MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GENERAL ELECTRIC

8617-FT-NI

NON-INCENDIVE DIGITAL INPUT FIELD TERMINAL

Used with the applicable PAC8000 field terminals configuration.

REFERENCE PACKAGE

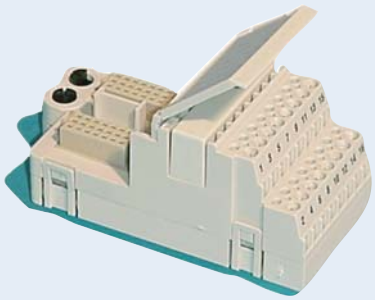
OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: MTL 8000 Series Field Terminals, January 2007, pp. 1 and 3-5; Emerson PAC8000 Remote I/O 00813-0100-0108, February 2022, p. 5.

Field terminals - Screw clamp



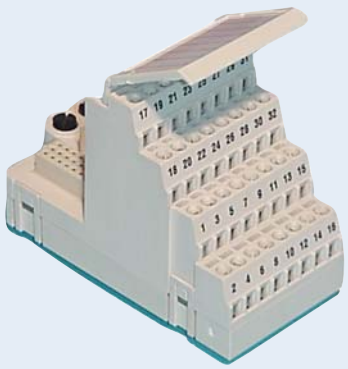


General

A field terminal is a replaceable unit for terminating the wiring from the field devices. Each I/O module requires its own field terminal and the correct type is recommended on the individual I/O module data sheet.

The field wiring is terminated on screw terminals that can take up to 2.5mm² wire. By wiring virtually directly to the I/O module there is no need for additional patching or terminations.

The field terminal attaches to the module carrier first; the I/O module is then mounted on it. A pair of multipin connectors link the field terminal to the I/O module.



Fusing & loop-disconnect

Field terminals are available that contain a replaceable fuse or a "loop-disconnect" link for each channel. Fuses have a 2A rating and, like the links, have a mechanical feature that allows them to be partially withdrawn. This provides a break in the field wiring loop which assists servicing and fault finding in the field.

Thermocouple modules

Thermocouple modules require specific field terminals. The thermocouple modules – 8105-TI-TC (4-channel) and 8205-TI-IS (8-channel IS) – each have their own specific field terminal containing a cold junction compensation sensor. The 8205-TI-IS can also accommodate a remote cold junction – if used, it occupies one of the eight available channels.

RTD modules

The RTD modules, 8106-TI-RT (4-channel) and 8206-TI-IS (8-channel) use field terminals that are specifically designed to accommodate 2, 3 and 4-wire connections. The field terminals incorporate diodes that become forward biased if a channel becomes open circuited - ensuring that other channels are not affected by this situation. Similarly, an RTD can be removed from, or not fitted to, a channel without affecting the operation. The points where the energisation current enters and leaves the field terminals are shown by the symbols I+ and I–, respectively, on the appropriate diagrams.

IS field terminals

Particular field terminals are required for modules with built-in IS interfaces, and field terminals are coloured blue to mark this difference.

Tagging strip

A tagging strip is supplied with each terminal (with the exception of the mass termination assemblies). A card is provided for the user to mark the channel assignments for the field wiring and this is protected by a clear plastic panel.

Mechanical key coding

Field terminals are an important link in the field connection process and a mechanical keying technique is used to prevent incompatible modules from being connected accidentally to a field circuit. This avoids inadvertent damage to I/O modules and field wiring, and maintains safety in hazardous area applications. It is implemented in two complementary ways.

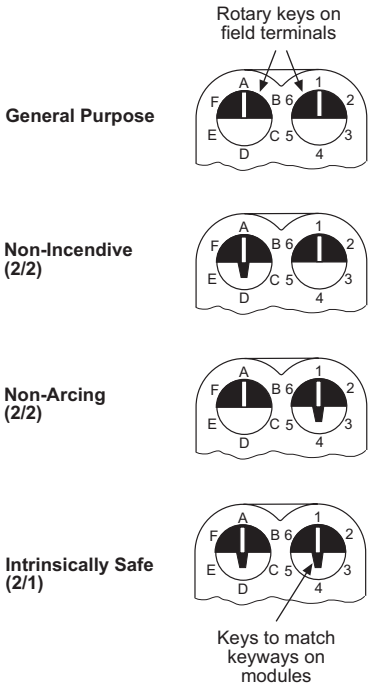
Rotatable keys

A pair of mechanically rotatable keys form part of the field terminal (see diagram below) and these are set by the user during installation to match the fixed key-code (e.g. A 1) of the I/O module that will be fitted onto it. A module with a different key-code cannot then accidentally be fitted on that field terminal.

