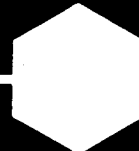


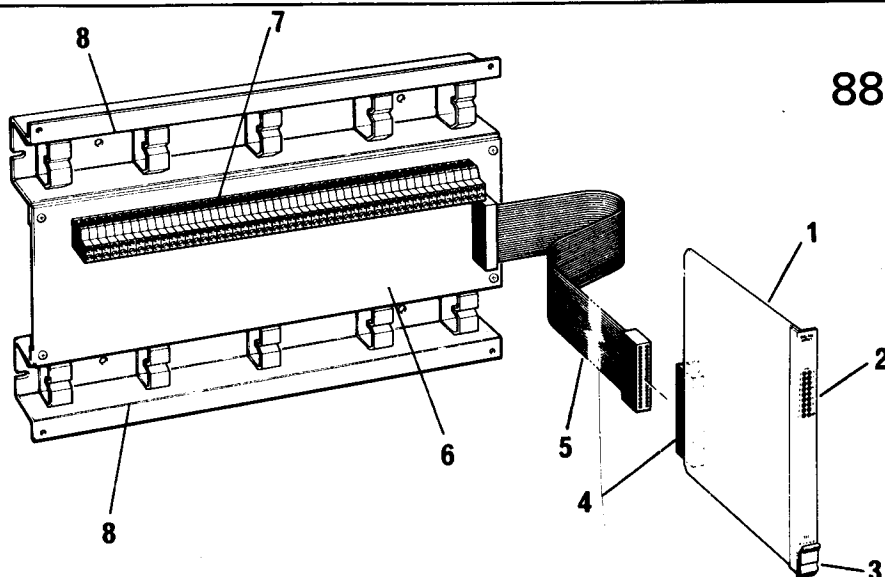
GEC Electrical Projects Limited

GEC Industrial Controls Limited

GEM 80



8844 Digital Input



1. Digital Input Module (Single slot width in GEM 80 subrack).
2. Input Monitoring.
3. Withdrawal Handle.
4. Backplane.
5. Ribbon cable.
6. Termination Panel.
7. Plant terminals.
8. Two mounting kits each one shared with adjacent panels.

DESCRIPTION

The 8844 Digital Input Equipment interfaces low level digital signals into the GEM 80 fast I/O highway.

Typical signals could come from X ray gauges, paper-tape readers, other programmable controllers or hot metal detectors.

The equipment accepts 16 low level digital signals and comprises a module connected by a ribbon cable to a termination panel. The module plugs into the subrack of a GEM 80 controller and connects to its fast I/O highway.

FEATURES

- 5V, 15V or 24V input signal options.
- Optical isolation.
- High speed, 1ms minimum pulse width.
- No damage if inputs are reversed.
- Visual indication on all channels.

SPECIFICATION

Number of inputs	: 16
Input ranges	: Three alternatives 0-5V, 0-15V or 0-24V
Input filtering	: 1ms on all inputs
Input isolation	: Individual optical
maximum no	isolation
damage input	(no common connection)
	: $\pm 30V$

Table 1

	0-5V	0-15V	0-24V
Signal loading	6.7mA @ 3V input 13.5mA @ 5V input	10mA @ 15V	10mA @ 24V
Switching points			
V_{LOW} for guaranteed 0	< 1V	< 7V	< 11V
V_{HIGH} for guaranteed 1	> 1.8V	> 11V	> 17.5V
hysteresis minimum	0.25V	1.3V	2V
maximum	0.4V	2V	3.3V

Input indication	: one lamp per signal
	: lamp on when input high
Response time	: OFF $\rightarrow$ ON 1ms
	: ON $\rightarrow$ OFF 1ms

Module dimensions : single slot width in GEM 80 subrack

Termination panel:-

dimensions : 156 x 483 x 30mm
(high x wide x deep)

mounting : 19in (483mm) rack
: between mounting channels at 5U (222mm) centres

Plant terminals : 2 signal terminals plus 1 screen terminal per input
: up to 2.5mm² conductors
: slotted head screw clamp

Humidity : 10 to 90% non-condensing

Temperature : 0 to 60°C operating
: -20 to 70°C storage

Power consumption : 200mA from +15V supply from host controller

Mechanical coding : 0-5V unit 2u, 6u, 1L & 3L
: 0-15V unit and 0-24V unit 2u, 6u, 1L & 3L

APPLICATION NOTES

1. Input Data Table Locations

Fast I/O input data is assigned to data table C. The data from all 16 digital inputs occupies one 16 bit word. The data table location of this word is determined by the position of the digital input module in the subrack.

If for example we have GEM 80/252 the fast I/O modules are fitted in slots 15 to 20 then the module in slot 15 could be called the 1st module in the fast I/O and the module in slot 16 the 2nd and so on. If for example we have a GEM 80/245 the fast I/O modules are fitted in slots 17 to 20 then the module in slot 17 could be called the 1st module in the fast I/O and the module in slot 18 the 2nd and so on. Table 2 shows the data table location for the digital input modules input data.

Table 2

Position of digital input module relative to first module in Fast I/O (See Note 1)	Data Table Location	Position of digital input module relative to first module in Fast I/O (See Note 1)	Data Table Location
1	C0	7	C192
2	C32	8	C224
3	C64	9	C256
4	C96	10	C288
5	C128	11	C320
6	C160	12	C352

Note 1

GEM 80/225 and 252 Fast I/O starts at slot 15.
GEM 80/235 and 253 Fast I/O starts at slot 9.
GEM 80/245 and 254 Fast I/O starts at slot 1.

