

TDS

Pre-encoded and or pre-printed
tearing and issuing machine

TECHNICAL MANUAL

PRODUCED BY

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REVISIONS

DATE	AUTOR	VER.	CHANGES
15.09.09	G.B	1.2	New Edition

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1 GENERALITIES

The module TDS is a tearing and issuing machine for pre-encoded and or pre- printed tickets. Two version are available: for ISO tickets 85,6x54mm and tickets 95x43mm.

2 ELECTRIC AND MECHANICAL SPECIFICATIONS

2.1 DIMENSIONS AND WEIGHT

	43 mm version	54 mm version	Drop 54 mm version
Length	187.50 mm	187.50 mm	162.50 mm
Width	95.20 mm	104.20 mm	104.20 mm
Height	93.70 mm	93.70 mm	93.70 mm
Weight	0.5 Kg		

2.2 POWER SUPPLY

Tension: 24 Vdc +/- 5%

Current At rest < 200 mA
Working < 1,5 A max

The power supply line is equipped with protection against tension overload and polarity inversion.

2.3 SYSTEM INTERFACE

Standard: EIA RS232C

2.4 PERFORMANCES

Operating speed: up to 400 mm./sec.

With feeding and tear less than 1.8 sec.

With ticket fed ready to tear less than 0.8 sec.

2.5 AVERAGE LIFE

Mechanical parts subject to wear: > 600.000 cycles.

Average life of components and values are reachable when preventive maintenance operations are made on parts subject to wear such as rubber rollers etc, especially in negative environment conditions with presence of dust produced by ticket paper and car exhaust pollution and gas.

2.6 ENVIRONMENT CONDITIONS

Working temperature: from + 5 °C to + 50 °C.

Storage temperature: from - 10 °C to + 60 °C.

Relative humidity: from 10 % to 85 %. not condensing RH

Use of the machine in presence of aggressive chemicals is strictly not recommended

2.7 STANDARDS

The magnetic reader encoder complies fully with each norm EN 753, other upon request.

3 ELECTRICAL CONNECTIONS AND SETUP

3.1 CN 1 POWER SUPPLY CONNECTOR

Power is supplied by the CN1.
The pin layout is the following:

Pin 1 +24V
Pin 2 +24V
Pin 3 GND
Pin 4 GND

3.2 CN 2 SERIAL INTERFACE RS232 AND CAN BUS CONNECTOR

The RS232 serial interface for connection to host is available in connector CN2.
The pin layout is the following:

Pin 1 N.C.	Pin 2 N.C.
Pin 3 Tx RS232	Pin 4 N.C.
Pin 5 Rx RS232	Pin 6 GND
Pin 7 N.C.	Pin 8 CAN -
Pin 9 GND	Pin 10 CAN +

3.3 CN 3 MOTOR 2 CONNECTOR

Power supply of C.C. motor 2 is in connector CN3. Motor 2 drives ticket feeding.
The pin layout is the following:

Pin 1 OUTB
Pin 2 OUTB
Pin 3 OUTA
Pin 4 OUTA

3.4 CN 4 MOTOR 1 CONNECTOR

Power supply of C.C. motor 1 is in connector CN3. Motor 1 drives ticket feeding.
The pin layout is the following:

Pin 1 OUTB
Pin 2 OUTB
Pin 3 OUTA
Pin 4 OUTA

3.5 CN 7 PAPER LOW CONNETOR

The CN 7 connector allows to connect to the board a paper low sensor.
The pin layout is the following:

Pin 1 OUT
Pin 2 GND
Pin 3 IN
Pin 4 GND

3.6 CN 10 MOTOR ENCODER CONNECTOR

The connector CN 10 allows to connect to the board a encoder for motor movement detection.
The pin layout is the following:

