**1. PRODUCT PROFILE** 

# MIBRX-SC-DL

Figure 1.1 : Front view Patents applied worldwide

#### MIBRX-SC-DL

**Operating Instructions** 

#### 2. DESCRIPTION

- > MIBRX card as shown in figure 1.1 is used as a plug in module in MIBRX series.
- Easy to connect and replace.
- NOTE : For installation procedure, refer MIBRX-XX-X-X-X Operating Instruction.

#### 4. SAFETY SUMMARY

To prevent risk of electric shock, power supply to the controller must be kept off while inserting / removing MIBRX-SC-DL

 $\textbf{NOTE}: For safety precautions, refer MIBRX-XX-X-X operating instruction.}$ 

#### 5. 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.)

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	MIBRX-SC-DL
Memory storage	2MB
Minimum Logging Interval time	10 Seconds
Maximum No of groups	15
Endurance	100000 Programs / Erase cycles per page
Data Retention	20 Years
In-Built RTC	Yes
Supply type	Self Powered
Temperature	Operating : 0 to 55°C ; Storage : -20 to 70°C
Humidity (non condensing)	10% to 95% RH
Weight	10 gms approx

1. PRODUCT PROFILE



## Operating Instructions 2. DESCRIPTION 3. MIBRX card as shown in figure 1.1 is used as a plug in module in MIBRX series. 3. Easy to connect and replace. 3. Content of the series of the

MIBRX-SC-FIXX/ MIBRX-SC-FOXX-TOXX/ MIBRX-SC-FOXX-TOXX -N

NOTE : For installation procedure, refer MIBRX-XX-X-X-X Operating Instruction.

Figure 1.1 : Front view Patents applied worldwide

#### 3.ELECTRICAL SPECIFICA TIONS

	MIBRX-SC-FI02	MIBRX-SC-FO01-TO01	MIBRX-SC-FO01-TO02-N
		1 fast output pin & 1	1 fast output pin & 2
No. of output pins	NA	transistor output pin	transistor output pin
Output Type	NA	FO (NPN), TO (PNP)	FO (NPN), TO (NPN)
Output current	NA	100mA max per output	
Rated/Supply			
Voltage	18 to 30V DC		
Output mode	NA	FO: PWM / Pulse Outpu	it / PTO
Isolation	Yes >2kV		
Response time		TO : 10mS	
Output max frequecy	NA	FO : upto 200kHz*	
No. of input pins	2 fast input pins	NA	
Input Type	PNP/NPN selectable	NA	
No. of input pins	2 fast input pins	NA	
Input Type	PNP/NPN selectable	NA	
Input max frequecy	10kHz (Quad 5kHz)	NA	
Input mode (software)	Rate totalizer & Totalizer blocks (Selpro)	NA	
Input volatge range	0 – 30V (DC) PNP detection >10V	NA	
Supply type		Self Powered	
Temperature	Operating : 0 to 55°C ; Storage : -20 to 70°C		
Humidity(non condensing)	10% to 95% RH		
Weight	10 gms approx		

#### \*Upto 200kHz Note: Fast output conditions:

Max freq	Condition
200kHz	Max 1 slot**
100kHz	Max 2 slot**
60kHz	Max 3 slot**
10kHz	Normal condition (3 slots)

#### \*\* For > 10kHz, no fast input card should be used together

#### 4. SAFETY SUMMARY

To prevent risk of electric shock, power supply to the controller must be kept off while inserting / removing MIBRX-SC-FIXX/ MIBRX-SC-FOXX-TOXX/ MIBRX-SC-FOXX-TOXX -N.

#### NOTE :

For safety precautions, refer MIBRX-XX-X-X operating instruction.

#### 5. DISCLAIMER LIABILITY

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Tel. No. : + 91-7498077172 ; Email : service@selec.com

NO WARRANTY ON UNIT DAMAGED DUE TO WRONG POWER SUPPLY.

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#### 7. SAFETY SUMMARY

- > To prevent risk of electric shock, power supply to the controller must be kept off while wiring.
- > Wiring shall be done strictly according to the terminal layout provided in the operating manual.

NOTE : For Safety precautions, refer MIBRX-XX-X-X Operating instruction.

#### 8.DISCLAIMER LIABILITY

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Email : service@selec.com

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### <u>selec</u>

OP1081-V01

#### 1. PRODUCT PROFILE



Figure 1.1 : Front view Patents applied worldwide

#### MIBRX-SC-LC02

Operating Instructions

#### 2. DESCRIPTION

- MIBRX-SC-LC02 as shown in Figure 1.1 is used as a plug-in module in MIBRX series and not as an independent module.
- > Easy to connect and replace.
- > Scaling to engineering units.
- Real-time channel sampling.

