S2000-KDL Multiplex Polling Loop Controller

Installation Manual

This Installation Manual includes basic instructions of how to mount the S2000-KDL controller and get it ready for operation.

1 CAUTION

- *The Controller does not have any circuits containing hazardous voltages.*
- *The design of the Controller complies with the requirements of electrical and fire safety according to Russian Standards GOST 12.2.007.0-75 and GOST 12.1.004-91.*
- *The design of the Controller ensures its fire safety in case of malfunction and misuse according to GOST 12.1.004091.*
- ***Installation and maintenance can be provided only when the power is OFF.***
- *Installation and maintenance shall be carried out by personnel qualified for the Electrical Safety of Level II or higher.*

2 INSTALLATION

The Controller shall be installed on walls or inside boxes near to actuating devices in locations protected against atmosphere precipitation, mechanical damages and unauthorized access. Connection of communication lines shall be provided as shown in Figure 4.

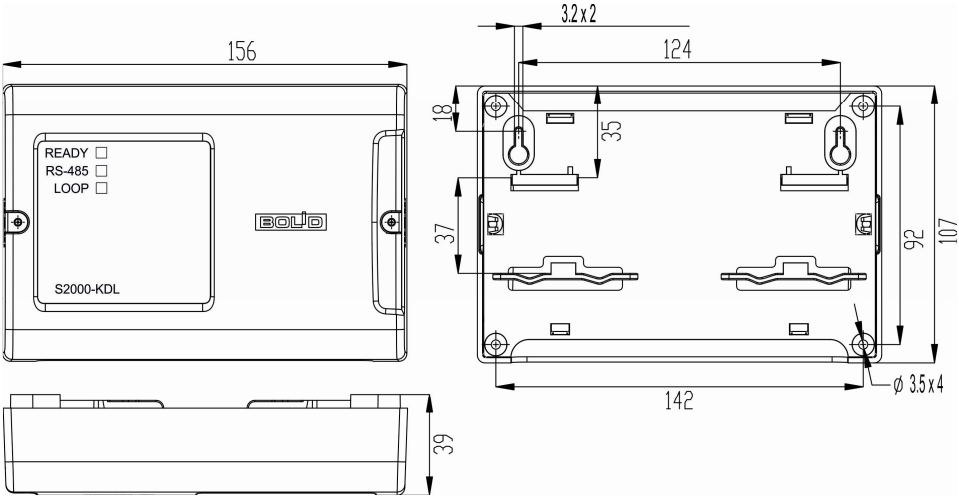


Figure 1. Overall and Mounting Dimensions

The Controller shall be mounted according to *RD 78.145-92 Installation and Commissioning Rules. Installation of Intrusion, Fire, and Intrusion and Fire Alarm Systems*. The Controller shall be installed at the height offering easy access for use and maintenance. If the Controller is installed in unprotected premises, it shall be installed at least 2.2 meters above the floor.

3 MOUNTING CONTROLLER

3.1 Wall Mounting

3.1.1 Make sure that the wall where you are going to install the Controller is durable, smooth, clean and dry.

3.1.2 Mount the Controller according to installation Type 1 or Type 2.

3.1.3 **Type 1**. Apply the drilling template to the wall (Figure 9). Drill three holes (A, B and one of the C or D holes).

3.1.4 Insert nail plugs in the holes and screw supplied screws in two upper holes leaving 7mm between screw heads and the wall.

3.1.5 Remove the Controller cover as shown in Figure 2.

3.1.6 Hang up the Controller on two screws. Screw in the lower hole the screw and fix the Controller to the wall.

3.1.7 **Type 2**. Apply the drilling template to the wall (Figure 9). Drill three holes (E, F, and C or D as you wish).