Pin 1 +5V
Pin 2 OUT
Pin 3 +5V
Pin 4 IN

3.7 CN 15 AUXILIARY TTL/RS232 SERIAL INTERFACE CONNECTOR

The auxiliary serial interface for connection to host is available in connector CN15.
The pin layout is the following:

Pin 1 +5V
Pin 2 TX TTL/RS232
Pin 3 GND
Pin 4 RX TTL/RS232

3.8 CN 15-1 PROGRAMMING SERIAL INTERFACE CONNETOR

The CN 15-1 connector is used for Microprocessor internal FLASH programming.
The pin layout is the following:

Pin 1 N.C.
Pin 2 TX RS232
Pin 3 GND
Pin 4 RX RS232

3.9 PUSH BUTTONS

SWP1 Allows to discharge the paper from the module.
SWP2 Reserved.
SWP3 Allows to reset the board without switching off power supply.

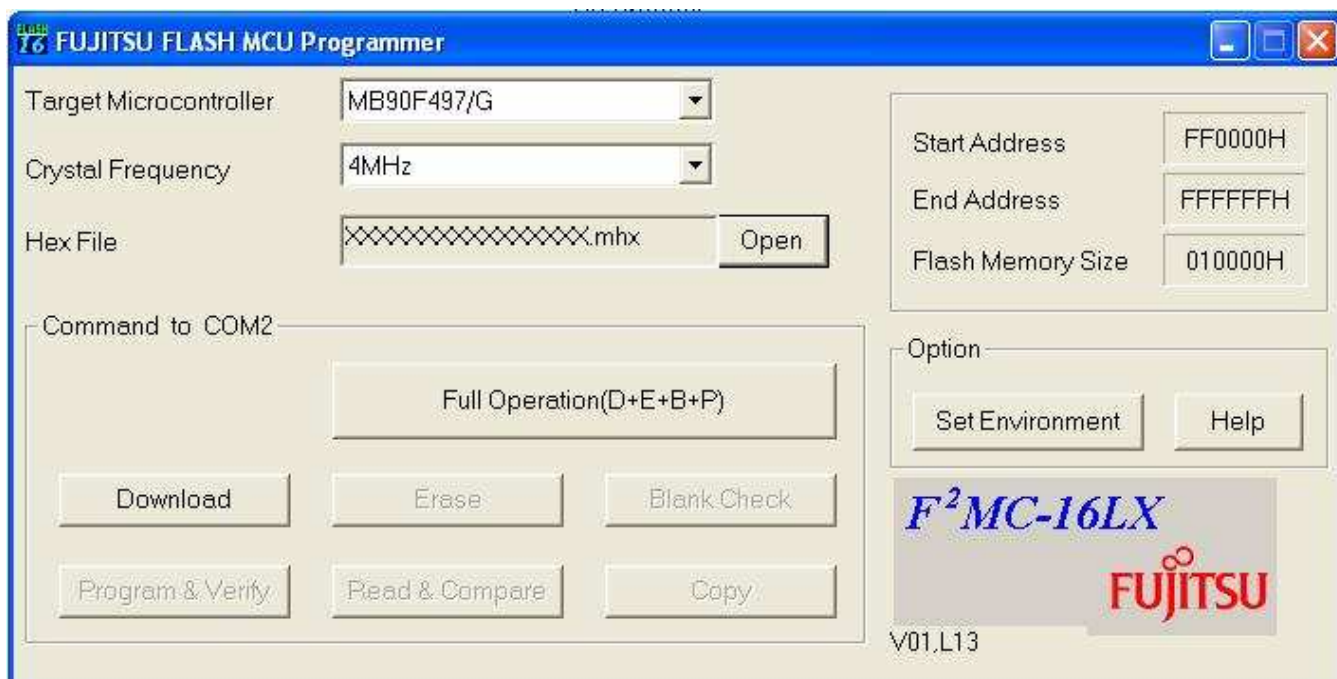
3.10 LEDS

D7 Shows the motor encoder status.
D8 Shows motor 1 sleep signal status.
D9 Shows motor 1 enable status
D10 Shows the OPB1 photo sensor status
D11 Shows the OPB2 photo sensor status.
D12 Shows the OPB3 photo sensor status.
D13 Shows motor 2 enable status.
D14 Shows the OPB4 photo sensor status.
D15 Shows the enabling signal of paper low sensor status.
D16 Shows the paper low sensor status
D17 Shows motor 2 sleep signal status.
D20 Shows Cpu status
DL16 Shows if the device is in programming mode

