

**ShPS-24 FIRE EQUIPMENT MOUNT BOXES
WITH BACKUP BATTERY POWER SUPPLIES**

ShPS-24	<input type="checkbox"/>	ShPS-24 mod.01	<input type="checkbox"/>	ShPS-24 mod.02	<input type="checkbox"/>
ShPS-24 mod.10	<input type="checkbox"/>	ShPS-24 mod.11	<input type="checkbox"/>	ShPS-24 mod.12	<input type="checkbox"/>

ICO 9001

Operations Manual



1 DESCRIPTION AND OPERATION

1.1 Purpose

1.1.1 ShPS-24, ShPS-24 mod.01, ShPS-24 mod.02, ShPS-24 mod.10, ShPS-24 mod.11, ShPS-24 mod.12 (hereinafter referred to as ShPS-24) are meant to provide power supply for groups of contained fire protection equipment, fire and intrusion detectors and control and indicating equipment, and other hardware that require 24V/DC.

ShPS-24 mod.01 differs from ShPS-24 by transparent window being in its door. ShPS-24 mod.02 differs from ShPS-24 by IP54 ingress protection rating.

ShPS-24 mod.11 differs from ShPS-24 mod.10 by transparent window being on its door. ShPS-24 mod.12 differs from ShPS-24 mod.10 by IP54 ingress protection rating.

ShPS-24 mod.10, ShPS-24 mod.11, ShPS-24 mod.12 differ from ShPS-24, ShPS-24 mod.01, ShPS-24 mod.02 relatively by featuring two separate RS-485 interface lines (instead of a single line, see Clause 1.2.9).

A ShPS-24 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 rev.02, S2000-PGE, S2000-PGE rev.01, S2000-Ethernet, S2000-RPI and other devices mountable on 35 mm top-hat DIN rail in accordance with GOST R IEC 60715-2003.

1.1.2 ShPS-24 is designed for 24/7 continuous operation.

1.1.3 ShPS-24 provides automatic monitoring and charging of sealed backup batteries. ShPS-24 provides disconnecting backup batteries from load circuits to avoid unacceptable discharge. ShPS-24 provides protecting the battery connection circuits against open / short failures.

1.1.4 ShPS-24 provides visual and audible indication of its current conditions: availability of mains supply voltage, high/low mains voltage, battery charge level, missed batteries, disconnection of low batteries, output short circuit / overcurrent, charger faults, output overvoltage, status of communications over the RS-485 interface bus.

1.1.5 Being powered by mains and by batteries, ShPS-24 provides overvoltage and short-circuit protection for its 24V/DC output, with the output voltage being restored automatically after having an output short-circuit fault repaired.

1.1.6 ShPS-24 shall be operated in locations protected from exposure to atmospheric precipitation and mechanical damage. ShPS-24 boxes are not designed for operating in explosion and / or flammable hazardous premises.

1.1.7 ShPS-24 is classed as restorable 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 230 V, 50/60 Hz with useful working range of, V	150...253	
1.2.3	Backup power supply: Bolid series batteries AB 1217 (type C or M)* or similar, 12 V, 17 Ah	2	
1.2.4	Output DC voltage: while powered by	mains, V	27.2±0.6
		batteries, V	27...19
1.2.5	Rated / maximum total load current, A	2 / 2.2 **	
1.2.6	Outputs for powering devices consuming 24 V and installed within ShPS-24	7	
1.2.7	Maximum current per a single output 24V/dc, A	0.4	
1.2.8	Outputs for connecting RS-485 interface lines for devices installed within ShPS-24	7	
1.2.9	For ShPS-24, ShPS-24 mod.01, ShPS-24 mod.02: RS-485 port for connecting external devices over the RS-485 interface	1	
	For ShPS-24 mod.10, ShPS-24 mod.11, ShPS-24 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, events	95	

No.	Parameter	Value
1.2.11	Maximum power consumed from the mains, V·A / W	120 / 65
1.2.12	Maximum current consumed from the mains, A	0.8
1.2.13	Current consumed from the batteries by the ShPS-24 itself, mA, max	40
1.2.14	Ripples of the output voltage (peak-to-peak) at rated load current (Class VR1 as per GOST R 51179), mV, max	100
1.2.15	Low-battery shutdown voltage, V	(20.4±0.6)
1.2.16	The ShPS-24 backup time when started with full-charged batteries at 2 A load current and temperature of 298 K (+25 °C), hours, at least	8
1.2.17	Time to charge fully discharged batteries, hours, max	36
1.2.18	Maximum charging rate, A	0.7
1.2.19	Maximum current available for additional consumers of mains power 230V / 50Hz, A	10
1.2.20	Electric shock protection class as per GOST 12.2.007.0-75	I
1.2.21	Enclosure protection degree as per GOST 14254 <ul style="list-style-type: none"> • ShPS-24, ShPS-24 mod.01, ShPS-24 mod.10, ShPS-24 mod.11 • ShPS-24 mod.02, ShPS-24 mod.12 	IP41 IP54
1.2.22	Vibration exposure: - Frequency range, Hz - Max acceleration, g	1-35 0.5
1.2.23	Environmental category as per OST 25 1099-83	O3
1.2.24	Operating temperature range, °C	Minus 10 through +40
1.2.25	Relative humidity at +40°C, %, max	93
1.2.26	ShPS-24 weight without batteries / with batteries, kg	15 / 27
1.2.27	Overall dimensions, mm	650 × 500 × 220
1.2.28	MTBF	40,000 h
1.2.29	Non-stop operation	Round-the-clock
1.2.30	Probability of survival within 1000 hours	0.975
1.2.31	Expected service life of ShPS-24, years	10

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

** The maximum load current is 2.2 A (for short-duration periods of up to 10 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 2.2 A, the ShPS-24 box turns off the charger. When the output current is over 2.5 A, ShPS-24 disables the output voltage.