**NOTE :** For installation procedure, refer MIBRX-XX-X-X Operating instruction.

3. ELECTRICAL SPECIFICATIONS		
No of Channels per card	2 Channels	
Input signal range	±19.5mV, ±39 mV, ±1.25 V, ±2.5 V (Jumper Selection)	
Excitation Output Voltage	5V DC ±10%/50mA (Jumper Selection)	
Exonation output voltage	9V DC ±10%/50mA	
Input Type	Differential	
Digital resolution	24 bits	
Applicable sensor type	4 - wire	
Input Offset Drift	100 nV/ °C	
Temperature coefficient Span	±2.5 ppm/ °C	
Linearity error	±0.05% of full scale reading	
Gain Error	0.1%	
Gain Drift	3 ppm/ °C	
Conversion method	Delta Sigma	
Conversion time	25 ms to 200 ms (user configurable)	
Permitted load cell resistance	350 Ω	
Common mode rejection (CMRR @50/60 Hz)	≥ 100 dB	
Operating Temperature	0 to 55°C	
Storage Temperature	-20 to 70°C	
Humidity	95.00%	
Weight (g)	40	

#### 4. TYPICAL WIRING DIAGRAM



#### 5. CALIBRATION PROCEDURE

#### Step 1 : CARD CONFIGURATION

1. Configure MIBRX-SC-LC02 card for a given controller using SELPRO programming software. For details of the software and configuration method, please refer to the SELPRO/help. 2. Assign LOADCELL block for configuration as shown in SELPRO software.

EN ENO	-	Abbreviation	Explanation	I
CS PW	i-	CS	Conversion Sp	eed
TT ERF	<u>ا</u>	TT	Tear Trigger	
CN		SN	Slot Number where the Load	cell card is configured
314		CHNO	Channel number which is t	o be calibrated
CHNO		PW	Present Weig	ht
		ERR	Sensor Erro	r
		FBB	Explanation	]
			Explanation	
		0	No Error	
		1	Sensor Open	

Wrong Calibration / Default

#### NOTE :

EN

cs τт SN СН

1. In MIBRX-4M-X-X-X max.limit for no. of MIBRX-SC-LC02 cards is 2. (In Slot 1 & 2 Only) 2. The MIBRX-SC-LC02 card shall be re calibrated if sensor is changed.

#### 6. TYPICAL JUMPER SELECTION DIAGRAM

2

	For gain ju	mper selection ref.below table.	
	Gain	Jumper Selection	Jumper No.
4321	0	Short pin 1&2,3&4	BERG6
BERG6	1	Short pin 1 & 2	BERG6
ļ	2	Short pin 3 & 4	BERG6
∾■ 3	3	No Jumper	BERG6
	For exct. v	oltage jumper selection ref.below	table.
	Exct.Vtg	Jumper Selection	Jumper No.
	9V	Short pin 2 & 3	JP2
	5V	Short pin 1 & 2	JP2
oc. name : OP INST MIBRX-SC-	LC02		OP1081-V01 (Page 2 c

#### Step 2 : GAIN SELECTION

Maximum loadcell output at rated load = rated output x excitation output voltage. Example : Rated Output = 2 mV/V

Excitation Output Voltage = 5 V

So, Maximum Loadcell Output at Rated Load = +10 mV

Calculated Loadcell Output ≤ Max. Differential input. (See the table below)

Therefore, Gain = 3 selected.

where x = 0,1,2,3

Gain	PGA ( Programmable Gain Amplifier )	Max. Differential input
0	1	+/- 2.5 V
1	2	+/- 1.25 V
2	64	+/- 39 mV
3	128	+/- 19.5 mV

#### Step 3 : CONVERSION SPEED SELECTION

Conversion speed (CS)	Conversion time/channel
0	100 ms
1	12.5 ms

#### **Conversion Speed Calculation :**

CS_CH0	CS_CH1	CH0 Response time
0	0	100 ms x 2 = 200 ms
1	1	12.5 ms x 2 = 25 ms
1	0	12.5 ms + 100 ms = 112.5 ms
0	1	100 ms + 12.5 ms = 112.5 ms

NOTE : Set common conversion speed for all channel for better accuracy via SELPRO software.

