

## SHPS-12 FIRE EQUIPMENT MOUNT BOXES WITH BACKUP BATTERY POWER SUPPLIES

ShPS-12	<input type="checkbox"/>	ShPS-12 mod.01	<input type="checkbox"/>	ShPS-12 mod.02	<input type="checkbox"/>
ShPS-12 mod.10	<input type="checkbox"/>	ShPS-12 mod.11	<input type="checkbox"/>	ShPS-12 mod.12	<input type="checkbox"/>

**ICO 9001**

Operations Manual



### 1 DESCRIPTION AND OPERATION

#### 1.1 Purpose

1.1.1 ShPS-12, ShPS-12 mod.01, ShPS-12 mod.02, ShPS-12 mod.10, ShPS-12 mod.11, ShPS-12 mod.12 (hereinafter referred to as ShPS-12) are meant to provide power supply for groups of installed fire control equipment, manual call points, alarm and control panels (modules) and other fire protection equipment requiring 12V/DC.

ShPS-12 mod.01 boxes differ from ShPS-12 boxes by a transparent window door; ShPS-12 mod.02 boxes differ from ShPS-12 boxes by IP54 ingress protection rating.

ShPS-12 mod.11 differs from ShPS-12 mod.10 by a transparent window door; ShPS-12 mod.12 differs from ShPS-12 mod.10 by IP54 ingress protection rating.

ShPS-12 mod.10, ShPS-12 mod.11, ShPS-12 mod.12 differ from ShPS-12, ShPS-12 mod.01, ShPS-12 mod.02 by two separate RS-485 interface lines (instead of one line, see Clause 1.2.9).

An ShPS-12 box can accommodate the following Orion ISS devices: Signal-10, Signal-20P, S2000-4, S2000-KDL, S2000-KPB, S2000-SP1, S2000-PI, S2000-KDL-2I, Rupor mod.02, S2000-PGE, S2000-PGE mod.01, S2000-Ethernet, S2000-RPI and other devices mountable on 35 mm top-hat DIN rail in accordance with GOST R MEK 60715-2003.

1.1.2 ShPS-12 is designed for 24/7 continuous operation with intended output parameters, automatic monitoring and charging of sealed backup batteries. ShPS-12 provides disconnecting backup batteries from load circuits to avoid unacceptable discharge. ShPS-12 provides protection against open / short failures for the battery connection circuit.

1.1.3 ShPS-12 provides visual and audible indication of the following: mains supply status (availability, high / low voltage), backup battery status, missed batteries, disconnection of low batteries, output short circuit / overcurrent, charger faults, output overvoltage, status of communications over the RS-485 interface bus.

1.1.4 Being powered by mains and by batteries, ShPS-12 provides overvoltage and short-circuit protection for 12V/DC outputs, with the output voltage being restored automatically after repairing an output short-circuit fault.

1.1.5 ShPS-12 shall be installed in locations protected from atmospheric precipitation and mechanical damage. ShPS-12 boxes are not designed for operating in locations where they can be exposed to explosion and / or flammable hazards.

1.1.6 ShPS-12 is classed as recoverable and periodically serviced equipment.

#### 1.2 Specifications

**Table 1**

No.	Parameter	Value
1.2.1	Power Inputs	2
1.2.2	Primary power supply: The mains utility AC power 50/60 Hz	150...253 V
1.2.3	Backup power supply: Bolid series batteries AB 1207 (the type C or M)* or similar	12 V, 17 Ah (2 batteries)
1.2.4	Output voltage: while powered by	mains (13.6±0.6) V batteries (13.5...9.5) V
1.2.5	Rated / maximum load current	3 A / 3.5 A **
1.2.6	Outputs for powering devices consuming 12 V and installed within ShPS-12	7
1.2.7	Maximum current per a single output 12V/dc	0.65 A
1.2.8	Outputs for connecting RS-485 interface lines installed within ShPS-12	7
1.2.9	For ShPS-12, ShPS-12 mod.01, ShPS-12 mod.02: RS-485 port for connecting external devices over the RS-485 interface	1
	For ShPS-12 mod.10, ShPS-12 mod.11, ShPS-12 mod.12: Separate RS-485 ports for connecting external devices over the RS-485 interface	2
1.2.10	Capacity of non-volatile event log	95 events
1.2.11	Maximum power / current consumed from the mains	120 V·A / 0.8 A
1.2.12	Current consumed from the batteries by the ShPS-12 itself	40 mA max

