

MC 11 AC

Power supply cabinet

USER MANUAL

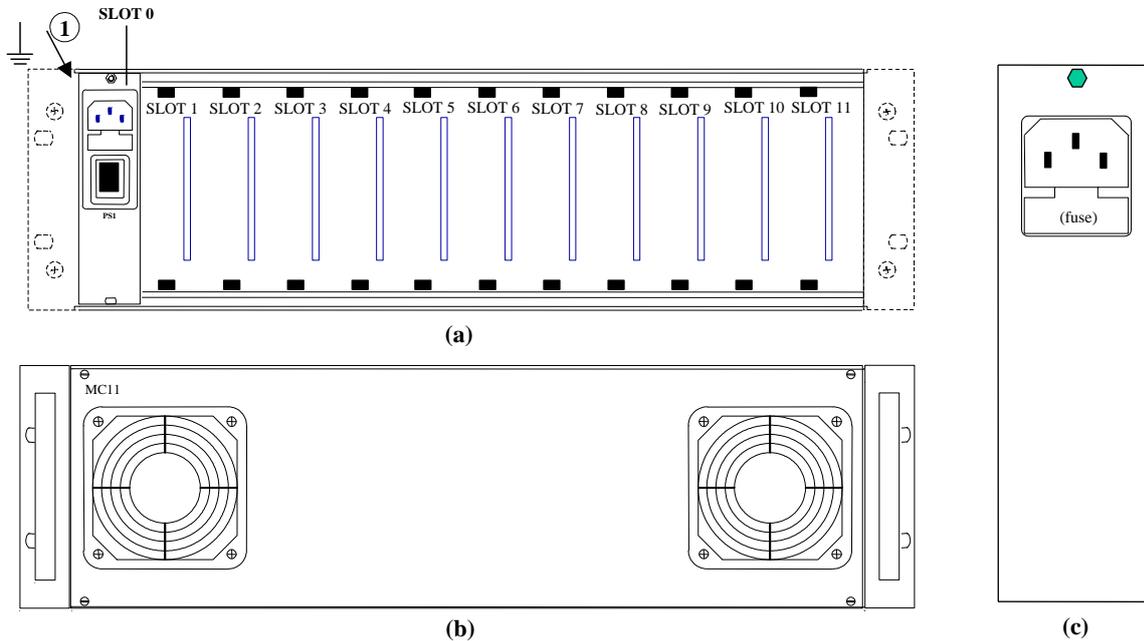


Figure 1a, b, c. Module mounting (a) and fan sides (b), and slot 0 panel (c) of the MC 11 AC power supply cabinet

1. General description

The MC 11 AC 19" power supply cabinet houses up to eleven TKH Security (7TE) plug-in modules, supplying these with the correct DC voltages (see figure 1a). The leftmost, twelfth slot (Slot 0, see figure 1a,c) holds a module with the mains connector, filter, fuse and switch.

Two fans on the long side opposite the modules (see figure 1b) provide system cooling. The mounting brackets are reversible.

2. Indications and connectors

The connectors and indications shown in figure 1a and 1c are listed in table 1.

PS1	Mains power switch
(AC connector, male)	Mains socket
	Strain relief stud (M4)
	External earthing point
SLOT 0	Module slot for mains socket
SLOT 1 .. SLOT 11	Module compartments

Table 1. MC 11 AC cabinet: module side features

3. Installation and maintenance

3.1. General

1. Mount the unit horizontally without the modules. Check whether the mains voltage is correct.
2. Keep sufficient free space around the rack to allow

circulation of cooling air.

3. The chassis should be connected to safety ground using the connection on the side wall of the cabinet (1 in figure 1a).
4. Fasten the line cord to the strain relief stud (see the hexagon in figure 1c, top)
5. Connect the line cord to the mains and switch on the cabinet. The electric fans should be working; if not, switch off and check the power voltage.
6. Switch off the MC 11 AC cabinet and install TKH Security modules according to the instructions given in the user manuals of the modules. Unused slots should be covered with 7TE blanking plates.
7. Switch on the cabinet. Both fans should be working, blowing outwards.
8. Avoid moisture and accumulation of dust.