3.1.8 Insert nail plugs.

3.1.9 Remove the Controller cover as shown in Figure 2.

3.1.10 Fix the Controller to the wall using screws and installation holes.

3.2 Mounting on DIN Rail

3.2.1 Install the Controller onto a DIN rail as shown in Figure 3.

3.2.2 Remove the Controller cover as shown in Figure 2.

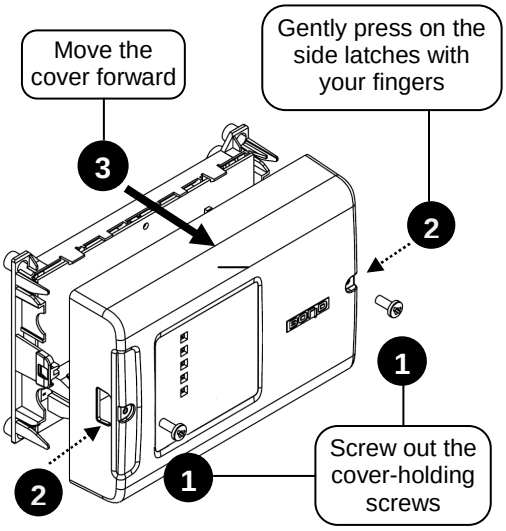


Figure 2. Removing the Controller Cover

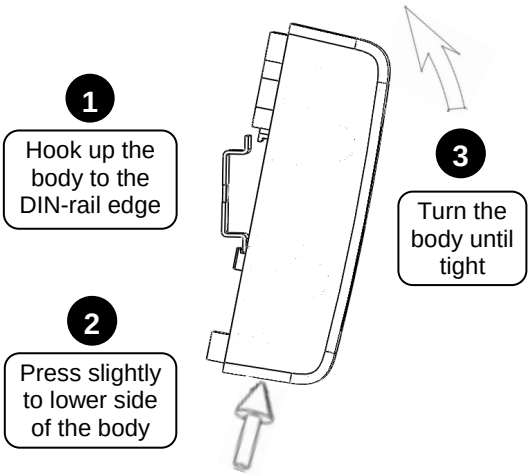


Figure 3. **Installation on DIN Rail**

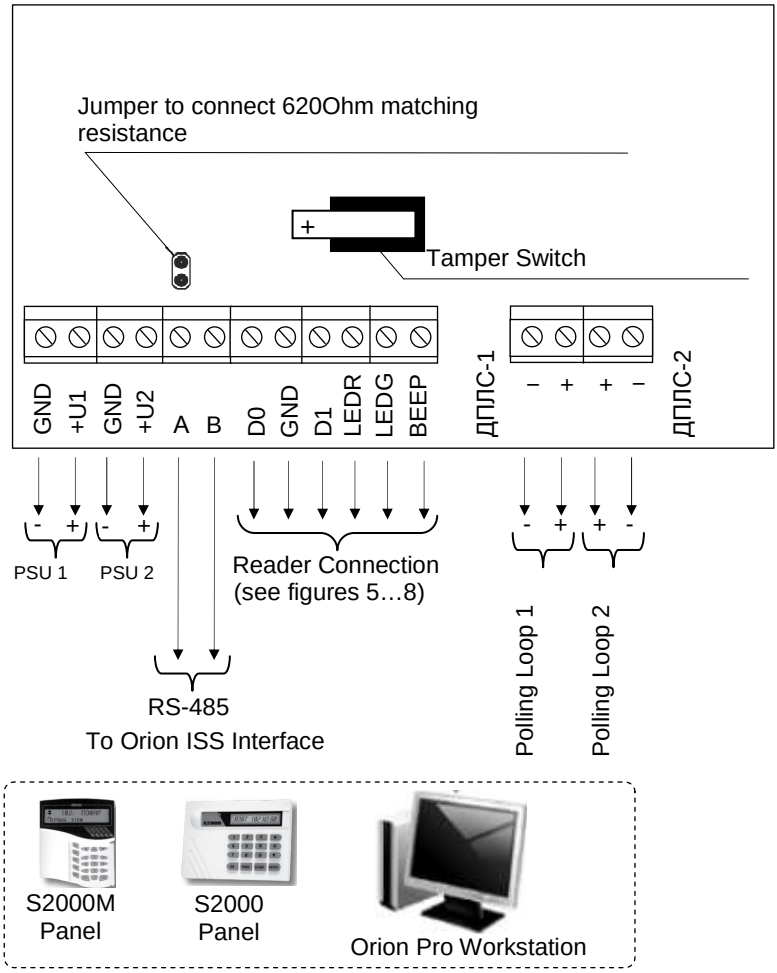
4 CONNECTING

4.1 Connecting RS-485 Lines

4.1.1 Connect A and B lines of the RS-485 interface to terminals A and B of terminal strip respectively. The wire shall not be more than 1.5 mm^2 in cross section.

