POWER SUPPLY UNIT PSK-FB SERIES

For

MASS FLOW METER / MASS FLOW CONTROLLER

INSTRUCTION MANUAL

KOFLOC Corp.

We would ask you to surely read this instruction manual fully before installation and application of the product so as to maintain the performance and safety thereof. This enables preventing accidents and breakages of the product due to an erroneous application method. If the product has a malfunction or its readjust is required, please notify our agent near to you of your requirements. As the skilled service men properly correspond to them, please be sure to follow their instructions.

If you -customer make a repair or remodeling by yourself, a critical accident may occur and together it turns difficult to secure the normal warranty. So pay particular attention to it.

Please utilize this manual for your daily maintenance inspections.

PICTURE CAUTIOUS INDICATIONS FOR《PREAPPLICATION》OR《SAFE APPLICATION》

The following are picture indications for cautions to be noted-observed before application or for safe application of the product. They have been illustrated in the instruction manual and on the specific portions of the product so as to ensure correct application of the product and prevent injuries to you or other workers, or damages to the properties.

DANGER	Ignoring this sign and handling the product incorrectly will immediately result in death or serious injury.
WARNING	Ignoring this sign and handling the product incorrectly may result in death or serious injury.
CAUTION	Ignoring this sign and handling the product incorrectly may result in personal injury or damage to property.

Table of Contents

1. Introduction

1-1. Introduction

The PSK-FB series power supply unit was developed for incorporation of the customer`s device or machine. It is designed in compactness for making easier the power supply to the mass flow meters / mass flow controllers manufactured by KOFLOC Corp. and for easier providing of INPUT/OUTPUT signals to external appliances.

This power unit has a function to output +5V DC for power source of the flow indicator in addition to those to output FLOW signals and to input FLOW SETTING signals to the external appliances via the connection connector.

1-2. Specifications

l) Power specifications

Type		PSK-1FB	PSK- 3FB	PSK-6FB
Application		For 1 unit of MFM / MFC	For 3 units of MFM / MFC	For 6 units of MFM / MFC
Input voltage (Frequency)		85-l32V AC(47-66Hz)		
Consumed power		Max.15W	Max.60W	Max.110 W
Applied fuse		125V-lA	125V-3A	125V-6A
Output	+15VDC	±5%, Max. 350mA	±3%, Max. 1.2mA	±3%, Max. 2.4mA
	-15VDC	±5%, Max. 400mA	±3%, Max. 1.2mA	±3%, Max. 2.4mA
	+5VDCfor flow setting	±1%, Max. 10mA	±1%, Max. 10mA	±1%, Max. 20mA
	+5V DC for external indicator	±5%, Max. 150mA	±3%, Max. 450mA	±5%, Max. 900mA
Flow input / output Signal		0~+5VDC Max.15VDC		
Flow setting output Signal		0~+5VDC		
Working environ me		0℃~40℃,0~90%Rh. However, no dews shall occur		
Weight		0.7kg	1.2kg	1.6kg

2) Connector pin assignment

(a) PSK-FB series -- MFM/MFC(D-sub 9pin female)

PIN NO.	SPECIFICATIONS
1	Valve open/close input signal
2	MF flow signal 0-5VDC Max ± 15VDC
3	Power +15VDC
4	Power COM
5	Power -15VDC
6	MFC flaw setting signal
7	MF flow signal COM
8	MFC flow setting signal COM
9	Valve monitor (Option)
Shell	Frame gland

(b) PSK-FB series --External appliances(D-sub 15 pin female)

PIN NO.	SPECIFICATIONS	PIN NO.	SPECIFICATIONS
1	MF output signal 0~5VDC	9	MFC valve open/close input signal
2	MF output signal COM	10	+15VDC
3	Power output +5VDC	11	-15VDC
4	Power output COM	12	N.C
5	N.C	13	Valve monitor (Option)
6	Reference voltage output +5V DC	14	N.C
7	MFC flow setting signal input	15	Frame gland
8	MFC flow setting signal COM	Shell	Frame gland

CAUTIONS:

・APPLICATION OF THIS APPLIANCE AT THE STATUS EXCEEDING THE SPECIFICATIONS CAUSES A MALFUNCTION THEREOF. IF NOT AVOIDED, A CRITIAL FAULT OR ACCIDENT OF THE MOUNTED DEVICE OR MACHINE MAY OCCUR.