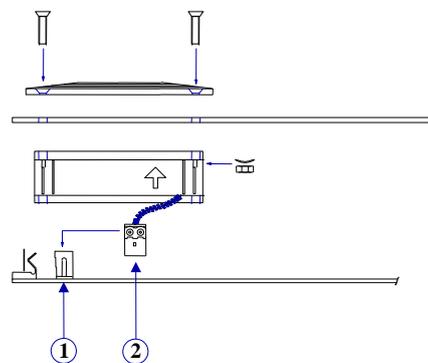


Figure 2. Replacing a fan. The fixed part (1) of the fan's 2-part power connector is located on the backplane.

3.2. Replacing the electric fans

The two electric fans must be changed every five years (replacements may be obtained from TKH Security). The procedure for mounting new fans is as follows (see figure 2):

1. Switch off the MC 11 AC cabinet and disconnect it from the power supply.
2. Remove the cover.
3. Disconnect the fans' power supply leads.
4. Remove each electric fan and replace it with a new one. Make certain that the blowing direction is outward. Use the washers and nuts as indicated for one of the fastening screws.
5. Reconnect the power leads for the fans.
6. Replace the cover.
7. Reconnect the power cabinet to the mains and switch on. Check whether the fans are blowing outwards.

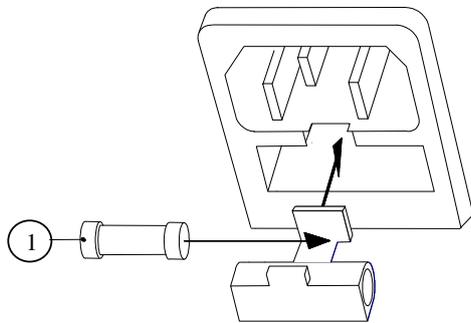


Figure 3. Replacing the primary fuse (1)

3.3. Replacing the primary fuse

1. Switch off the MC 11 AC cabinet and disconnect it from its power supply.
2. The primary fuse (1) is located under the mains socket (see figures 1c and 3). Table 2 lists fuse data.

4. Technical specifications

Electrical

...Power:

AC voltage nominal	220-240	Vac
AC voltage working	195-264	Vac
optional AC voltage nominal	120	Vac
optional AC voltage working	102-132	Vac
frequency	40 ... 100	Hz
maximum drop-out time	10	ms
Secondary maximum load, continuous		
+15 V±5% max. current.	7.0	A
-15 V±5% max. current	2.0	A
+15 V±5% operational	5.5	A
-15 V±5% operational	2.0	A
AC input current	1.0	A
AC input current 120 V model	2.0	A
Power efficiency (η, full load)	~83	%
Max. output power (see fig. 4)	105	W
Max. output power up to 74°C	83	W
Primary fuses		
fuse type	5 x 20 (glass)	mm
230 Vac model	250 V/1.6 A, time-lag	
120 Vac model	250 V/3.15 A, time-lag	

Environmental & safety

Temperature range		
Full load (11 slots x 9W)	-40 ... +65	°C
Operational (max 83W)	-40 ... +74	°C
Relative humidity (no cond.)	≤ 95	%
MTBF	>100,000	hrs
Electrical safety	IEC 60950-1	
UL Listed I.T.E.	E 242498	
Surge protection AC mains	2 kV (IEC 61000-4-5)	
EMC emission	IEC 61000-6-3	
	EN 55022 Class B	
	FCC pt. 15 Class B	
EMC immunity	IEC 61000-6-2, EN 50130-4	
ESD	6 kV contact, 8 kV air	(IEC 61000-4-2)