No.	Parameter	Value
1.2.13	Ripples of the output voltage (peak-to-peak) at rated load current	100 mV max (VR1 class as per GOST R 51179-98)
1.2.14	Low-battery shutdown voltage	(10.2±0.6) V
1.2.15	The ShPS-12 backup time when started with full-charged batteries at 3 A load current and temperature of 298 K (+25 °C)	8 hours at least
1.2.16	Time to charge fully discharged batteries Maximum charging rate for each battery	36 hours max 0.7 A
1.2.17	Maximum current available for additional consumers of mains power 220V / 50Hz	10 A
1.2.18	Electric shock protection class as per GOST 12.2.007.0-75	I
1.2.19	Enclosure protection degree as per GOST 14254-2015 • ShPS-12, ShPS-12 mod.01, ShPS-12 mod.10, ShPS-12 mod.11 • ShPS-12 mod.02, ShPS-12 mod.12	IP41 IP54
1.2.20	Resistance to mechanical exposure as per OST 25 1099-83	Arrangement Category III
1.2.21	Vibration exposure: - Frequency range - Max acceleration	1-35 Hz 0.5 g
1.2.22	Environmental category as per OST 25 1099-83	O3
1.2.23	Operating temperature range	Minus 10 through +40 °C
1.2.24	ShPS-12 weight without batteries / with batteries	15 / 27 kg
1.2.25	Overall dimensions	650 mm × 500 mm × 220 mm
1.2.26	Non-stop operation	Round-the-clock
1.2.27	MTBF	40000 h
1.2.28	Survival probability over a period of 1000 hours	0.975
1.2.29	Expected service life of ShPS-12	10 years

\* The letters C and M define the battery service life as 12 and 15 years respectively.

\*\* The maximum load current is 3.5 A (for short-duration periods of up to 2 minutes at intervals of at least one hour provided that the mains power is available and batteries are connected). When the output current is over 3.5 A, the ShPS-12 box turns off the charger. When the output current is over 4A, ShPS-12 disables the output voltage.

1.2.30 ShPS-12 provides monitoring mains voltage, output voltage, and battery voltage with automatic sending of messages about presence of relevant voltages / faults, battery discharge, bad battery health or battery disablement, and tampering over the RS-485 interface.

1.2.31 The built-in PSU of ShSP-12 is ready to operate after 6 seconds upon powering up.

1.2.32 ShPS-12 features a Remote Fault Output – a solid state relay with the following parameters: maximum switched voltage / current is 80 V / 50 mA; maximum resistance of closed relay circuit is 50 Ohm; maximum open circuit leakage current at 80 V is 1 uA.

1.2.33 In terms of immunity to electromagnetic interference, the ShPS-12 meets the requirements of Test Severity Level III as per the relevant standards listed in Appendix ‘B’ to GOST R 53325-2012.

1.2.34 ShPS-12 passes the industrial interference standards prescribed for Class ‘B’ equipment as per GOST R 30805.22.

1.2.35 ShPS-12 design provides protection against unauthorized access inside the box by means of the key lockable door. There are no control elements outside the ShPS-12 box.

1.2.36 ShPS-12 provides tamper monitoring by means of a tamper switch with contacts closed when the box door is closed and open when the box door is open.

1.2.37 In case of malfunction or misuse, the design of ShPS-12 provides fire safety in accordance with GOST 12.1.004-91.

1.2.38 Insulation strength of live parts of the ShPS-12 box is not less than 2,000 V (50 Hz) between circuits linked to 220V AC and the enclosure as well as between circuits linked to 220V AC and any circuits not linked to 220V AC.

1.2.39 Insulation strength of separate interface lines and other circuits for ShPS-12 mod.10, ShPS-12 mod.11, and ShPS-12 mod.12 is at least 500 V, 50 Hz.

1.2.40 The electrical insulation resistance between the circuits mentioned above in the para 1.2.38 is at least 20 mega ohms (in normal conditions as defined in Clause 5.14.6 of GOST 52931-2008).