4 CPU PROGRAMMING PROCEDURE

1. Execute the file flashprog16lx-v01111 to install the program FUJITSU FLASH MCU Programmer
2. Connect the serial cable to the connector CN1B jst 4 pole
3. Press the reset button SW3 on the bottom on the left of the micro and move the dipswitch 6 all to the right. Verify that the LED DL6 placed next to the motor connector is on. Release the reset button
4. Follow the FUJITSU FLASH MCU Programmer program
5. Select in the Target Microcontroller field the model MB90F497/G
6. Select in the Cristal Frequency field the value 4MHz
7. Open the file with MHX extension
8. Select the COM port to which the serial cable is connected

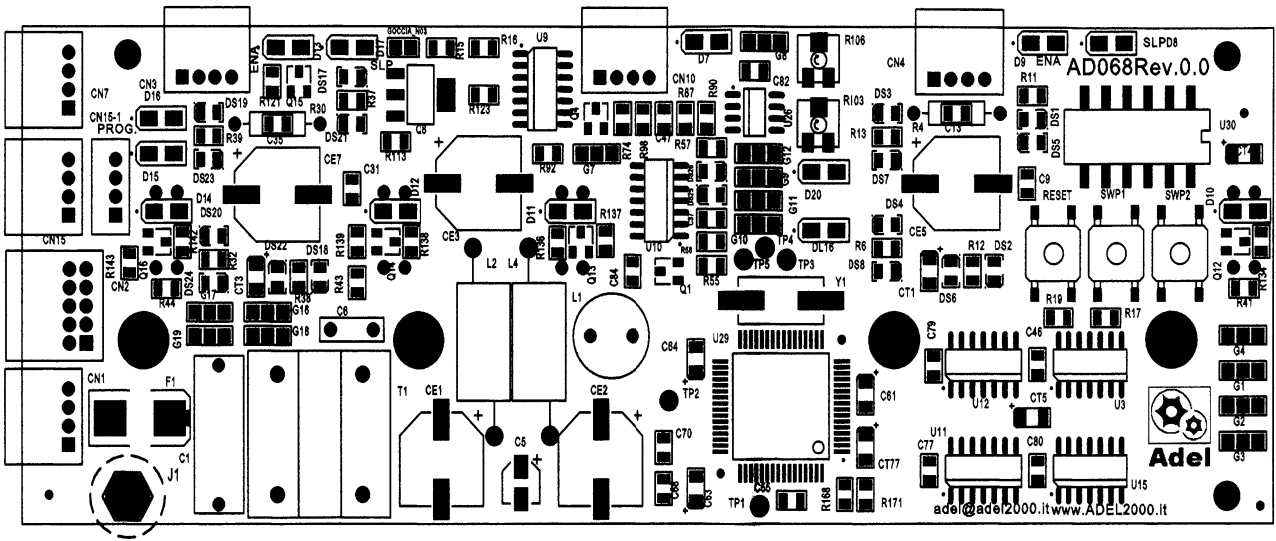
The following window will appear if the COM2 port is used.