4.1.2 If the Controller, panel and other Orion devices are powered from different power supplies, please integrate them into a single 0V circuit.

4.1.3 If the Controller is not the last device on the RS-485 line, remove the jumper from the PCB (Figure 4).



PSU1 and PSU2: Power Supplies 10.2V/DC to 28.4 V/DC

Figure 4. External Connection Diagram

4.2 Connecting Polling Loop

4.2.1 Connect cables to the Controller's "ДПЛС-1" and "ДПЛС-2" terminals. Please pay attentions to the polarity: the plus wire of the polling loop shall be connected to "+"; and the minus wire shall be connected to "-". The wrong polarity results in communication failure between the Controller and addressable devices.

4.2.2 A twisted pair cable is recommended to be used for the polling loop.

4.3 Connecting Power Supplies

4.3.1 Connect the primary power supply to "+U1" and "GND".

4.3.2 Connect the backup power supply (if necessary) to "+U2" and "GND".

4.3.3 Please pay attention to the polarity when connecting a power supply.

It is recommended using Bolid manufactured power supplies such as RIP-12 or RIP-24.

4.4 Connecting Reader

4.4.1 The Controller supports connection of one Touch Memory reader (iButton), Proximity card reader with output interface such as Touch Memory, Wiegand or ABA Track-II (S2000-Proxy, S2000-Proxy H, Proxy-2A mod.01, Proxy-2M, Proxy-2MA, Proxy-3A, Proxy-3M, Proxy-3MA), or keypad for entering PINs.

4.4.2 The connectivity terminals are described in Table 1. If a reader has only one single-color LED, it has to be connected to LEDG regardless to its light color.

4.4.3 If a reader's power supply ranges from 10.2V to 28.4V but the distance between it and the Controller is 50 meters or less, the power may be provided from the Controller's terminals where power supply is connected: "+U1" or "+U2".

4.4.4 The connection of iButton-interface readers are shown in Figure 5 and Figure 6.

4.4.5 The connection of Wiegand-interface readers are shown in Figure 7.

4.4.6 Readers with ABA Track-II interface are connected the same way as Wiegand taking into account that the DATA and CLOCK reader outputs are connected the D0 and D1 inputs of the Controller respectively.

4.4.7 Close the Controller cover until clicks specifically and fix this one by retaining screws if necessary.

Table 1 Description of Reader Connection Terminals

Terminal		Description
D0	TM Mode	Input/Output for reader data circuit
	Wiegand Mode	Input for the reader D0 date circuit
	ABA Track-II Mode	Input for the DATA circuit of a reader
GND		Output for power supply for a reader (minus wire)
D1	TM Mode	Not used
	Wiegand Mode	Input for the reader D1 data circuit
	ABA Track-II Mode	Input for the reader Clock circuit
LEDR		Reader red LED control output
LEDG		Reader green LED control output
BEEP		Reader buzzer control output

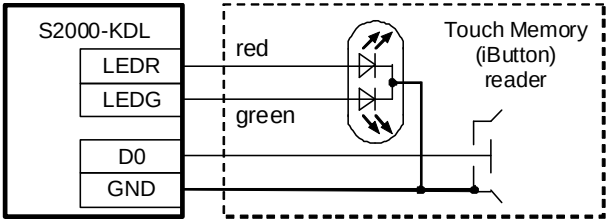
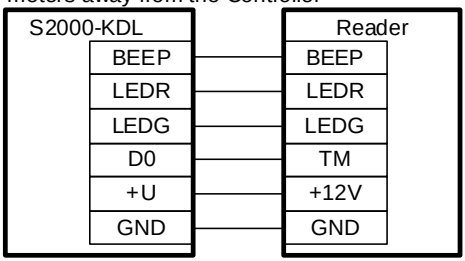


