User and hardware installation instructions

SERIES 3 POWER SUPPLY MANUAL FOR IQ AND TC4

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About this manual

There are three manuals covering the Thermocode Series 4 (TC4) printer system:

1 This manual covers safety, an overview of the components and connections of the power supply (PSU).

2 The Series 4 Touch Screen and Software manual covers the operation of the printer soft ware and functions of the display

3 The IQ Installation, Maintenance and Operational manual covers, warranty, and maintenance of the IQ/TC4 printer.

Contents

1.0 IMPORTANT SAFETY INFORMATION

The presence of this symbol ! in the text indicates potential risk to equipment or personnel.

Please read manual fully before installation, operation or maintenance.
Follow all warnings and instructions marked on the product.
Refer installation and service to Open Date, or their Agent.

1. The power supply must be earthed via the 3 pin AC mains socket on the front panel. It is dangerous to operate the printer system without an earth connection.
2. The printer, power supply and touch screen contain no user serviceable parts. Apart from removal of the ribbon cassette no other part of the equipment should be opened or dismantled by the user unless suitably trained/qualified to do so.
3. The power supply operates from dangerous voltages and must be disconnected from the AC mains supply before removal of the top cover.
4. **To disconnect the AC mains supply** remove the power connector from the AC mains socket on the front panel.
5. Fuses must only be replaced with the same type and specification. Types and ratings are given in the Power Supply specifications section.
6. Only operate the printer system from the type of mains supply specified on the rear panel of the power supply.
7. Disconnect the AC mains supply before connecting or disconnecting the printer system components.
8. Disconnect the AC mains supply whenever cleaning or maintenance is undertaken.
9. No part of the printer system is waterproof or pressure washable.
10. Do not use the any part of the printer system near water. Do not allow liquid to be spilt onto any part of the printer system.
11. Do not place any part of the printer system on an unstable stand, table or machine. Operator injury and/or product damage may result from the product falling.
12. Do not insert foreign objects into any apertures in the printer system. Damage, short circuits or electric shock may result.
13. Do not use the product in areas where explosive gasses or substances are present.

! Disconnect the AC mains supply and refer to Open Date, or their Agent, under the following conditions:

- If the cabling and/or part of the hardware appears damaged.
- If liquid has been spilt onto or into any part of the hardware.
- If the product malfunctions or fails to operate normally when the user instructions and the troubleshooting guide are followed.

2.0 IQ/TC4 Printer System

The IQ/TC4 thermal transfer printing system consists of these hardware components:

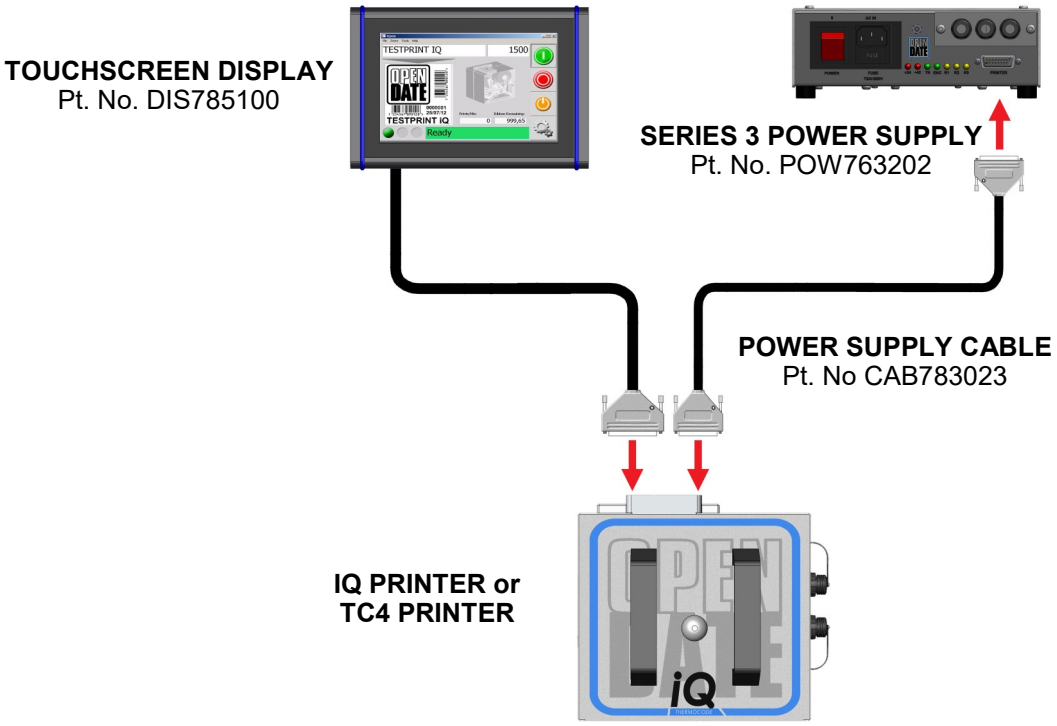
Printer	IQ/TC4	
Display	Pt. No	DIS785100
Power Supply	Pt. No	POW763202
PSU Printer cable	Pt. No	CAB783000

The printer contains the system computer which drives the printing mechanism and the display. It has a user removable cassette for ribbon replacement.

