. respectively	
		LINK CABLE LENGTH	COMMENT
1.	HMI ^{Jr} to XMP8-40 PLC	SL JR CAB ✓ ✓ 01	-
2.	HMI ^{Jr} to XMP8-20 PLC	SL JR CAB ✓ ✓ 02	5 Mtr. Cable NA
3.	HMI ^{Jr} to XMP8-11/12/15/16 PLC	SL JR CAB ✓ ✓ 06	5 Mtr. Cable NA
4.	HMI ^{Jr} to NEXGEN 4000 PLC	SL JR CAB ✓ ✓ 07	-
5.	HMI ^{Jr} to NEXGEN 521xPLC Series (Port-2)	SL JR CAB ✓ ✓ 08 02	-
6.	HMI ^{Jr} to NEXGEN 521xPLC Series (Port-3)	SL JR CAB ✓ ✓ 08 03	-
7.	HMI ^{Jr} to NEXGEN 522x / 523xPLC Series (Port-2,3)	SL JR CAB ✓ ✓ 09	-
8.	HMI ^{Jr} to MITSUBISHI FX PLC	SL JR CAB ✓ ✓ 50	Only 3 Mtr. Cable available
9.	HMI ^{Jr} to MITSUBISHI FXON / FX2N PLC	SL JR CAB ✓ ✓ 51	Only 3 Mtr. Cable available

"Product development is a continuous process. Consequently Specifications are subject to change without prior notice. For latest information please contact our nearest sales office".


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