2. Installation

2-1.In the case of receiving the product;

When receiving this product, fully observe the appearance and check to ensure that no damages or breakages exist. If the packing is found to be abnormal, please instruct the transporter to check for the status and contact us or our agent.

2-2.Installation

The installation posture has not been especially restricted. However, install the appliance in a place where no powder dusts and water exist so as not to cause insulation fault problems. If a temperature rise of the installation place is expected to be caused by the ambient appliances is expected, pay particular attention to the installation environments through installation of a cooling fan for improvement of the Ventilation. Avoid the installation in a place where vibrations always occur, since it may cause a contact fault accident of the cable connection unit.

CAUTIONS:

- **Never install the meter in a damp or humid place. Hazard of electric shock.**
- **Do not install the meter in a place where the ambient temperature may rise excessively. Such a place will cause the temperature of the internal circuit to rise and damage it.**
- **The installation of the meter in a place that is subjected to vibration constantly may cause a contact failure of cable connections.**

2-3. Mounting

Securely mount this power unit on the mounting plate with reference to the outside drawing in Fig. l. Form mounting, apply M3 small screws and consider the thickness of the mounting plate to have a distance within 3mm to the main machine.

3. Wiring connection

3-1.Wiring connection with the mass flow controller (MFC) / mass flow meter (MFM)

Connect the MFC or MFM to the 9P connector of this power unit with private purpose cables corresponding thereto. When connecting the connector push-in it so that it mates with the concavo-convex of the socket and pin units of the connector, and then tighten the fixing thread on the cable side so as to prevent falling. See the attached connector shape diagram and the standard schematics of model 3440 and 3660 mass flow controllers in the attached Fig.1-4.

3-2 Wiring connection with the external appliances

Connect the external appliances to the 15P connector of this power unit with cables applicable thereto. When connecting the connector, push-in it so that it mates with the concavo-convex of the socket and pin units of the connector, and then tighten the fixing thread on the cable side so as to prevent falling. See the connector shape diagram and the standard schematics of model 3440 and 3660.mass how controllers in the attached Fig.1-4.

WARNING:

· APPLY PRIVATE-PURPOSE CABLES, OTHERWISF, A BREAK MAY OCCUR.

CONNECTION WITH IMPROPER CABLES MAY DAMAGE POWER UNIT, AND MFC / MFM.

PIN ARRANGEMENT OF D-SUB 9P CONNECTOR OF OUR PRODUCT MODEL 3400 AND 3660 SERIES (MFC) IS IN CON- FORMITY WITH THE SEMI-STANDAF.DS. PIN ARRANGEMENT OF D-SUB 9P CONNECTOR OF MODEL 3750 SERTES (MFM) IS NOT IN CONFORMITY WITH THE SEMI-STANDARDS.

ENSURE THAT CONNECTION CABLES OF MFC/MFM AND POWER UNIT ARE PRIVATE-PURPOSE CABLES, THEN MAKE CONNECTION WITH THEM.

FOR CONNECTION WITH EXTERNAL APPLIANCE CORRESP-ONDING TO MFC OR MFM VIA POWER UNIT, BESURE TO MAKE IT TO D-SUB 15P CONNECTOR CORRESPONDING TO D-SUB 9P CON-NECTOR CONNECTED TO MFC / MFM.

4. Malfunction

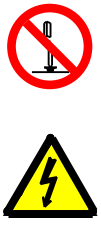
4-1. In the case of a malfunction

If this power unit seems to have caused a malfunction, be sure to check for output voltage on the safe portion such as the chip terminal of the connected appliance, not with the connector pin of this appliance, so as to prevent short-circuit accidents.

If a malfunction occurs, contact us or our agent.

DANGER:

· NEVER PERFORM DISASSEMBLING. INTERNAL TOUCHING MAY CAUSE AN ELECTRIC SHOCK, THUS RESULTING IN A CRITICAL DANGER.

