## SOFTWARE DETAILS

- User needs to configure I/O cards in Programming software (SELPRO)
- For details of the software and configuration method, please refer to the software user manual.

## 4. FL-RL-LG-X-X-X ORDER CODE

FL — RL — LG — X — X — X

| PLC Series | Product name | Card | Master RS485 | Proprietary Expansion | RTC |
|---|---|---|---|---|---|
| Flexys | Rail | CPU card | 0 : Absent | 0 : Absent | 0 : Absent |
| | | | 1 : Present | 1 : Present | 1 : Present |

## 5. ORDERING INFORMATION

| ORDER CODE | DESCRIPTION |
|---|---|
| FL-RL-PS-230V | 230VAC Power Supply Card |
| FL-RL-DI04-PS-24V | 24VDC Power Supply Card |
| FL-RL-LG-1-1-1-V2 | Logic Card |
| FL-RL-LG-1-0-1-V2 | Logic Card |
| FL-RL-BS-6 | Base Card |

## 6. SAFETY SUMMARY

- Conductors must not come in contact with the internal circuitry of the controller or else it may lead to a safety hazard that may cause electrical shock to operator.

**NOTE :** For safety precautions, refer FL-RL-BS-6 operating instruction.

## DISCLAIMER LIABILITY

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However the information in this publication is reviewed and any necessary corrections are included in subsequent editions.

## ? SERVICE DETAILS

This device contains no user serviceable parts and requires special equipment and specialized engineers for repair.
Please contact service center for repair on the following numbers :
**Tel. No. :** + 91-7498077172 ; **Email :** service@selec.com
**NO WARRANTY ON UNIT DAMAGED DUE TO WRONG POWER SUPPLY.**

(Specifications are subject to change, since development is a continuous process.)


**Selec Controls Pvt. Ltd., India**

Factory Address :
EL-27/1, Electronic Zone, TTC Industrial Area, MIDC, Mahape, Navi Mumbai - 400 710, INDIA.
Tel. No. : +91-22-41 418 419/430 I Fax No. : +91-22-28471733 I Toll free : 1800 227 353(BSNL/MTNL Subscribers only)
Website : www.selec.com I Email : sales@selec.com




## 1. PRODUCT PROFILE

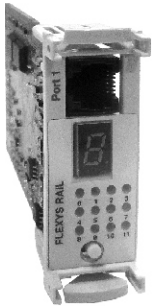


Figure 1.1 : Front view

## 2. DESCRIPTION

- FL-RL-LG-X-X-X as shown in Figure 1.1 is used as a plug-in module in Flexys Rail and not as an independent module.
- RTC with time switch function (Optional)
- RS485 based communication with modbus RTU protocol (Optional)
- Proprietary based communication with proprietary protocol (Optional)

**NOTE :** For installation procedure, refer FL-RL-BS-6 operating instruction.

## 3. ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| **Display** | 1. One 7-segment display |
| | 2. 12 LED's bank |
| **Number of Key** | One Function key |
| **Operating Temperature** | 0 to 55°C |
| **Storage Temperature** | -20 to 70°C |
| **Humidity** | 95% |
| **Weight (g)** | 40 |

## FUNCTIONAL SPECIFICATIONS (CPU)

| | |
|---|---|
| **Programming Language** | Windows based user friendly software for ladder logic programming [SELPRO] |
| **Memory** | Program Memory : 351 kB |
| | Data Memory : 40 kB |
| | Upload Memory : 96 kB |
| | EEPROM Memory : 4 kB |
| **Scan Time** | 1 ms (Typical 400 µs) (Depends on ladder scan time) |
| **Function Blocks** | Timer On delay, Timer Off delay, Pulse Timer, Special Timer, Up/Down Counter, Time Switch, PID control etc. |
| **RTC** | Yes (optional) |
| **Memory Retention** | 10 Years |
| **Battery Life** | 10 Years (for RTC only) |

## 7-Segment Display

| INDICATION TYPE | DESCRIPTION |
|---|---|
| Not Flashing | card detected |
| Flashing | Slot error / card not detected / card mismatch |
| Absent | card not configured in Ladder program |

## Internal Pinout description for 6 pin jack (port 1)

| PIN | DESCRIPTION |
|---|---|
| 1 | RS485 Slave +ve |
| 2 | RS485 Master +ve |
| 3 | RS485 Master -ve |
| 4 | Proprietary Expansion +ve |
| 5 | Proprietary Expansion -ve |
| 6 | RS485 Slave -ve |

