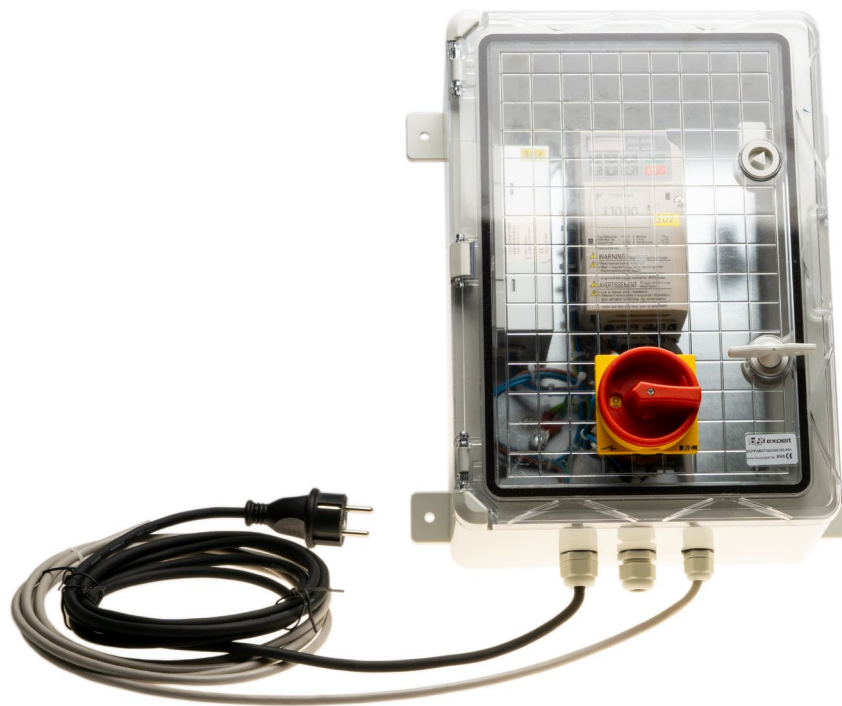


SOROTEC

Installation instructions control cabinet



Introduction

Thank you for the trust you have shown in us by purchasing the switch cabinet parts set. We recommend reading these instructions through completely before starting the installation and then proceeding step by step as described.

Usage

The control cabinet described here is supplied by Sorotec to set up a power supply with the Yaskawa J 1000 frequency converter for operating a milling spindle. Although suitable for a variety of other electrical equipment, the assembly instructions deal with this purpose only.

Required tools

Ordinary hand tools such as screwdrivers of various shapes and sizes, wire cutters, etc. should be available. The following tools are also required:

- Drill and drill, for large diameters we recommend step drills
- Wire stripper
- Crimping pliers for wire end ferrules
- Crimping pliers for cable lugs



Attention!

Only carry out the work if you are familiar with the necessary actions and suitable tools are available.

Sorotec GmbH assumes no liability for property damage or personal injury that occurs during assembly or operation of the switch cabinet!






Danger!






It is expressly pointed out that the electrical connection is the responsibility of the electrician! In particular, the correct connection of the protective conductor as well as the subsequent protective conductor test must be carried out by electrotechnically qualified personnel in accordance with the relevant national regulations!



Bild 1: Der Bausatz

Scope of delivery

	Control cabinet with mounting plate, wall brackets and screws	1
	Main switch 3-pole 25 A	1
	Shield connection terminal Ø 3 ... 8 mm	2
	Cable gland M16 4 M20 5	1 2
	Rubber connection cable 3 x 1,5 mm ² , 1 m	1
	Flat head screw with hexagon socket M4 x 10 ISO 7380	4
	Cylinder head screw with hexagon socket M6 x 20 low head, DIN 6912	1
	Hexagon nut DIN 934 M4 9 M6 10	6 2
	Washer Ø M4 Ø M6	4 1
	Tooth lock washer Ø M4 13 Ø M6 14	2 4

	Ring cable lug 0,5 ... 1 mm ² M5 15 0,5 ... 1 mm ² M6 16	1 1 4
	End sleeve 1,5 mm ² 17 0,5 mm ² 18	15 8
	PVC single core 1.5 mm ² green/yel., 1,5 m 19	1
	PVC single core 1.5 mm ² light blue, 1,5 m 20	1
	PVC single core 1.5 mm ² black, 1,5 m 21	1

Note

The electrical components that are mentioned in the course of these instructions (line filter, frequency converter and optional 24 V power supply unit) are not part of the kit. These parts belong to the respective spindle set or may have to be ordered separately.