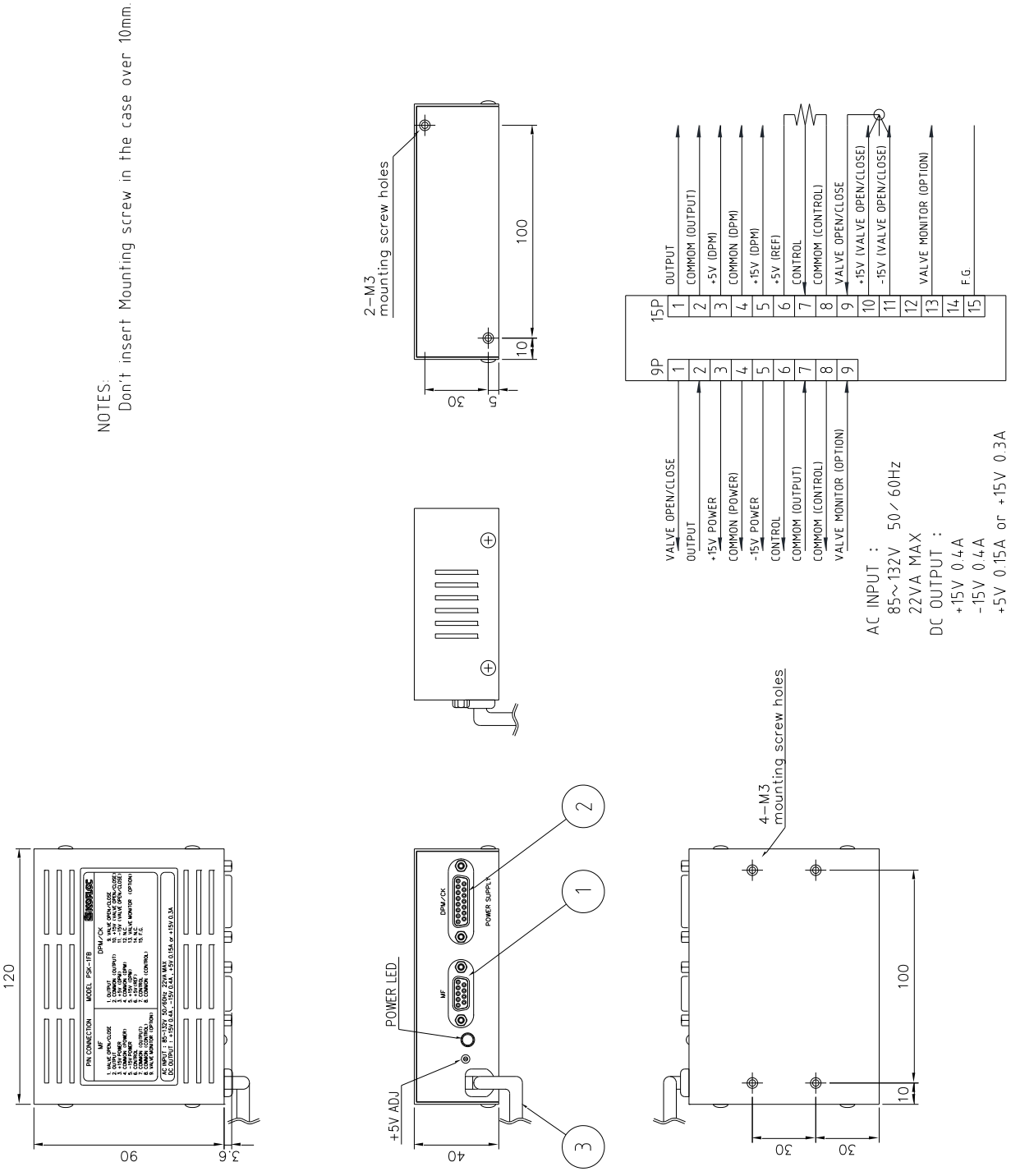


4.2 Warranty

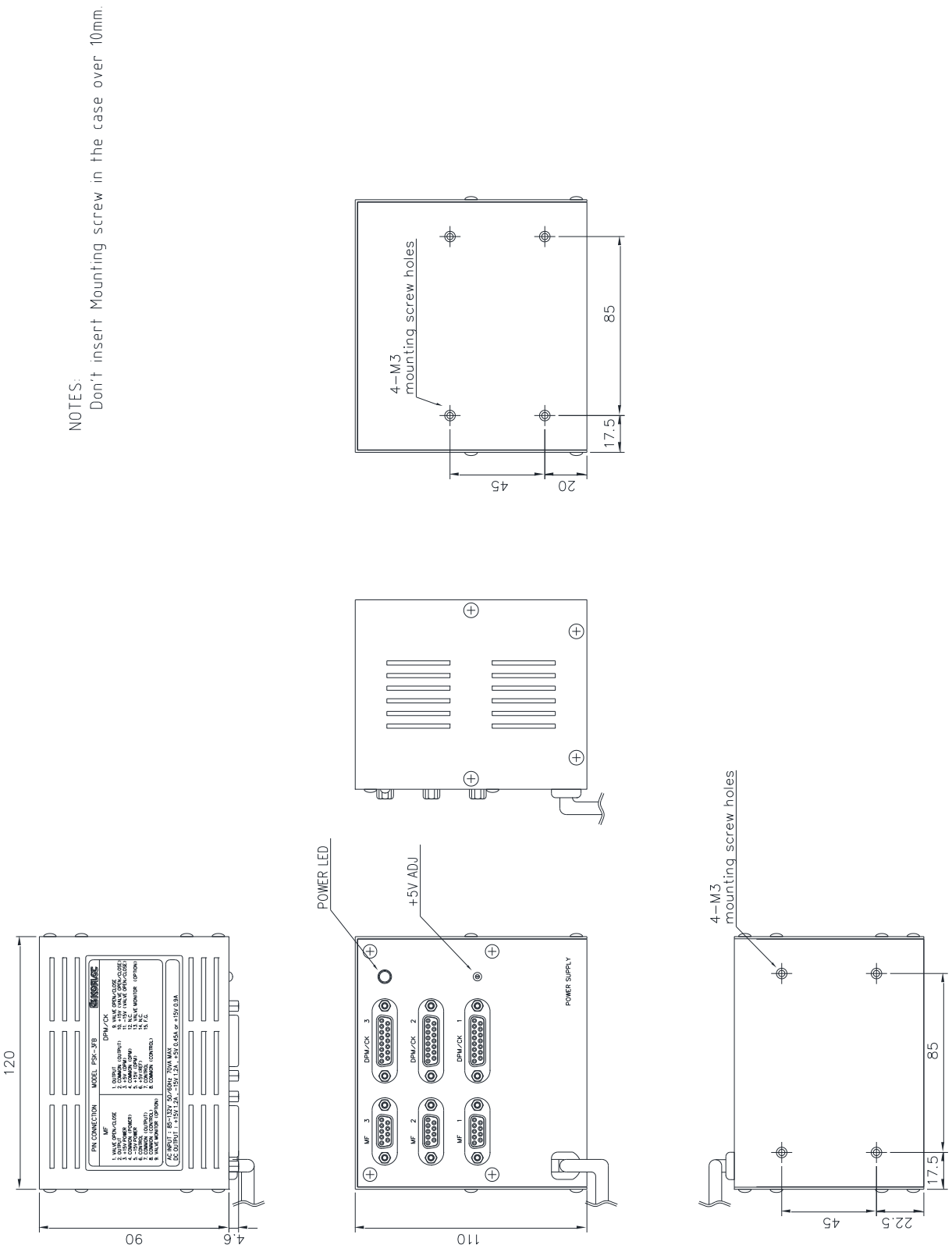
If a malfunction of the product occurs obviously due to our fault in design, manufacturing or packing within one (1) year after delivery out of the factory, this product can be replaced or repaired without any charges only in the limited range. However, if the malfunction occurs due to customer`s in adequate handling, the replacement or repairing will be charged to the customer.

As to the product that has already passed one (1) year since delivery out of the factory, it will be repaired onerously by us.