#### Step 4 : CALIBRATION

		_	
-	EN	ENO	-
-	LC_C SN	ALB	
-	CHNO		
-	CD		
-	SPWT		
Ze	ro Ca	libra	tion

Assign LC CALB block for calibration as shown, in SELPRO software. Now, download the configuration into the controller.

NOTE : During Calibration, set Tear Trigger CHx=0

Abbreviation	Explanation
SN	Slot Number where the Load cell card is configured
CHNO	Channel number which is to be calibrated
CD	Calibration Code : 0 = to calibrate at Zero weight 1 = to calibrate at Span weight
SPWT	Span Weight Value

2) Set CD = 0 3) Remove weight 4) Trigger EN pin

5) Observe present weight in PW.

6) Zero calibration done

1) Set SN = 1 (Slot Number)

#### Span Calibration

7) Set CD=1

8) Put max. known weight on sensor

9) Set SPWT = counts required against known weight

Example : Max. known weight = 1 kg

Set SPWT = 1000; if 1 g resolution is required

Set SPWT = 1000000; if 1 mg resolution is required

NOTE : Span counts should not exceed digital resolution of MIBRX-SC-LC02

10) Trigger EN pin

11) Observe present weight in PW.

12) Span weight calibration done

Doc. name : OP INST MIBRX-SC-LC02

OP1081-V01 (Page 3 of 4)

1. PRODUCT PROFILE

#### 2. DESCRIPTION

MIBRX-SC-PD card as shown in figure 1.1 is used as a plug in ladder downloader module in MIBRX series.

MIBRX-SC-PD

**Operating Instructions** 

Easy to connect and replace.

NOTE : For installation procedure, refer MIBRX-XX-X-X-X Operating Instruction. OS supported: Windows only.

Figure 1.1 : Front view Patents applied worldwide

#### 3. ELECTRICAL SPECIFICATIONS

Mode of communication with MIBRX	UART
Mode of communication with PC (SELPRO)	USB (micro USB B type)
Supply type	Self powered
Temperature	Operating : 0 to 55°C ; Storage : -20 to 70°C
Humidity (non condensing)	10% to 95% RH
Weight	10.77gms

4. FUNCTIONAL DETAILS	SELPRO to MIBRX-SC-PD		
1. To download ladder from	CONDITION	GREEN LED	RED LED
Connect MIBRX-SC-PD to the computer using micro USB to USB cable (micro - B to A male). In SELPRO make sure to check the 'Select Portable Downloader	Downloading	Slow blinking	OFF
	After Download	ON	OFF
	ERR	OFF	ON for 2 seconds
Mode' in the Downloader dialogue	No Ladder	OFF	OFF
Dox and click on Download.			
2. To download ladder from MIBRX-SC-PD to MIBRX PLC : Insert the MIBRX-SC-PD into the slot 2 of MIBRX PLC. Keep the 'ENT' key	MIBRX-SC-PD to MIBRX		
	CONDITION	GREEN LED	RED LED
pressed and power 'ON' the MIBRX PLC. Belease the 'ENT' key after 3 seconds	Downloading	Fast blinking	OFF
Once the bootloader screen is loaded, press the 'DLD' key on the MIBRX-SC-PD to start the ladder	After Download	ON	OFF
	ERR	ON	ON
download process. USB cable is not	<b>D N</b>		

Bootloader Mismatch ON

required to be connected. In case of touch display, to load the bootloader screen, power ON the MIBRX PLC & hold the 'ENT' for 3 seconds.

Doc. Name : OP INST MIBRX-SC-PD

OP1023-V01(Page 1 of 2)

ON for 2 seconds



#### NOTE :

If MIBRX-SC-PD is not detected in your computer to download ladder from SELPRO to MIBRX-SC-PD, kindly first download and install the windows driver for the same from our website.



Figure 1.2 : PCB

#### FOR MIBRX-2M SERIES :

To enable portable downloading mode in MIBRX-2M series, keep 'ENT' key pressed at power ON then release and press again (within 3 second at power ON). It will display 'PD' or 'P' once portable downloading mode is activated in MIBRX-2M series.

#### **5. SAFETY SUMMARY**

To prevent risk of electric shock, power supply to the controller must be kept off while inserting / removing MIBRX-SC-PD.

#### NOTE :

For safety precautions, refer MIBRX-XX-X-X operating instruction.

#### 6. DISCLAIMER LIABILITY

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#### **?** 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.** 

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

#### MIBRX-SC-WIFI

Operating Instructions

#### 1. PRODUCT PROFILE



#### 2. OVERVIEW

MiBRX-SC-WIFI is a monitoring device that allow you to send serial data over WiFi (2.4 Ghz) to Selec IOT with a maximum of 8 gueries.