The display has a touch screen for configuring and operating the printer, and shows information about the printer status. It connects to the printer using a captive D connector cable.

The power supply, designed for quick and easy replacement, has connections for print triggering and interfacing with external equipment. Three software programmable relays can be set to indicate printer status to external equipment. Connects to the printer using a 2 metre D to D cable.

3.0 System Diagram



4.0 System Connection

(for connections to external equipment refer to page IQ/TC4 Software Manual)

! See IMPORTANT SAFETY INFORMATION on page 3 before making connections.

Disconnect the power supply by removing the mains cable before connecting or disconnecting system components.

Make all connections to external equipment (IQ Software Manual) and connect the IQ system as shown before powering up.

5.0 Power Supply Features

The Power Supply Unit (PSU) has been designed to make installation and servicing as easy as possible. Its modular construction makes replacement of the whole unit or individual parts quick and easy. The PSU weighs less than 2Kg.

- Access is only required to the top and front of the case for installation & servicing. This makes it easy to fit inside cramped control cabinets.
- The individual power supplies and the main Printed Circuit Board (PCB) can be exchanged rapidly because all the connections are plug & socket. No more than 4 screws hold any of the main parts in place.
- The internal fan circulates air round the inside of the case only. No external air is drawn in. There are no filters to become clogged so build up of dust (and therefore heat) should not be a problem. Heat from the PSU modules is conducted to the outside using the entire surface area of the PSU case.
- The 24V and 48V Switch Mode power supply modules incorporate the latest high efficiency technology to reduces heat output and prolong service life.

The features below make disconnection and exchange of the power supply very quick and simple.

- The AC power connector is a standard IEC C13/14 plug & socket. (It can be clamped into place if required.)
- The cable entry is held on by two screws. It can be removed without undoing the cable glands.
- The Relay, Print Trigger and Encoder connections use pluggable connectors so they can be disconnected from the (PCB) quickly, without undoing individual terminals.

6.0 Power Supply Specifications

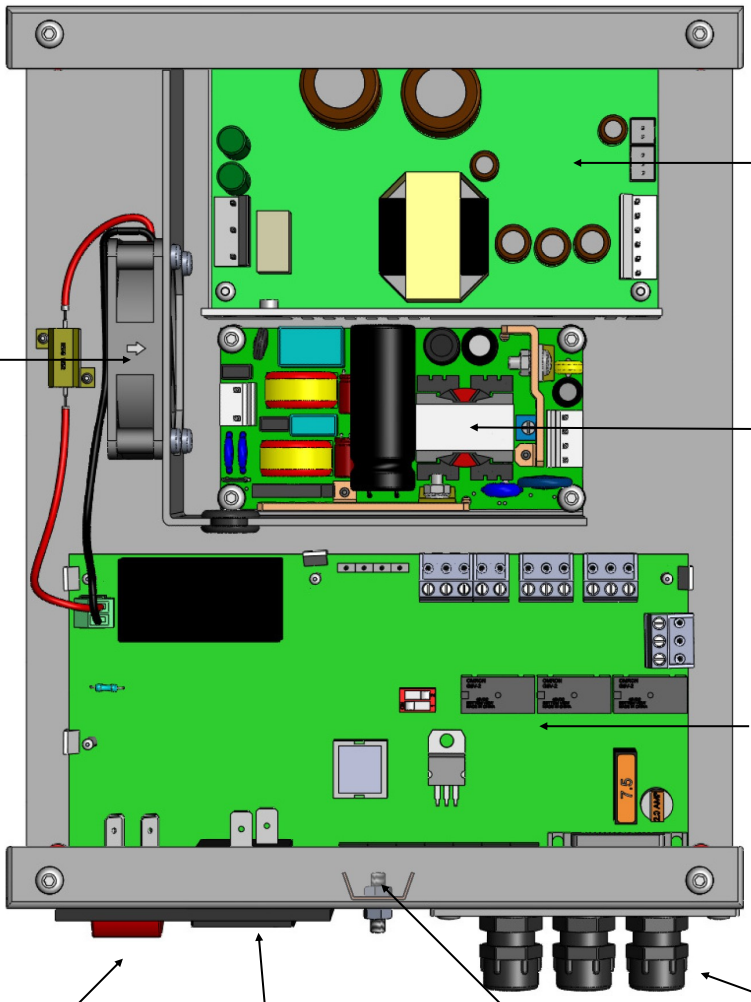
Input voltage;	115 to 230Vac @ 50/60Hz (self adjusting)
Input current;	0.6A average, 0.9A peak
! Designated disconnect;	AC mains connector (IEC C13/14), front panel.
*! AC fuse (under mains input socket);	T2AH250V or equivalent. Open Date Pt. no; FUS783020
Output Voltage (Print head);	24VDC
Output Voltage (Motors);	48VDC
*! Output fuse 48V (SF1);	T2A 250V micro fuse. Shurter type 0034.6618 or equivalent. Open Date Pt. no; FUS783022
*! Output fuse 24V (SF2);	Little fuse ATO 32Vdc brown 7.5A or equivalent. Open Date Pt. no;FUS763029
Dimensions;	Width 205mm (8.071”) Depth 260mm (10.24”) without mains and printer cables Height 76mm (3”) including feet
Weight;	1.85Kg (4.08lbs)