Keyways

The four types of field terminal: general purpose, non-incendive, non-arcing and intrinsically safe, have a further pattern of keys that make each type unique; modules of a corresponding type have a matching keyway. It is therefore impossible to implement a potentially hazardous combination of module and field terminal.

The four types of field terminal can be identified from the diagram below.



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Field terminals



- *range of field terminals*
- *standard, fused, loop-disconnect & MTAs*
- *blue moulding for IS field wiring*
- *THC and RTD versions available*
- *tag strip on all screw-clamp field terminals*

SPECIFICATION

See also System Specification

HAZARDOUS AREA APPROVALS

Location of field terminal...Zone 2, IIC, T4 hazardous area or Class 1, Div 2, Groups A–D, T4 hazardous location

Location of I/O field wiring

For 860x-FT-xx and 861x-FT-xx...Zone 2, IIC, T4 hazardous .....area or Class 1, Div 2, Groups A–D, T4 hazardous location

For 862x-FT-IS .....Zone 0, IIC hazardous area or Div 1, Groups A–D hazardous location

ELECTRICAL

Rated voltage .....250V ac

Maximum current per I/O channel.....3A

Fuse rating (where fitted).....2A

Conductor size .....0.14–2.5mm^2

MECHANICAL

Material.....Modified Poly-Phenylene Oxide

Dimensions - approx (including tagging strip)

8617-FT-NI and 8623-FT-IS.....42 (w) x 88 (d) x 61 (h) mm

Others.....42(w) x 88 (d) x 39.5 (h) mm

Weights (typical - including tagging strip)

Unfused type (except THC & RTD) 78g

Fused type (including fuses) 86g

THC type.....70g

RTD type 106g

8617-FT-NI and 8623-FT-IS (16-channel) 106g

See also datasheets for 8618-FT-MT and 8619-FT-MT

PART NUMBERS

GENERAL PURPOSE FIELD WIRING

Field terminal description	Part number
Standard	8602-FT-ST
Fused	8604-FT-FU
THC	8605-FT-TC
RTD	8606-FT-RT
4-wire transmitter	8615-FT-4W
16/30-channel DI	8617-FT-NI
16-pin Mass Termination Assembly	8618-FT-MT
44-pin Mass Termination Assembly	8619-FT-MT

ZONE 2/DIV2 FIELD WIRING APPLICATIONS

Field terminal description	Part number
THC	8605-FT-TC
RTD	8606-FT-RT
Non-incendive*	8601-FT-NI
Non-incendive, fused*	8603-FT-FU
Non-arcing, standard*	8610-FT-NA
Non-arcing, fused*	8611-FT-FU
4-wire transmitter	8615-FT-4W
16/30-channel DI	8617-FT-NI
16-pin Mass Termination Assembly	8618-FT-MT
44-pin Mass Termination Assembly	8619-FT-MT

ZONE 1, 0/DIV 1 (IS) FIELD WIRING APPLICATIONS

Field terminal description	Part number
IS, standard	8621-FT-IS
IS, loop-disconnect	8622-FT-IS
IS, 16-channel DI	8623-FT-IS
IS, 8-channel DI, loop-disconnect	8624-FT-IS
IS, THC	8625-FT-IS
IS, RTD	8626-FT-IS

ADDITIONAL COMPONENTS

Description	Part Number
Switch/Prox. detector wiring panel	8650-FT-PX
2A Fuse pack (10 in pack)	8401-FU-2A
Loop-disconnect links (10 in pack)	8405-LK-ZE

**Refer to 2/2 I/O module data sheets for recommended non-incendive or non-arcing field terminal type in Zone 2 and Division 2 applications.*

Connection diagrams

Identify terminal type in the table below, then see named diagram for connections.