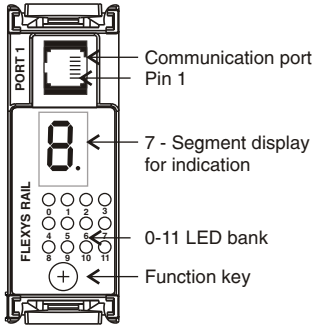


**Figure 3.1 FL-RL-LG-X-X-X Display**

## LED Display

At power ON, Indication value (7 Segment) is -1.
Press Function key to change Indication Value.
Each value is linked with status of 12 LED bank which is explained as below.

| Indication Type | Indication Value | LED Number | Description | Status |
|---|---|---|---|---|
| Not Flashing | -1 (LG) | 0 | Proprietary Exp_RX | —— |
| | | 1 | Proprietary Exp_TX | —— |
| | | 2 | Master_COMM_RX | —— |
| | | 3 | Master_COMM_TX | —— |
| | | 4 | SLAVE_COMM_RX | —— |
| | | 5 | SLAVE_COMM_TX | —— |
| | | 6 | Reserved - Always OFF | —— |
| | | 7 | Reserved - Always OFF | —— |
| | | 8 | Reserved - Always ON | —— |
| | | 9 | PLC START/STOP | Start : LED ON ; Stop : LED blinking |
| | | 10 | Reserved - Always OFF | —— |
| | | 11 | Reserved - Always OFF | —— |
| | | To toggle between PLC START and STOP MODE, Press and hold the function key for 3 sec. | | |
| | 0 (PS) | 0 | I0 | Ix Low (0) = LED OFF<br>Ix High (1) = LED ON<br>(Where x = 0 to 3) |
| | | 1 | I1 | |
| | | 2 | I2 | |
| | | 3 | I3 | |
| | | 4 - 11 | Reserved - Always OFF | —— |

| Indication Type | Indication Value | LED Number | Description | Status | |
|---|---|---|---|---|---|
| Not Flashing | 1 / 2 / 3 / 4 (SN1 to SN4) | 0 to n | Input / Output status | **Example :** For FL-SC-DI10, 10 digital Inputs status will be indicated by Corresponding 10 LED's (LED 0 – LED9). | |
| | | | Analog channel status | **Example :** For FL-SC-AI04-RTD, 4 channel status will be indicated by corresponding 4 LED's (LED 0 – LED3).<br>LED ON ➞ Sensor error / Reverse connection<br>LED OFF➞ channel OK | |
| Absent | NA | NA | If slot is not configured in the program, it will not display that slot number. | | |
| Flashing | 1 / 2 / 3 / 4 (SN1 to SN4) | 0-9 | Error Counter | Error Counter in 10 bit binary format | |
| | | 10<br>11 | **LED 10** | **LED 11** | **Description** |
| | | | Flashing | Flashing | Slot vacant |
| | | | ON | OFF | Slot mismatch |
| | | | OFF | ON | Slot stopped |
| Not Flashing | 8 | 7*1 | Boot-loader mode*2 (Default mode) | ON | |

*1 : LED number may vary with respect to Version Number.
(LED number 7 indicates version number 8.0-3)
*2 : PLC enters Boot loader mode under following conditions
a) Press Function key for 3 sec at power on.
b) Error during application download, if it is not downloaded successfully due to communication break.
**NOTE :** In bootloader mode following fixed communication settings are applicable.
Slave ID = 1, Baudrate = 19200, Parity = None(N), stop bits = 2, Data length = 8

## COMMUNICATION

| | |
|---|---|
| Communication Port-Port 1 | RS485 Slave |
| | RS485 Master for modbus RTU Expansion Module (Optional) (IO610 series, EXP-FLEX-2M) |
| | Proprietary Master for proprietary Expansion Module (Optional) (IO630 series) |
| Communication Protocol | Modbus RTU |
| | Proprietary Protocol |
| Baud Rate | 2400, 4800, 9600, 19200, 38400, 57600, 115200 (user configurable via software) Default = 19200 |

## RIOS (Remote Input/Output Stations)

| Parameter | Modbus RTU | Proprietary |
|---|---|---|
| Max. number of Slave | 247 | 31 |
| Communication Link | Port 1 – RJ25(6 Pin) | |
| Standard Link Interface | Modbus RTU | Proprietary |
| Communication Network | RS485 | Proprietary |
| Error detection | Yes | |