1.2.32 ShPS-24 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.

1.2.33 ShPS-24 is ready to operate after 6 seconds upon powering up.

1.2.34 ShPS-24 features a Remote Fault Output that is a solid state relay with the following parameters: maximum switched voltage / current are 80 V / 50 mA, maximum resistance of closed relay circuit is 50 Ohm, maximum open circuit leakage current at 80 V is 1 uA.

1.2.35 In terms of immunity to electromagnetic interference, ShPS-24 meets the requirements of Test Severity Level III with performance criteria A as per the relevant standards listed in Appendix 'B' to GOST R 53325-2012.

1.2.36 ShPS-24 passes the industrial interference standards prescribed for Class 'B' equipment as per GOST R 30805.22.

1.2.37 ShPS-24 design provides protection against unauthorized access inside the box by means of the key lockable door. There are no control elements outside the ShPS-24 box.

1.2.38 ShPS-24 provides tamper monitoring by means of a tamper switch with contacts are closed when the box door is closed and open when the box door is open.

1.2.39 Insulation strength of live parts of the ShPS-24 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.

1.2.40 Insulation strength of separate interface lines and other circuits for ShPS-24 mod.10, ShPS-24 mod.11, and ShPS-24 mod.12 is at least 500 V, 50 Hz.

1.2.41 The electrical insulation resistance between the circuits mentioned above in the paras 1.2.39 and 1.2.40 is at least 20 mega ohms (in normal conditions as defined in Clause 5.14.6 of GOST 52931).

1.2.42 In case of normal operation and in case of faulty conditions neither of the ShPS-24 components runs hot over admissible values stated in GOST R IEC 60065.

1.3 Scope of Delivery

Table 2 presents the delivery scope for the ShPS-24.

Table 2

Item	Q-ty, pcs.
ShPS-24 ShPS-24 mod.01 ShPS-24 mod.02 ShPS-24 mod.10 ShPS-24 mod.11 ShPS-24 mod.12	1
Documentation	
ShPS-24, ShPS-24 mod.01, ShPS-24 mod.02, ShPS-24 mod.10, ShPS-24 mod.11, ShPS-24 mod.12 Operations Manual	1
Accessory Kit:	
Fasteners: (eye bracket, bolt, nut, screw, wall plug)	4
Rubber cable gland: ShPS-24; ShPS-24 mod.01; ShPS-24 mod.10; ShPS-24 mod.11	6
ShPS-24 mod.02; ShPS-24 mod.12	4
For ShPS-24 mod.10, ShPS-24 mod.11, ShPS-24 mod.12: Jumper MJ-0-6 (2.54 × 6 mm)	2
Key	2
Packaging	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 12.1.004-91, GOST 12.2.007.0-75, GOST R 50571.3

2.2 The ShPS-24 shall be wired as shown in the connection diagram located on the ShPS-24's door.

2.3 Do shut off the mains power from the ShPS-24 before mounting, installing, and maintaining this one.

2.4 Operating restrictions, design, mounting, connecting, settings, testing and operation procedures for ShPS-24 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 ShPS-24.

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 ShPS-24 shall be maintained by persons qualified for Electrical Safety of Level III or higher.

3.2 ShPS-24 is to be maintained according to a planned preventive strategy which provides annual scheduled maintenance.

3.3 Maintenance works for the ShPS-24 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

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 MARKING AND SEALING

5.1 Every ShPS-24 has a marking applied to the inside of its enclosure.

5.2 The marking contains the manufacturer name, the product's name, its decimal number, factory number, the year and quarter of production, enclosure protection degree, market access certification mark, maximum output current value, rated value of a primary power supply voltage.

6 PACKING

6.1 A ShPS-24 along with accessory kit and operation documentation is packed in a cardboard box.

7 STORAGE

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

7.2 In a consumer package 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.

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

8 TRANSPORTING

ShPS-24 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.

9 DISPOSAL

9.1 The ShPS-24 is to be disposed of considering that there are no toxic components in it.

9.2 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.

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

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

10 MANUFACTURER WARRANTY

10.1 The manufacturer guaranties the ShPS-24 meets with technical requirements stated in the manuals if the user follows the instructions for transportation, storage, installation, and usage.

10.2 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.

11 CERTIFICATES

For certification information, please refer to ShPS-24 User's Manual.

12 ACCEPTANCE AND PACKAGING CERTIFICATE

The fire equipment mount box with battery backed power supply

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