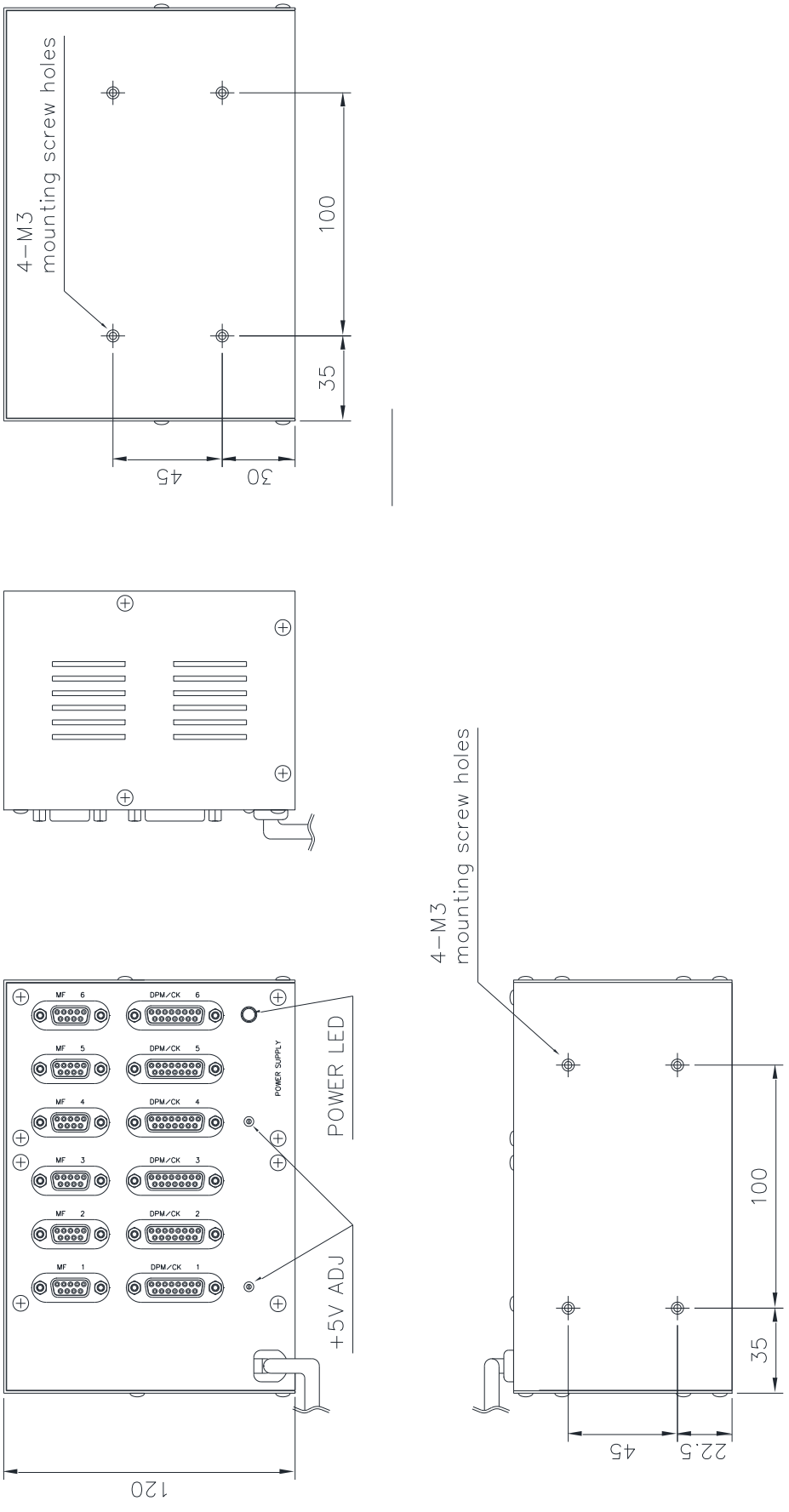
Outline drawing of the PSK-1FB



Outline drawing of the PSK-



Outline drawing of the PSK-6FB



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URL : http://www.kofloc.co.jp