Terminal type	Diagram No.
8601-FT-NI	1
8602-FT-ST	1
8603-FT-FU	1
8604-FT-FU	1
8605-FT-TC	2
8606-FT-RT (2-wire)	3
8606-FT-RT (3-wire)	4
8606-FT-RT (4-wire)	5
8610-FT-NA	1
8611-FT-FU	1
8615-FT-4W	1
8617-FT-NI	6 or 6a†
8618-FT-MT	see datasheet
8619-FT-MT	see datasheet
8621-FT-IS	1 or 7*
8622-FT-IS	1 or 7*
8623-FT-IS	6
8624-FT-IS	1
8625-FT-IS	8
8626-FT-IS (2 wire)	9
8626-FT-IS (3 wire)	10
8626-FT-IS (4 wire)	11
8650-FT-PX	see datasheet

† Wire as per diagram 6a only when used with 8125-DI-DC or 8127-DI-SE modules.

* Wire as per diagram 7 only when used with 8215-DO-IS module.

Diagram 1

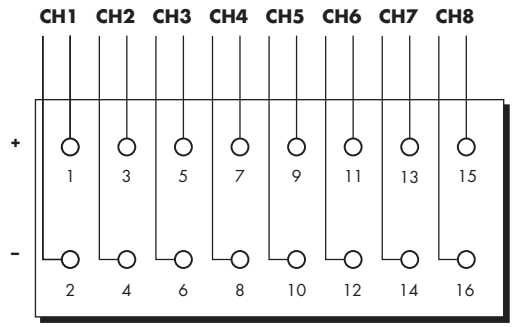


Diagram 2

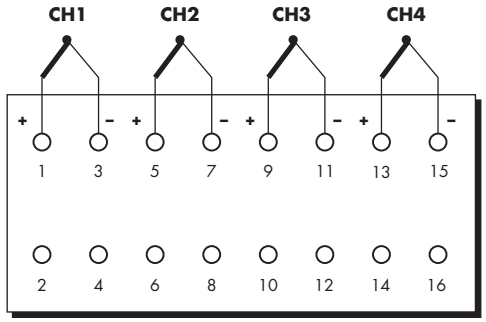


Diagram 3

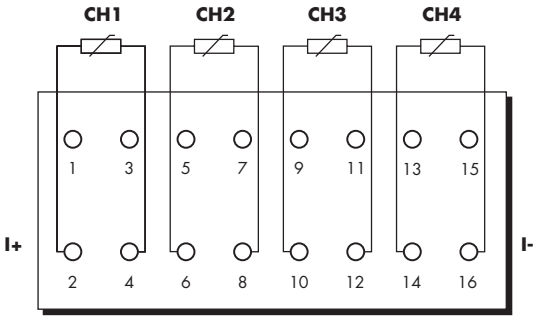


Diagram 4

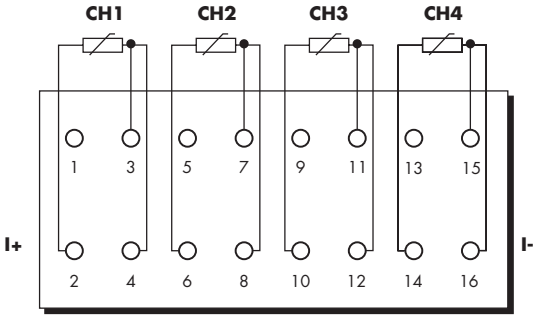
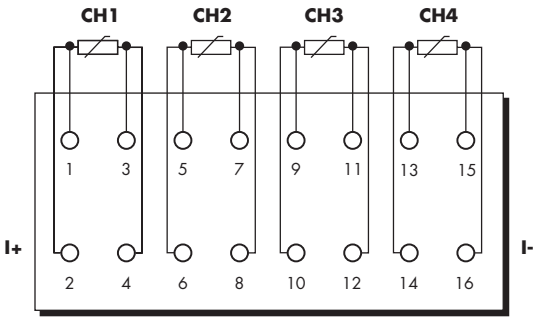