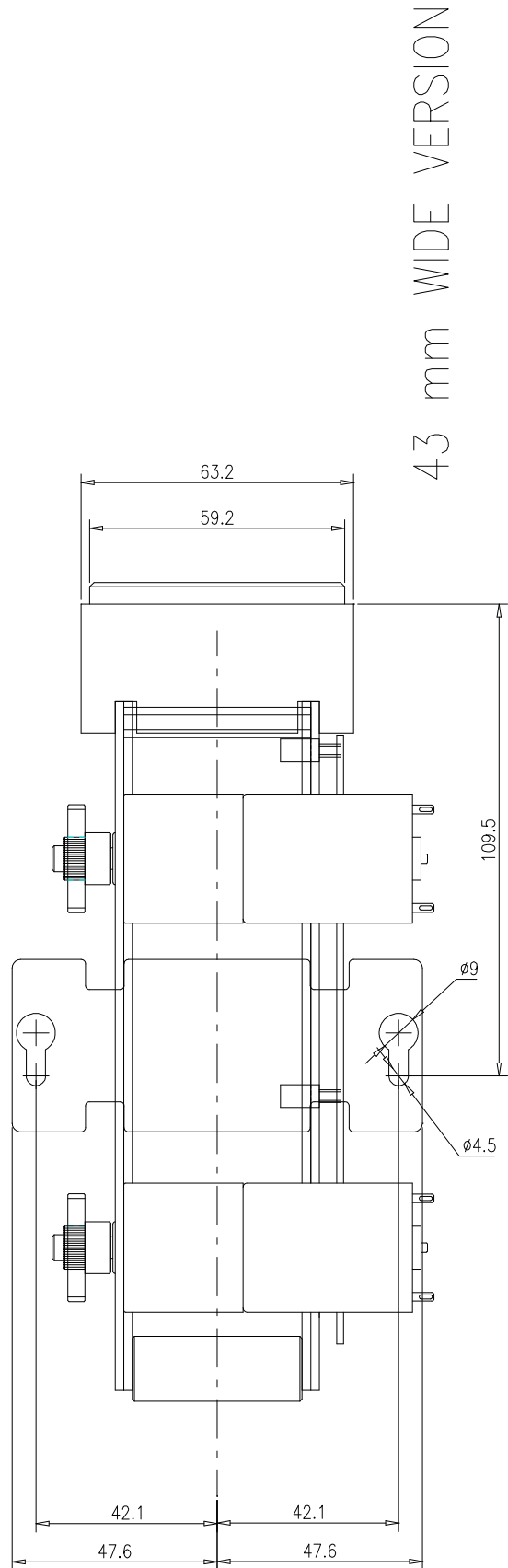
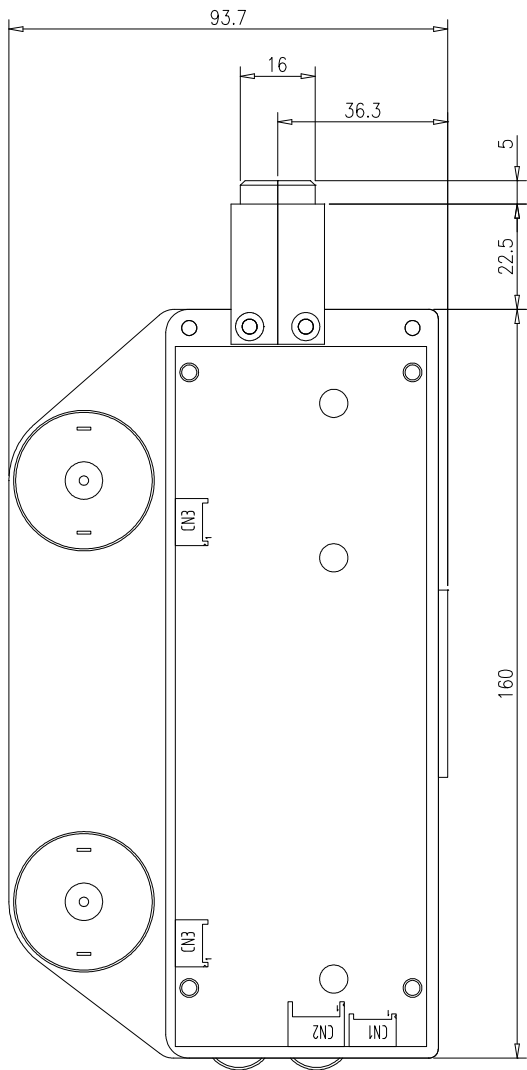
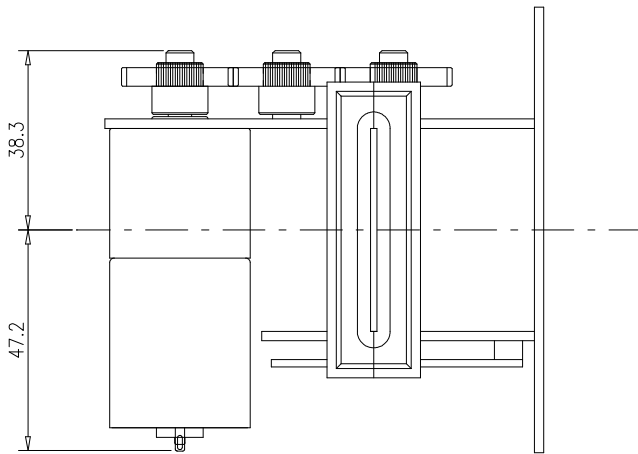
1. Press the Full Operation button (D+E+B+P)
2. Give OK when the flash window appears
3. Wait till the end of the procedure
4. At the end of the procedure press OK and close the program
5. Press the reset button SW3 placed on the bottom of the left hand of the micro and move simultaneously the dipswitch 6 all to the left and verify that the LED DL6 placed next to the motor connector is turned off. Release the reset button.