Figure 5. Connection of iButton Reader

Type 1

For readers with power consumption no more than 100 mA and located no more than 50 meters away from the Controller



Type 2

For readers with higher power consumption or located more than 50 meters away from the Controller

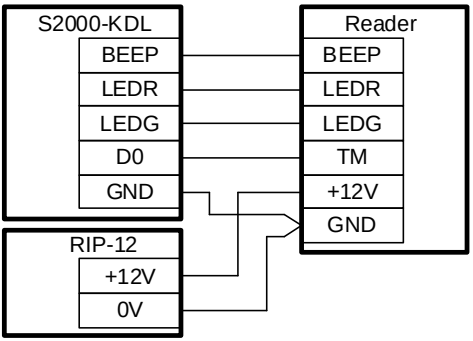
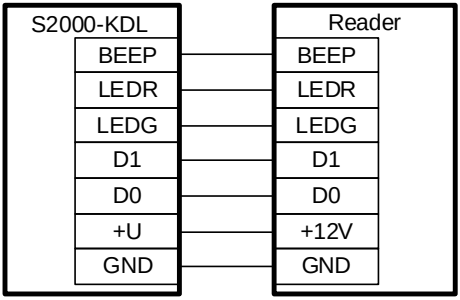


Figure 6. Connection of Touch Memory Card Readers

Type 1

For readers with power consumption no more than 100 mA and located no more than 50 meters away from the Controller



Type 2

For readers with higher power consumption or located more than 50 meters away from the Controller

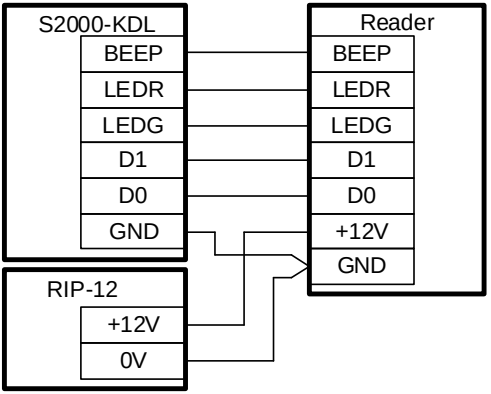


Figure 7. Connection of Wiegand or ABA Track-II Interface Card Reader

5 CHECKING CONTROLLER

5.1 The Controller shall be checked by the maintenance personnel qualified for the Electrical Safety of Class II or higher.

5.2 The check procedures shall be carried out in normal conditions according to GOST 15150-69:

- Air humidity: (45 – 80) %;
- Air temperature: (25 ± 10) °C;
- Air pressure: (630 – 800) mmHg, (84 – 106.7) kPa.

5.3 Any work to connect or disconnect external circuits shall not be carried out until the Controller is powered off.

5.4 Checking Main Parameters

5.4.1 To check the Controller, please use the S2000M panel.

5.4.2 Connect RS-485 circuits and power supply.

5.4.3 Power on the S2000M panel and the Controller.

5.4.4 The Ready LED starts illuminating green after 15 seconds.

5.4.5 During one minute of powering on, the panel will show message on finding a device with a network address corresponding to the current Controller address (127 is default). Figure 8 shows the S2000M panel display with a relevant message.

Figure 8

5.4.6 If the several messages are received from the controller buffer, they can be viewed using the ▲ ▼ keys on the S2000M panel.

5.5 Diagnostics

5.5.1 Turn on the Diagnostics mode by three short pressings and one long pressing applied to the Tamper Switch. The short pressing is a pressing applied to the tamper button during 0.1 to 0.5 seconds. The long pressing is a pressing applied to the tamper button during 1.5 seconds at least. Pauses between pressings shall be from 0.2 to 1 second.

5.5.2 If the Controller is in a good working condition, the READY, RS-485, LOOP LEDs start flashing alternatively with single short flashes and long pauses where green flash is followed by yellow flash.