#### 3. WARNING

Plug in this card only after turning off MiBRX PLC to avoid damage to the card.

#### 4. SPECIFICATIONS

ITEM		SPECIFICATIONS		
Pov	Power supply			
Power Consumption	< 1W			
Supply Type		Self Powered		
WIFI INTERFACE				
Standard N/W	902 11 b/a/p*			
Compliance	602.11 b/g/1			
Network mode	Infrastructure / Ad-Hoc / Infrastructure and Ad-Hoc			
Transmission rate	802.11 a/g : 65,54,48,36,24, 18,12,9,6 Mbps, Auto rate 802.11b : 11, 5.5, 2, 1Mbps, Auto rate 802.11n 2.4GHz : HT20 : HT420 & HT40 MCS 0.7			
Transmission Distance	Upto 70 meters (in Open Area)			
Operating Channels	1-11(2.4GHz 802.11)			
Network Protocol	TCP/ IP, DHCP, DNS, MQTT, Payload RawHex, data format Json			
Security	WPA-PSK and WPA2-PSK			
ENVIRONMENTAL CC	ND	ITION		
Operating Temperature 0°C to 55°C				
Storage Temperature	-20°C to 70°C			
Humidity ( non- condensing)		10% to 95% RH		
Weight		Approx 11ams		

#### 5. LED INDICATION

CONDITION	LED NW
Internet / WiFi Failure	Red Blink
Access Point (AP) Mode	Orange Blink
Modbus Error	Red ON
All OK	Green ON
Card Detection	Orange On

DEVICE FACTORY RESET SEQUENCE:

In order to factory reset the converter to default setting and put the converter in AP mode, press and hold the reset button for 10 sec and release. Follow AP mode LED status to ensure factory reset happened.

#### 6. DIAGRAM



Figure 1.1 : PCB TOP VIEW (Jumper Selection)

Note :

Jumper cap 4M is applicable for MiBRX-4M, MiBRX-6M, MiBRX-96, MiBRX-48, MiBRX-72.

Jumper cap 2M is applicable only for MiBRX-2M.



Figure 1.1 : PRODUCT FRONT VIEW

DEVICE DEFAULT ACCESS:

P	: 192.168.4.1

Password : iotwifi123

#### 7. CONFIGURATION

PRECAUTION :

- When connecting to the converter, ignore the no internet in selected N/W message if displayed on smart device.
- Converter installation should be done in the vicinity of the router.

Doc. Name : OP INST MIBRX-SC-WIFI\_OP1095-V01 (Page 1 of 2)

#### OVERVIEW OF WIFI CONFIGURATOR :

The Wifi configurator is used to find out and configure Selec Wifi converters on the network. Below are the steps of configuration-

STEP 1: Turn ON the converter and observe the LED's. Open mobile Wifi and connect with the converter's MAC address. If not able to see MAC address refresh the page and try again.

2121	≈ 46 KB/s VoLTE	0932 WI-FI	@ @ !	92% 🔳 🤅	
	Turn on Wi-Fi		•	0	
	Wi-Fi Assistant Intelligently select	Wi-Fi or Mcbile			
~	Selec Productio	n	8 V	0	
WI-FI	MIBRX:B8:F0:05	:8A:28:38	a 🕈	0	←
	AndroidAP6DE4		a 🗢	0	•
	guest1		<b>B</b> 👳	(i)	
	SMDW01		8 V	Û	
	Reflex Technolo	gy	<b>b</b> $\nabla$	0	
	SMDW01_56		A 🗢	0	
	Manually Add a	Network			

STEP 2: Once connected to converter via WiFi, go to any browser (e.g.Chrome)and enter 192.168.4.1 and press search. The selec wifi configurator page appears.



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 Fax No. : +91-22-28471733 Toll free : 1800 227 353 (BSNL/MTNL Subscribers only) Website : www.selec.com | Email : sales@selec.com STEP 3: Go to wifi-config page and select your Router SSID and enter it's password and click on save. When the connection gets successful the "Connection Successfull" message shows, if it is failed it shows as " Connection Failed", in that case refresh the page and try again.

115년 중 9 KB	S VoLTE 09:34 S lic internet connection	49 (ja 915) 💼)
0 🔺	192.168.4.1/#connection	1
Ξ	56	Lec'loT
	WIFI PAESWCRD	
	STIAN SAVE	
	- Contract	•

In case of error / failure to connect your router, factory reset your device and restart the procedure again from STEP1.

#### 8. SERVICE DETAILS

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