*! **Fuses must only be replaced with same type and rating. See page 3 - IMPORTANT SAFETY INFORMATION**

7.0 Power Supply Internal Components

! See IMPORTANT SAFETY INFORMATION on page 3 before opening power supply

Some wiring omitted for clarity



24V PSU module
Pt. No. POW783006

Internal fan

48V PSU module
Pt. No. POW783005

Power supply PCB assy.
Pt. No. ASY783013
Refer to page 8 for connection to external equipment

Cable entry (detachable)
For connections to external equipment

Power switch
To avoid data loss refer to software manual for correct shutdown procedure.

! To disconnect mains supply remove cable from ac mains socket

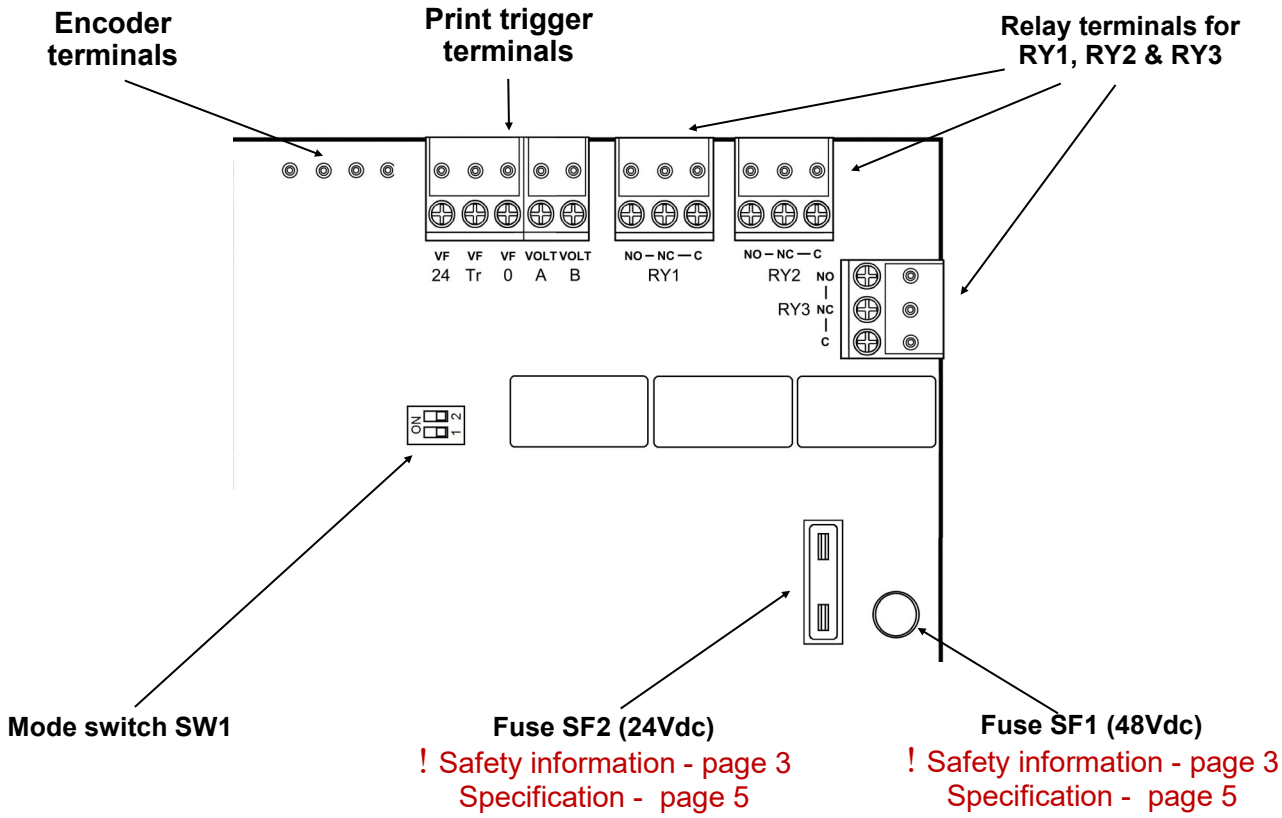
AC mains socket
Disconnect cable before opening power supply