6 GETTING READY

To get the Controller ready for operation in the Orion ISS run by S2000/S2000M or Orion Pro Suite you will have to define a network address and other settings for the Controller (see User's Manual).

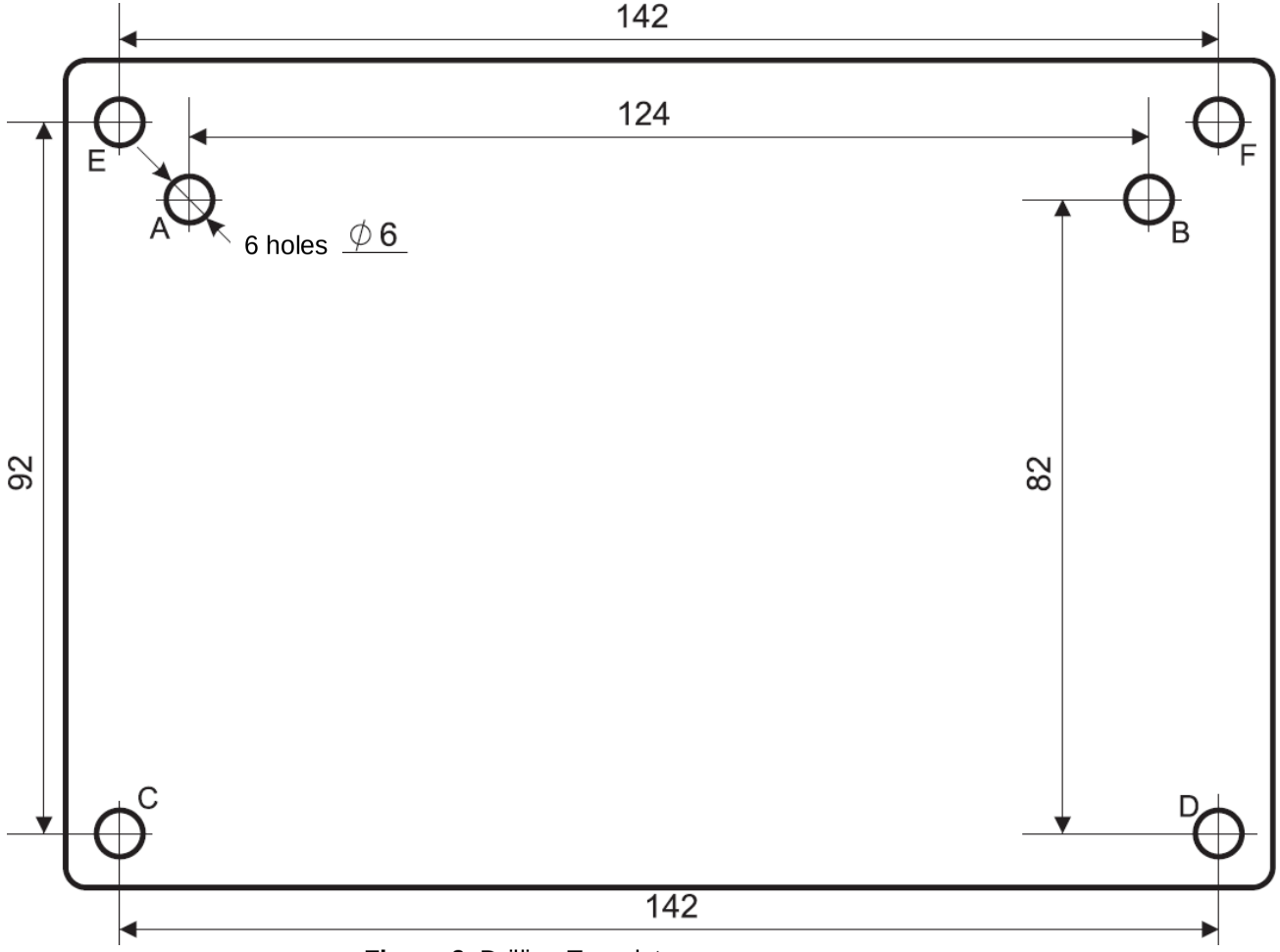


Figure 9. Drilling Template