Mechanical

Housing	3 HE, 19" (84TE), 24 cm
AC connector type	IEC 60320, male
Weight (approx.)	4.5 kg
Max. number of modules	11

Table 2. MC 11 AC technical specifications

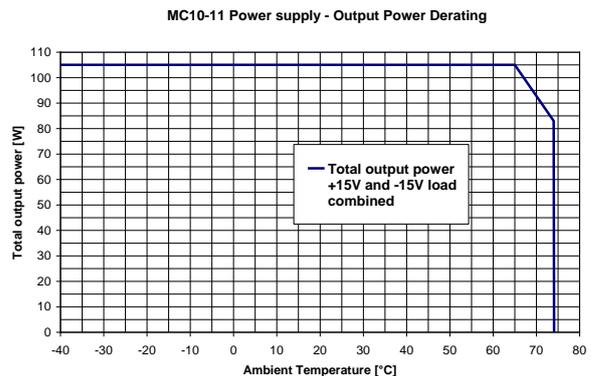


Figure 4. Power loading of the power supply cabinet
 11 slots loaded with 9W modules: Max. ambient 65°C
 11 slots loaded with 6W modules: Max. ambient 74°C

5. Safety and EMC Information

The equipment described in this manual has been designed and tested according to the IEC 60950-1 safety requirements. It is an IEC safety class 1 product; the ground wire in the line cord must be connected when operating.

Warning: Operation of this equipment in a residential environment could cause radio interference.

This device has been tested and found to meet the CE regulations relating to EMC and complies with the limits for a Class A device, pursuant to Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. These limits are designed to provide reasonable protection against interference to radio communications in any installation. The equipment generates, uses, and can radiate radio frequency energy; improper use or special circumstances may cause interference to other equipment or a performance decrease due to interference radiated by other equipment. In such cases, the user will have to take appropriate measures to reduce such interactions between this and other equipment.

Note that the warning above does not apply to TKH Security products which comply with the limits for a Class B device. For product-specific details, refer to the EU Declaration of Conformity.

Any interruption of the shielding inside or outside the equipment could make the equipment more prone to fail EMC requirements.

To ensure EMC compliance of the equipment, use shielded cables for all signal cables including Ethernet, such as CAT5E SF/UTP or better, as defined in ISO IEC 11801. For power cables, unshielded three wire cable (2p + PE) is acceptable. Ensure that all electrically connected components are carefully earthed and protected against surges (high voltage transients caused by switching or lightning).

The equipment described in this manual is designed for use by properly trained personnel. This means that adjustment, maintenance and repair of the equipment should only be carried out by qualified personnel aware of the hazards involved. For correct and safe use of the equipment and in order to keep the equipment in a safe condition, both operating and servicing personnel **must** follow standard safety procedures in addition to the safety precautions and warnings specified in this manual.

If there is any doubt regarding the safety of the equipment, do not put it into operation.

This might be the case when the equipment shows physical damage or is stressed beyond its tolerable limits (e.g. during storage and transportation).

Before opening the equipment, disconnect it from all power sources. After disconnection from its power sources, the capacitors in the equipment may remain charged for some seconds.

When removing covers or other parts of the equipment, live parts or terminals may be exposed. If the opened, live equipment needs calibration, maintenance or repair, only trained personnel, who are aware of the risks, may perform this.

Any interruption of the ground wire inside or outside the equipment, or disconnection of the protective earth terminal, could make the equipment dangerous.

Before any connections are made, the equipment must be connected to safety ground.

Electrostatic discharge (ESD) can damage or destroy electronic components. Proper precautions should be taken against ESD when opening the equipment.

Accessories:

- Power cord
- Earthing and mounting kit

6. Product disposal



Recycling

This product contains valuable materials which qualify for recycling. In the interest of protecting the natural environment, properly recycling the product at the end of its service life is imperative.

7. EU Declaration of Conformity

The EU Declaration of Conformity for this product is available at <http://www.tkhsecurity.com/support-files>.