SERIAL RS-232 / RS-422 / RS-485 FIBER OPTIC MODEM
RS-FX-MM, RS-FX-SM40

ИСО 9001

OPERATIONS MANUAL

1 DESCRIPTION AND OPERATION

1.1 Product Purpose

1.1.1 RS-FX-MM / RS-FX-SM40 Serial RS-232 / RS-422 / RS-485 Fiber Optic Modem (hereinafter referred to as the modem) is designed to convert a standard RS232 / RS485 / RS422 signal to a fiber optic link to extend the signal up to 40 Km.

1.1.2 The modem is intended for round-the-clock operation.

1.1.3 The modem is classed as non-repairable and periodically serviced equipment.

1.1.4 The modem is designed to be operated in residential, commercial, and industrial areas.

1.1.5 The modem's design doesn't imply operating it in aggressive and dusty environments or in explosion and fire hazardous premises.

1.2 Specifications

Table 1.2.1

Parameter	Value
1.2.1 Power input	1
1.2.2 Power supply voltage, Vdc	12 through 48
1.2.3 Power rate, W, max	3
1.2.4 Start-up time, s	10
1.2.5 Data rates, bps	300 through 115200
1.2.6 Fiber range: - RS-FX-MM, km - RS-FX-SM40, km	2 40
1.2.7 Fiber optic cable: - RS-FX-MM, μm - RS-FX-SM40, μm	Multi-mode 50/125 Single-mode 9/125
1.2.8 Fiber connector	SC/PC
1.2.9 Optic wavelength, nm	1,310
1.2.10 Serial range: - RS-232, m - RS-422, RS-485, m	15 1,000
1.2.11 Orion ISS devices per a single RS-485 interface bus, max	127
1.2.12 Enclosure protection degree as per GOST 14254-2015	IP20
1.2.13 Resistance to mechanical exposure as per OST 25 1099-83	Arrangement Category III
1.2.14 Vibration exposure: - Frequency range, Hz - Max acceleration, g	1-35 0.5
1.2.15 Environmental category as per OST 25 1099-83	O3
1.2.16 Operation temperature,°C	Minus 30 to plus 55
1.2.17 Weight, kg, max	0.3
1.2.18 Overall dimensions, mm	95×70×29
1.2.19 Non-stop operation	24/7
1.2.20 MTBF, h, min	80,000
1.2.21 Survival probability after 1,000 hours	0.98758
1.2.22 Expected service life, years	10

1.2.23 In terms of immunity to electromagnetic interference, the equipment meets the requirements of Test Severity Level III as per the relevant standards listed in Appendix 'Б' to GOST R 53325-2012.

1.2.24 The equipment passes the industrial interference standards prescribed for Class 'Б' equipment as per GOST R 30805.22.

1.2.25 The modems are to be powered from battery backed power supplies RIP-12 or RIP-24 (of series approved by Fire Certificates) that send faults occurred in the power supply line to an alarm loop of a control and indicating equipment (such as Signal-10, Signal-20M, Signal-20P) or to the network controller (S2000M control panel or Orion Pro Software Suite).

1.3   Scope of Delivery

The modem comes along with the parts shown in Table 1.3.1.

Table 1.3.1

Item	Q-ty, pcs.
RS-FX-MM RS-FX-SM40	1
Operations Manual	1
Resistor C2-33H-0.25-620 Ohm 5%	3
Wall Mount Bracket	1
Screw	2
Wall plug	2

2   INTENDED USE

2.1   The design of the modem meets the requirements of fire and electrical safety including operation in emergency in accordance with GOST 12.2.007.0-75 and GOST 12.1.004-91.

2.2   Do shut off the mains power from the modem before mounting, installing, and maintaining this one.

2.3 Operating restrictions, design, mounting, connecting, settings, testing and operation procedures for the modem are defined in details in its User's Manual (the full version), which is available online at bolid.ru in the section Products on the page of RS-FX-MM, RS-FX-SM40.

2.4 If a technical failure of the modem has been found, the equipment shall be taken out of operation and sent for repair in accordance with Section 4.

3   MAINTENANCE

3.1   The modem shall be maintained by persons qualified for Accident Prevention of Level II or higher.

3.2 The maintenance procedures to be performed are described in RS-FX-MM / RS-FX-SM40 User's Manual (the full version, please see Section 2.3 of this manual).

4   REPAIR

4.1 Repair of faulty equipment is to be performed by the manufacturer or in authorized repair centers. The equipment shall be sent for repair in compliance with Company Standard QMS 8.5.3-2015, which can be found online at our website https://bolid.ru/support/remont/.

Attention!

The equipment shall be submitted for repair being assembled and clean and along with all the parts listed in the technical documentation.

Claims are accepted only if a reclamation report describing the problem is applied to the submitted equipment.

4.2 A product's failure resulted from consumer's not observing rules of mounting and operation is not a reason for claims and warranty repair.

4.3 Claims should be submitted to the following address:

NVP BOLID, #4 Pionerskaya Str., Korolyov, Moscow Region, 141070, Russia

Phone: +7 (495) 775-71-55. E-mail: info@bolid.ru.

4.4 In case of any issue related to use of the product, please contact the technical support: +7 (495) 775-71-55 or e-mail: support@bolid.ru.

5 STORAGE

5.1 In a transport container the equipment can be stored at ambient temperatures minus 50°C through plus 50°C and relative humidity up to 95% at plus 35°C.

5.2 In the consumer package the equipment shall be stored only in heated premises at temperatures plus 5°C through plus 40°C and relative humidity up to 80% at plus 20°C.

6 TRANSPORTING

6.1 The modem can be transported in a transport package at ambient temperatures minus 50 through plus 50°C and relative humidity up to 95 % at plus 35 °C.

7 DISPOSAL

7.1 The equipment is to be disposed of considering that there are no toxic components in it.

7.2 The content of precious materials: does not require accountability for storage, retirement and disposal (Clause 1.2 of GOST 2.608-78).

7.3 The content of non-ferrous metals: does not require accountability for retirement and further disposal.

8 MANUFACTURER WARRANTY

8.1 The manufacturer guaranties the product meets with technical requirements stated in the manuals if the user follows the instructions for transportation, storage, installation, and usage.

8.2 The warranty period is 18 months since putting the product into operation but no more than 24 months from the manufacturer's date of production.

9 CERTIFICATES INFORMATION

For certificates information, please refer to RS-FX-MM / RS-FX-SM40 User's Manual (the full version, please see Section 2.3 of this manual).

10 ACCEPTANCE AND PACKAGING CERTIFICATE

Product	Factory Number	Packed By	Date, Month, Year
RS-FX-MM			
RS-FX-SM40			

is manufactured, accepted in line with mandatory requirements of national standards and applicable technical documentation, approved as ready for use, and packaged by the Bolid Company.