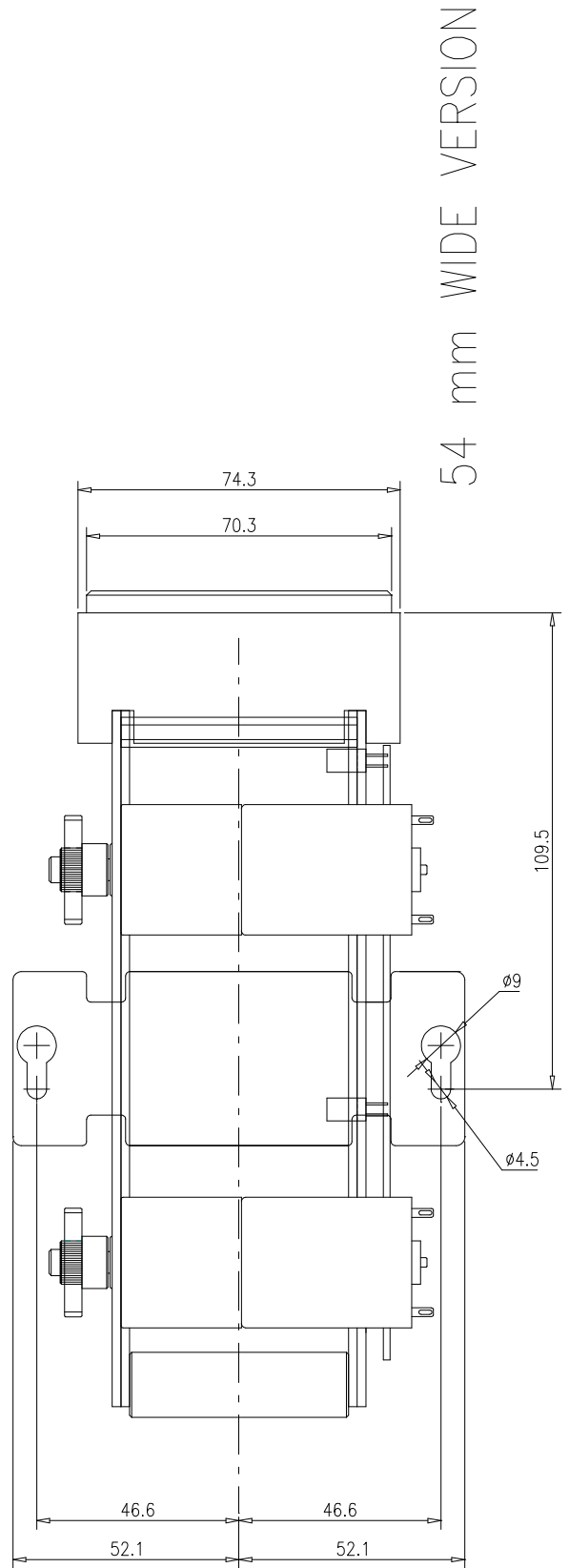
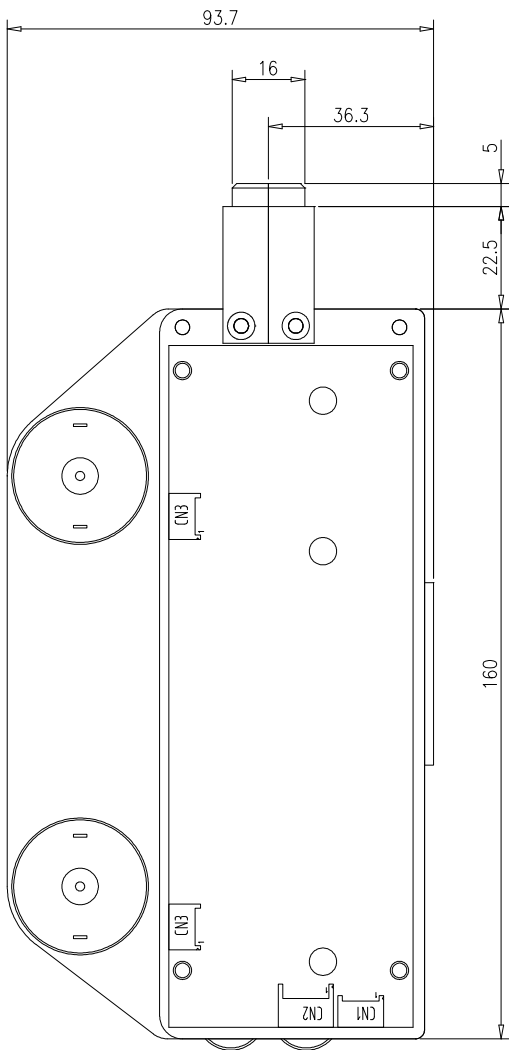
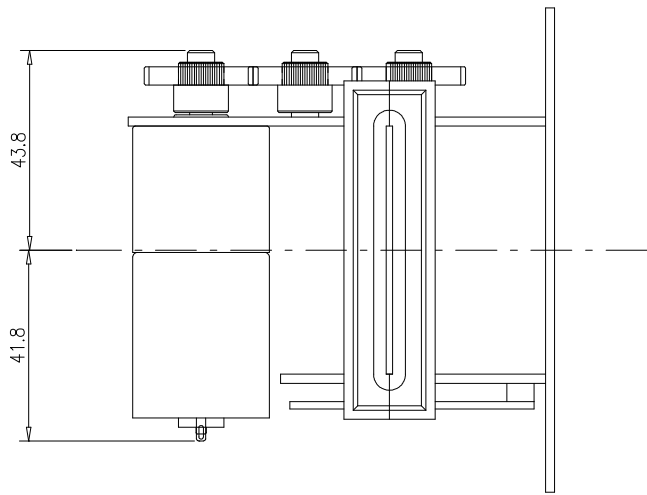
5 CPU LAYOUT

