SMARTLINE HMI

A Smart Connectivity

Available with Connectivity to
Mitsubishi FX and Messung PLC Series

www.intericsdesigns.com
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® 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® 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).

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)
- **Ambient Temperature**: Upto 50°C Max.
- **EMI Characterisitcs**: 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**: 256 x Single Line, 8K EEPROM
- **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
- **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
- **Message Memory**: 8K EEPROM
- **Programming tool**: SOFTLINE, V4.02, DOS based HMI configuration

HARDWARE CONFIGURATION:

**A) FOR XMP8-40 PLC**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Description</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SMARTLINE® HMI with 20 Ch. x 4 Line LCD (Backlit)</td>
<td>SL 2004 LX</td>
</tr>
<tr>
<td>2.</td>
<td>Please refer the Cable Chart for Link Cables connecting HMI to XMP8-40 PLC</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Description</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SMARTLINE® HMI with 20 Ch. x 4 Line LCD (Backlit)</td>
<td>SL 2004 LM</td>
</tr>
<tr>
<td>2.</td>
<td>Please refer the Cable Chart for Link Cables connecting HMI to XMP8-20 PLC</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Description</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SMARTLINE® HMI with 20 Ch. x 4 Line LCD (Backlit)</td>
<td>SL 2004 LN</td>
</tr>
<tr>
<td>2.</td>
<td>SMARTLINE® HMI with 20 Ch. x 4 Line VFD with connectivity to Mitsubishi FX PLC Series</td>
<td>SL 2004 VN</td>
</tr>
<tr>
<td>3.</td>
<td>Please refer the Cable Chart for Link Cables connecting HMI to NEXGEN-4000 &amp; NEXGEN-5000 PLC Series</td>
<td></td>
</tr>
</tbody>
</table>

**D) FOR MITSUBISHI FX PLC SERIES**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Description</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SMARTLINE® HMI with 20 Ch. x 4 Line LCD (Backlit) with connectivity to Mitsubishi FX PLC Series</td>
<td>SL 2004 LFX</td>
</tr>
<tr>
<td>2.</td>
<td>SMARTLINE® HMI with 20 Ch. x 4 Line VFD with connectivity to Mitsubishi FX PLC Series</td>
<td>SL 2004 LVX</td>
</tr>
<tr>
<td>3.</td>
<td>Please refer the Cable Chart for Link Cables connecting HMI to Mitsubishi FX PLC Series</td>
<td></td>
</tr>
</tbody>
</table>

**E) MISCELLANEOUS**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Device Type</th>
<th>Description</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PC Based Software Package</td>
<td>SOFTLINE, V4.02, DOS based HMI configuration</td>
<td>SFL V4.02</td>
</tr>
<tr>
<td>2.</td>
<td>Serial Link Cable</td>
<td>From HMI to IBM compatible PC-XT/AT</td>
<td>SL CAB 0300</td>
</tr>
<tr>
<td>3.</td>
<td>Serial Port Converter</td>
<td>For port conversion of IBM compatible PC-XT/AT</td>
<td>XMP8 SPC 2010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SR. NO.</th>
<th>CABLE DESCRIPTION</th>
<th>LINK CABLE LENGTH</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>HMI® to XMP8-40 PLC</td>
<td>SL CAB 01 01</td>
<td>5 Mtr. Cable NA</td>
</tr>
<tr>
<td>2.</td>
<td>HMI® to XMP8-20 PLC</td>
<td>SL CAB 02 02</td>
<td>5 Mtr. Cable NA</td>
</tr>
<tr>
<td>3.</td>
<td>HMI® to XMP8-11/12/15/16 PLC</td>
<td>SL CAB 06 06</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>HMI® to NEXGEN 4000 PLC</td>
<td>SL CAB 07 07</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>HMI® to NEXGEN 521x PLC Series (Port-2)</td>
<td>SL CAB 08 08</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>HMI® to NEXGEN 521x PLC Series (Port-3)</td>
<td>SL CAB 09 09</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>HMI® to NEXGEN 522x / 523x PLC Series (Port-2,3)</td>
<td>SLB CAB 50 50</td>
<td>3 Mtr. Cable NA</td>
</tr>
<tr>
<td>8.</td>
<td>HMI® to MITSUBISHI FXON / FX2N PLC</td>
<td>SL CAB 51 51</td>
<td>3 Mtr., 15 Mtr., 20 Mtr. &amp; 25 Mtr. respectively</td>
</tr>
</tbody>
</table>

Example: For ordering HMI Sr. to XMP8-40 PLC of 15Mtr. Cable length, the Ordering Code would be SL CAB 1501.
SMARTLINE® HUMAN MACHINE INTERFACE (HMI) SERIES

SMART HMI Jr.

The SMARTLINE® Human Machine Interface (HMI) is a panel mounted device which functions as an operator panel for the PLC.

The HMI 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 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 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.
- 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.
- Slide in Legend strip for 4 user defined keys.
- Easy configuration with PC based Programming Package SOFTLINE.
**TECHNICAL SPECIFICATIONS FOR SMARTLINE® 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 x H):** 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).
- **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.** 1.
  - **Description:** SMARTLINE® HMI with 16 Ch. x 2 Line LCD (Backlit)
  - **Ordering Code:** SL JR 1602 L
  - **Sr. No.** 2.
  - **Description:** Please refer the Cable Chart for Link Cables connecting HMI to XMP8-40 PLC

B) **FOR MINI XMP8-20 PLC/MICRO PLC SERIES**
- **Sr. No.** 1.
  - **Description:** SMARTLINE® HMI with 16 Ch. x 2 Line LCD (Backlit)
  - **Ordering Code:** SL JR 1602 LM
  - **Sr. No.** 2.
  - **Description:** Please refer the Cable Chart for Link Cables connecting HMI to XMP8-20 PLC

C) **FOR NEXGEN-4000 PLC / NEXGEN-5000 PLC Series**
- **Sr. No.** 1.
  - **Description:** SMARTLINE® HMI with 16 Ch. x 2 Line LCD (Backlit)
  - **Ordering Code:** SL JR 1602 LN
  - **Sr. No.** 2.
  - **Description:** Please refer the Cable Chart for Link Cables connecting HMI to NEXGEN-4000 PLC Series

D) **FOR MITSUBISHI FX PLC SERIES**
- **Sr. No.** 1.
  - **Description:** SMARTLINE® HMI with 16 Ch. x 2 Line LCD (Backlit) with connectivity to Mitsubishi FX PLC Series
  - **Ordering Code:** SL JR 1602 LFX
  - **Sr. No.** 2.
  - **Description:** Please refer the Cable Chart for Link Cables connecting HMI to Mitsubishi FX PLC Series

E) **MISCELLANEOUS**
- **Sr. No.** 1.
  - **Device Type:** PC Based Software Package
  - **Description:** SOFTLINE V4.02, DOS based HMI configuration Software on IBM Compatible PC-XT/AT
  - **Ordering Code:** SFL V4.02
- **Sr. No.** 2.
  - **Serial Link Cable:** From HMI to IBM Compatible PC-XT/AT & Link Adapter/Power Supply Unit (Length = 3 mtrs.)
  - **Ordering Code:** XMPR SPC 2010
- **Sr. No.** 3.
  - **Serial Port Converter:** For port conversion of IBM Compatible PC-XT/AT
  - **Ordering Code:** XMPR PUS 1010

**MESSENG AREA OFFICES:**

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  - FAX: +91(20)27122091
  - email: corpgrps@ms.messung.com

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**MISCELLANEOUS**

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