Preparation of the control cabinet

For this construction phase you will need:		#
1	Control cabinet with mounting plate	1
1	Main switch	2
2	Shield connection terminal	3
1	Cable gland M16	4
2	Cable gland M20	5
1	Cylinderhead screw	8
2	Tooth lock washer M4	13
4	Tooth lock washer M6	14
1	Washer M6	12
2	Nut M4	9
2	Nut M6	10

Prepare the control cabinet **1** for the installation and the wiring of the modules as follows:

Drilling

- Provide the mounting plate with the holes as described in Figure 2.

i Note

We recommend drilling the holes for the DIN rail mounting of the 24 V power supply unit even if no power supply unit is planned so that the system does not have to be dismantled when retrofitting.

- Drill the holes for the cable glands in the bottom of the control cabinet. See Figure 3.
- Drill the holes for the main switch in the door of the switch cabinet. See Figure 4.

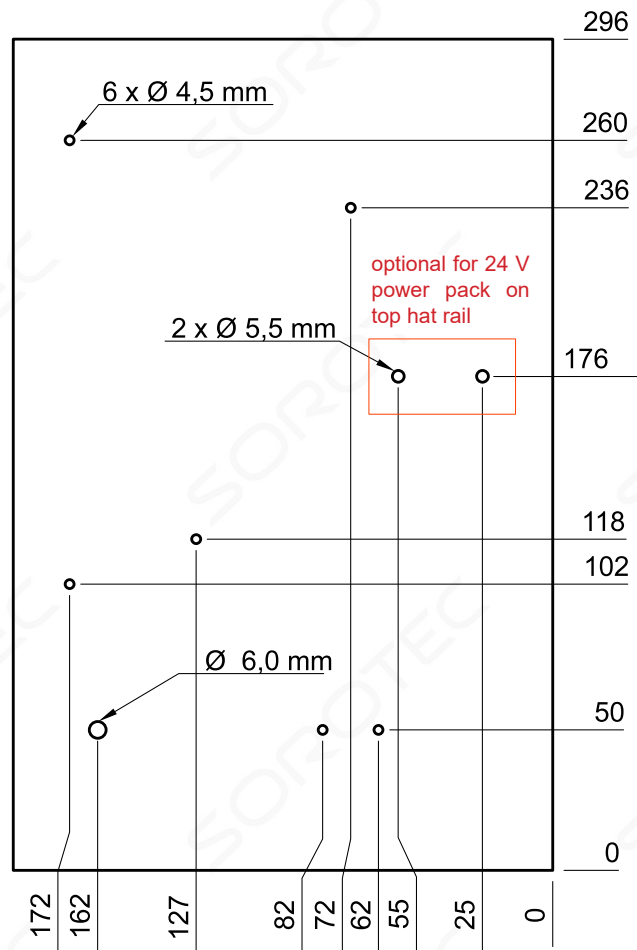


Fig. 2: Holes in the mounting plate

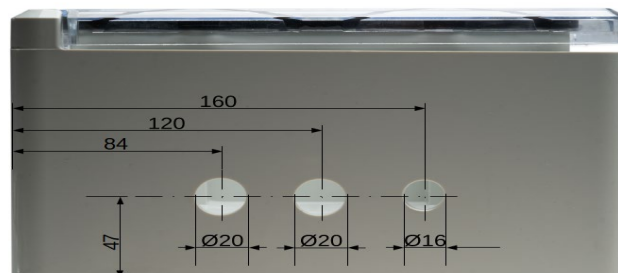


Fig. 3: Holes for the cable glands

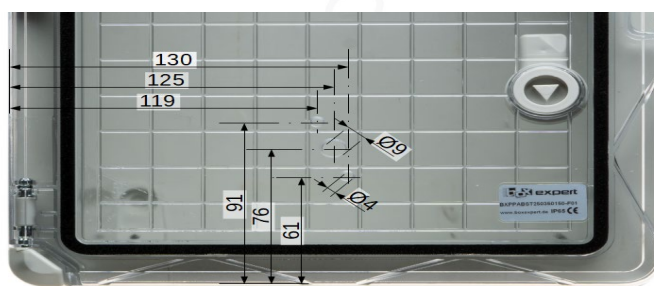


Fig. 4: Holes for the main switch

Cable glands

- Mount the cable glands **4** and **5** in the holes prepared for them. See Figure 5.

Shield connection terminals

- Mount the two shield connection clamps **3** in the prepared holes. Use tooth lock washers **13**, to ensure a firm hold and good electrical contact with the mounting plate (see Figure 6).

Earthing screw

- Mount the earthing screw **8** with a nut **10** and two tooth lock washers **14** in the hole at the bottom left of the mounting plate. Place the tooth lock washers under the screw head as well as under the nut to ensure a firm hold and good electrical contact with the mounting plate (see Figure 7).