! Disconnect before removing cover

Functional earth tab
(Inside front panel)
For grounding connections to external equipment

8.0 Fuse Locations and Connection to External Equipment

! See IMPORTANT SAFETY INFORMATION on page 3 before opening power supply



Encoder Input: Not used

Print Trigger terminals; (trigger)

For volt free triggering use terminals VF24 (+24VDC), **VF0** (0V) **VFTr**

Printing is triggered when **VFTr** is connected to either **VF24** or to **VF0**

! **To avoid damage do not connect VF24 to VF0**

For NPN or PNP sensor triggering:
Connect sensor +ve to **VF24**, sensor –ve to **VF0** & Q (PNP or NPN) to **VFTr**.

For Voltage Triggering:
Apply trigger voltage between terminals **VOLT A** and **VOLT B**.
9V to 40V peak, either polarity, ac or dc.

RY1, RY2, RY3; Single pole floating contact relay terminals.
C; Common, **NO;** normally open **NC;** normally closed.
Relay functions are selected in software—see IQ/TC4 Software Manual.

SW1 Switch; Switch 2; leading or trailing edge triggering. ON is leading trigger.

Important -To comply with the CE Electromagnetic compatibility regulations;

1. All cabling to external equipment must be screened. The screen must connected to the functional earth tag in the power supply (see page 6) and grounded at the external equipment.
2. The supplied clip on ferrites (Wurth 742 711 12 or equiv.) must be fixed around each cable where it enters the power supply, either inside or outside, as close as possible to the cable gland . The ferrites are supplied opened and snap shut over the cable after terminating.

Failure to observe these precautions may mean the printer installation does not comply with the EMC regulations detailed in the CE conformity declaration.

9.0 Power Supply - Front

Power switch
To avoid data loss refer to software manual for correct shutdown procedure.

! To disconnect mains supply remove cable from ac mains socket

ac mains socket

! Disconnect cable before removing cover

Functional earth point
For grounding to external equipment to reduce static electricity build up.

Cable entry (detachable)
For connections to external equipment

Ac mains fuse
See below

! Safety information - page 3
Specification - page 5

+24v +48v
lit when dc supplies are OK

Encoder
Not used

Printer connector
for power supply cable to printer

Print trigger
lit when print Is triggered

Relay indicators
lit when relays are on

Power switch; Before switching off the software must be put into standby to avoid data loss. See software manual for more information.

ac mains socket; ! Disconnect cable before maintenance, servicing or inspection of the system

ac mains fuse; Power cable must be removed to gain access to fuse compartment. Pull fuse drawer forward to expose fuse. Active fuse is located in rear compartment . Spare fuse may be stored in front compartment.

! If fuse blows after replacement consult Open Date or qualified technician.

+24v +48v Indicates DC voltage is present. If not lit check fuses SF1 (48V) or SF2 (24V)

Print trigger Flashes briefly to indicate print trigger received.

Encoder Not used. May be on or off. Has no effect on other functions.

R1 R2 R3 Indicates status of interface relays. Lit when relay energised.
See **RY1, RY2, RY3** on page 8 for relay connection & set up.

10.0 Power Supply - Mounting

! See IMPORTANT SAFETY INFORMATION on page 3

1. The power supply must be positioned or mounted securely so it cannot fall or move into a hazardous location.
2. Avoid locations where there are extremes of temperature.
3. Avoid locations where liquids may come into contact with or be accidentally spilt onto the power supply.
4. Avoid locations where there are excessive vibrations.
5. Locate the power supply for easy access to the power switch, AC mains cable and the indicator lights.
6. Leave sufficient clearance around the power supply so that the top cover and connecting cables may be removed easily.
7. Access is only required to the top and front of the power supply when installed. The back, sides and base may be positioned as close as desired to adjacent objects. Leave sufficient clearance for fitting the top cover.
8. To avoid damage or distortion to the power supply chassis do not over tighten mounting screws.
9. The power supply feet are secured by M4 x 8 cap head screws These may be removed using a 3mm Allen key and replaced with longer M4 screws to mount the power supply to a flat surface. The rubber feet must be retained in position as spacers.

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