### 1.3 Scope of Delivery

Table 2 presents the delivery scope for the ShPS-12.

**Table 2**

Item	Q-ty, pcs.
ShPS-12	1
ShPS-12 mod.01	
ShPS-12 mod.02	
ShPS-12 mod.10	
ShPS-12 mod.11	
ShPS-12 mod.12	
<b>Accessory Kit:</b>	
Fasteners: (eye bracket, bolt, nut, screw, wall plug)	4
Rubber cable gland:	
ShPS-12; ShPS-12 mod.01	6
ShPS-12 mod.10; ShPS-12 mod.11	6
ShPS-12 mod.02; ShPS-12 mod.12	4
For ShPS-12 mod.10, ShPS-12 mod.11, ShPS-12 mod.12:	
Jumper MJ-0-6 (2.54 × 6 mm)	2
Key	2
Packaging	1
<b>Documentation</b>	
ShPS-12, ShPS-12 mod.01, ShPS-12 mod.02, ShPS-12 mod.10, ShPS-12 mod.11, ShPS-12 mod.12 Operations Manual	1

*Note. No battery is included in the standard delivery!*

## 2 INTENDED USAGE

2.1 The product design meets the requirements of fire and electric safety including emergency operation in accordance with Russian standards GOST 12.2.007.0-75 and GOST 12.1.004-91.

2.2 The ShPS-12 shall be wired as shown in the connection diagram located on the inside of the ShPS-12's cover.

2.3 Do shut off the mains power from the ShPS-12 before mounting, installing, and maintaining this one.

2.4 Operating restrictions, design, mounting, connecting, settings, testing and operation procedures for the ShPS-12 are defined in details in its User's Manual (the full version), which is available online at [bolid.ru](http://bolid.ru) in the section Products on the page of ShPS-12 or using the mobile app 'Mobile Product Catalogue' <https://bolid.ru/support/mobile-catalogue/>.

2.5 If a technical failure of the product 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 ShPS-12 shall be maintained by persons qualified for Electrical Safety of Level III or higher.

3.2 Maintenance works for the ShPS-12 are described in its User's Manual (the full version, see Section 2.4 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 documentation.

Claims are accepted only if a reclamation report describing the failure 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/fax: +7 (495) 775-71-55 (PBX). E-mail: [info@bolid.ru](mailto: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](mailto:support@bolid.ru).

## 5 STORAGE

5.1 In a transport container the equipment can be stored at ambient temperatures ranged from minus 30°C to +50°C and relative humidity of 95% at +35°C.

5.2 In consumer packages the equipment can be stored only in heated premises at ambient temperatures +5°C through +40°C and relative humidity up to 80% at +20°C.

5.3 Batteries shall be stored in accordance with rules and storage conditions established by the battery manufacturer.

**6 TRANSPORTING**

The ShPS-12 can be transported in a transport container at ambient temperatures ranged from minus 50°C to +50°C and relative humidity of 95% at +35°C.

**7 DISPOSAL**

7.1 The ShPS-12 is to be disposed of considering that there are no toxic components in it.

7.2 Batteries are classed as hazardous waste of Class II, so used up batteries shall be disposed of by a specialized company that is licensed for this activity.

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

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

**8 MANUFACTURER WARRANTY**

8.1 The manufacturer guaranties the ShPS-12 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**

For certification information, please refer to ShPS-12 User's Manual (the full version, see Section 2.4 of this manual).

**10 ACCEPTANCE AND PACKAGING CERTIFICATE**

The fire equipment mount box with battery backed power supply

- |   |   |
|---|---|
| <input type="checkbox"/> ShPS-12        | <input type="checkbox"/> ShPS-12 mod.10 |
| <input type="checkbox"/> ShPS-12 mod.01 | <input type="checkbox"/> ShPS-12 mod.11 |
| <input type="checkbox"/> ShPS-12 mod.02 | <input type="checkbox"/> ShPS-12 mod.12 |

with Factory No. \_\_\_\_\_ 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.

Responsible for acceptance and packaging

QCD \_\_\_\_\_  
Full Name Date/Month/Year