- Thread the two remaining tooth lock washers onto the grounding screw and loosely screw on the second nut.

Main switch

- Mount the main switch **2** with the enclosed screws in the prepared holes in the door. See Figure 8 and 9.



Figure 5: Assembled cable glands



Figure 6 and 7: Shield connection clamps mounted with tooth lock washers, Toothed washer under the head of the earthing screw



Figure 8: Cover outside, switch inside - assembly of the ...



Figure 9: ... main switch on the control cabinet door

Mains connection

For this construction phase you will need:		#
1	Rubber connection cable	6
	Core line light blue	21
	Core line black	22
6	Ferrule	18
1	Ring cable lug M6	17
	Cable ties	

- Strip about 35 cm from the end of the rubber connection cable **6**.
- Strip the ends of the brown and blue cables and attach wire end ferrules **18**.

- Guide the connection cable through the left cable gland.
- Shorten the yellow-green PE line to about 15 cm. Strip off the end and crimp the ring cable lug **17**.
- Cut 45 cm of each of the blue and black wires. Strip the ends and attach wire end ferrules.
- Wire the main switch and gather the lines with cable ties as shown in Figure 10.



Figure 10: Pre-wired mains connection

Assembly of the components

For this construction phase you will need:		#
1	Line filter	
1	Frequency converter	
	optional extension kit for 24 V power supply	
4	Flat headed screw	7
4	Washer	11
4	nut	9

i Note

Line filter, frequency converter and optional 24 V power supply unit with top hat rail and screws are not part of the kit. These parts belong to the respective spindle set or may have to be ordered separately.

- Assemble the line filter with two flat head screws **7**, washers **11** and nuts **9**.
- Mount the frequency converter with two flat head screws **7**, washers **11** and nuts **9**.

See Figure 11.

Option 24 V-Netzteil

For spindles with an electric fan, there is an additional 24 V power supply required. The corresponding power supply unit and the parts required for fastening are available as an additional set. To assemble, proceed as follows:

- Cut the top hat rail to 6 cm.
- Mount the top-hat rail with the screws, washers and nuts provided in the holes prepared for it.
- Clip the power supply unit onto the top-hat rail.

See Figure 12.



Figure 11: Line filter and frequency converter, mounted and partially wired



Figure 12: Optional 24 V power supply unit on top hat rail

Verdrahtung

For this construction phase you will need:		#
	Core line light blue	21
	Core line black	22
6	Ferrule	18
3	Ring cable lug M6	17
	Cable ties	

- For wiring, follow the circuit diagram that you received with your spindle set.
- Remove the outer sheath about 10 cm from the end of the control cable over a length of 2 cm so that the bare shielding braid is exposed.
- Before connecting it to the frequency converter, feed the control cable through the screwed cable gland and insert the point with the bare shield into the shield connection terminal.

- Provide all grounding lines with ring cable lugs and place the lines between the toothed lock washers of the grounding screw connection.
- Finally, arrange the lines with cable ties.

See Figure 13.

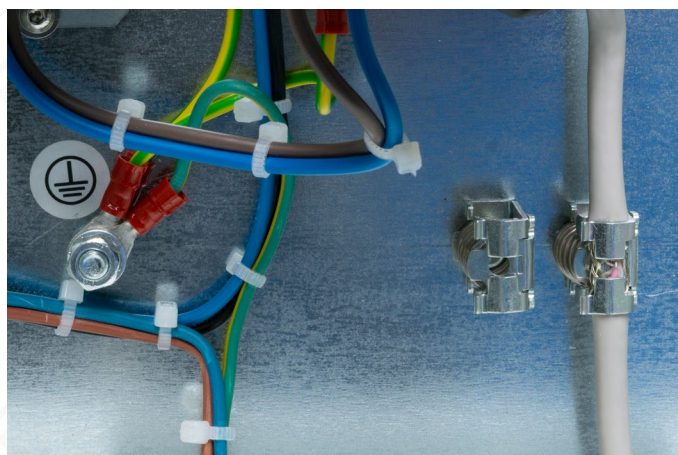


Figure 13: Earthing at screw and shield clamp



Figure 14: The fully wired control cabinet

Final assembly

For this construction phase you will need:		#
Wall brackets and control cabinet screws		1

Mounting plate

- Mount the mounting plate with the fully wired power supply with the four plastic screws 5 x 16 on the rear wall of the control cabinet.

Wall brackets

Mount the four wall brackets with the screws belonging to the control cabinet. See Figure 15.



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Figure 15: Wall mounting brackets