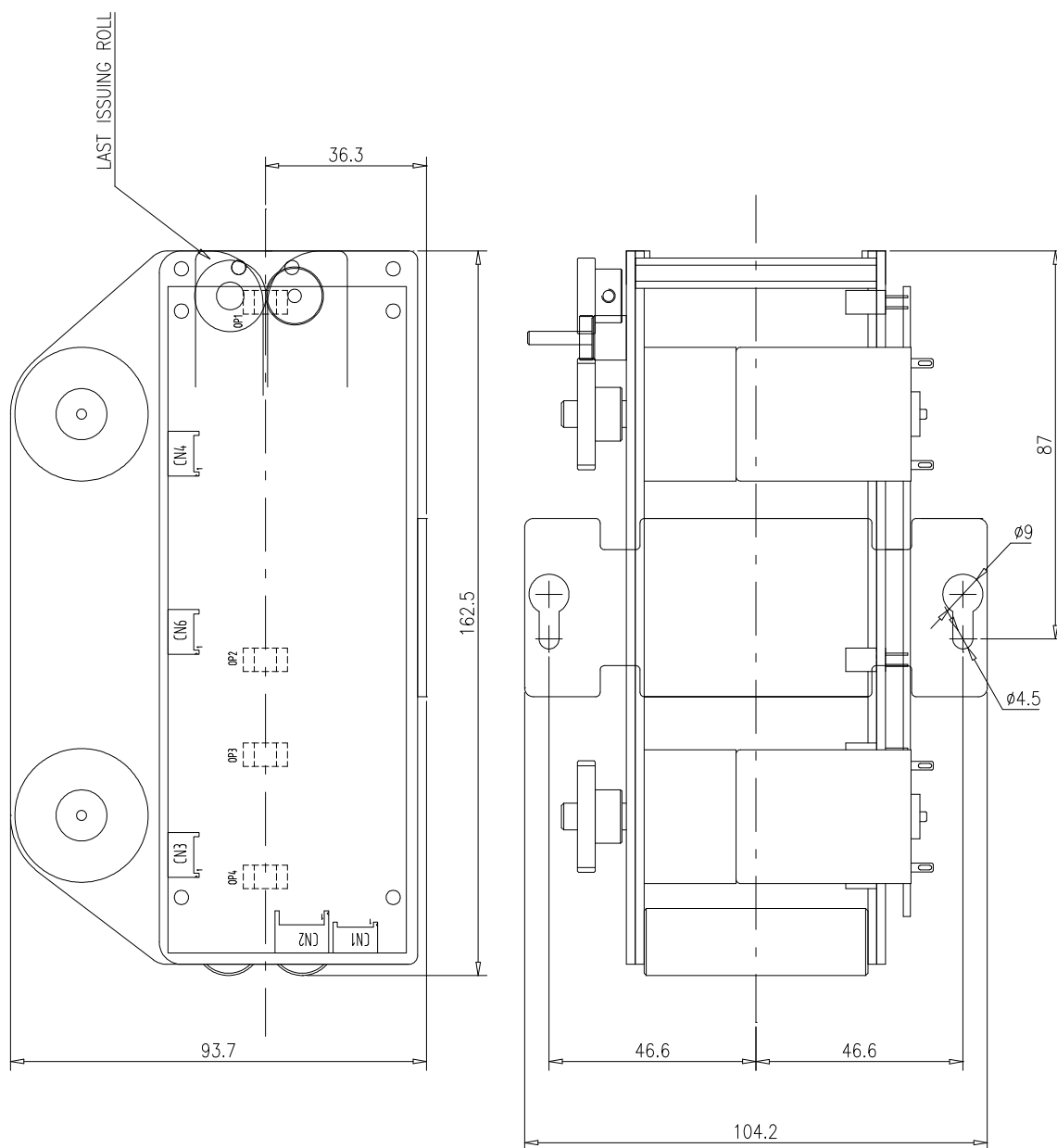
5.1 LATO TOP



6 MECHANICAL LAYOUT







54 mm WIDE DROP VERSION