Diagram 5



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Connection diagrams

Diagram 6

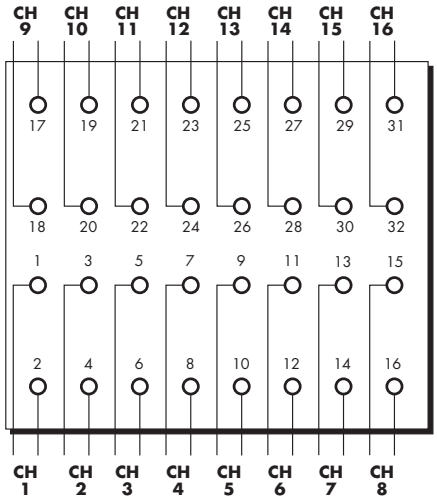


Diagram 6a

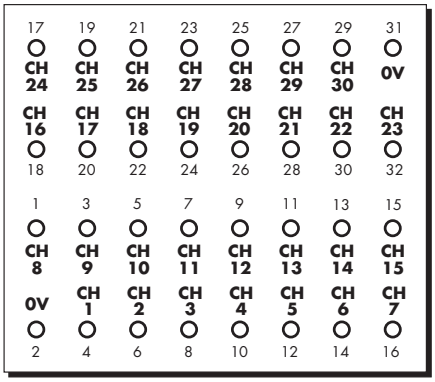


Diagram 7

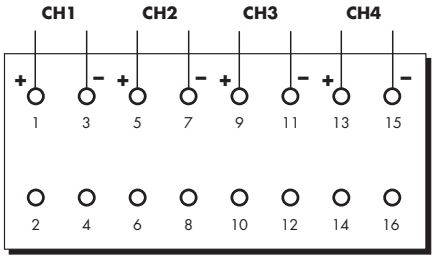


Diagram 8

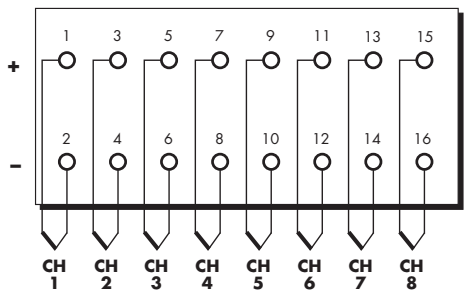


Diagram 9

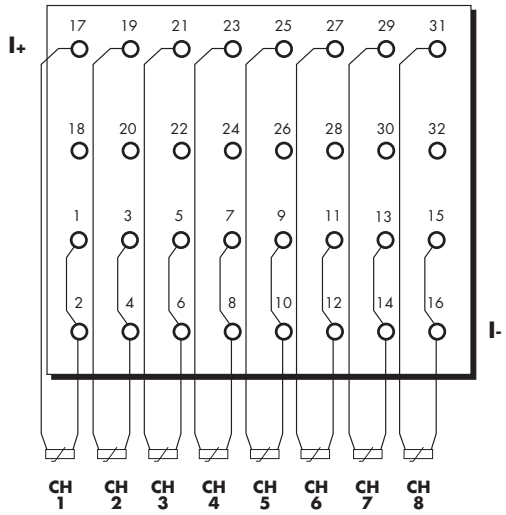


Diagram 10

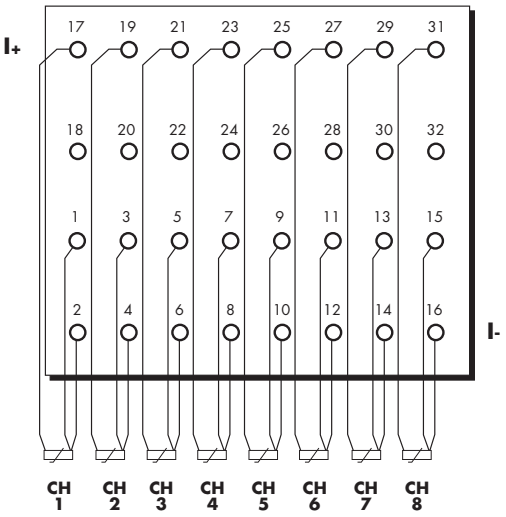
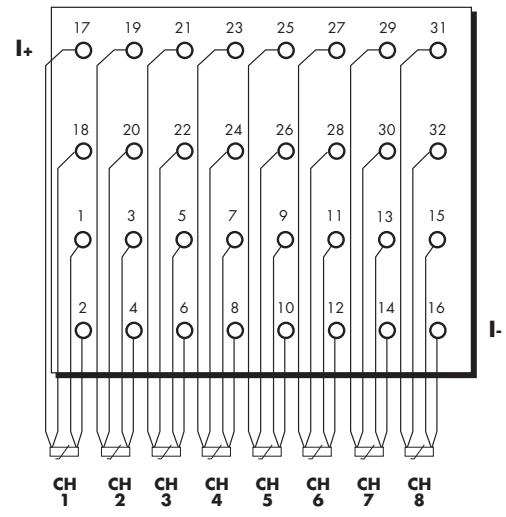


Diagram 11



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