2. User Connections

All user connections are made to terminals on the termination panel. Three adjacent terminals are provided for each input signal : two for the signal and one for a cable screen. A screened twisted pair cable may conveniently be terminated on these terminals.

Fig.1 shows two typical termination panels and illustrates the panel and terminal identification.

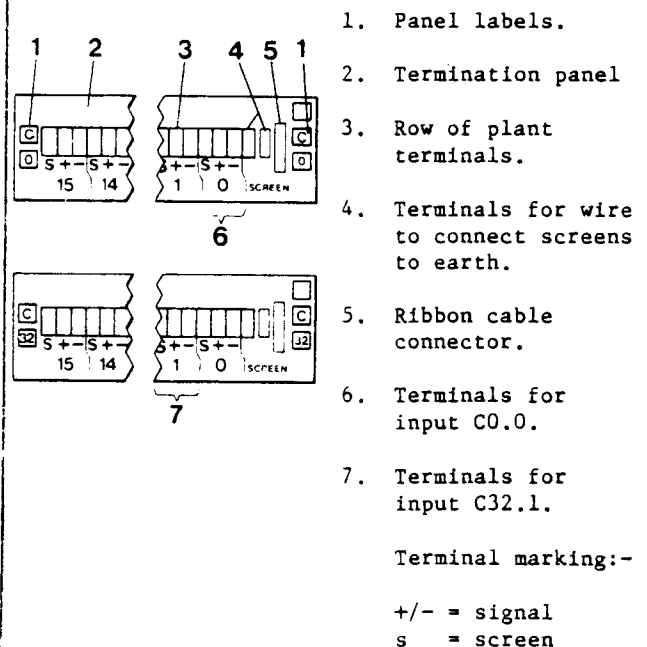
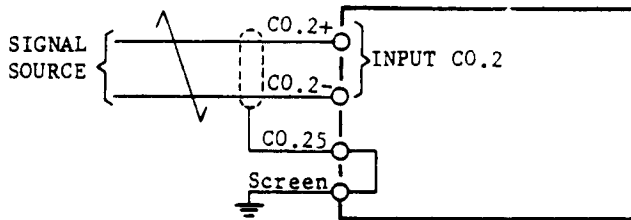


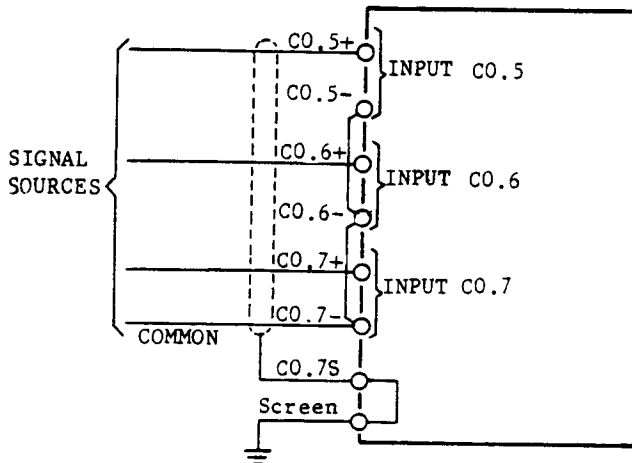
Fig.1 - Panel and terminal identification

3. Typical Circuits

Individual signal (floating)



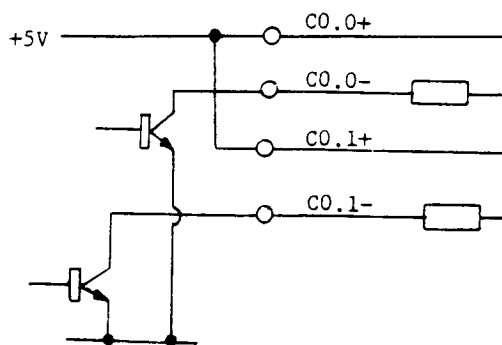
Signal group with common



Note: cable screen should be terminated at one end only.

The digital inputs are suitable for both source and sink input drive. Either side (+ or -) can be commoned.

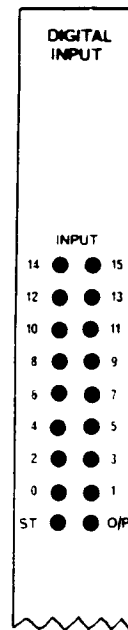
Example:-



4. P Table Configuration

For controllers requiring the P table to be set up the values are given in the relevant controller User Information.

5. Lamps



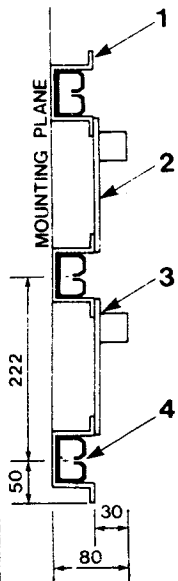
There is one lamp on the module front panel for each of the 16 channels of input and they are illuminated when the input to the respective channel is high.

6. Mounting

- The digital input module mounts in the controller subrack and connects to the fast I/O highway. This is usually fitted at the factory.
- The backplane for the digital input module mounts on the back of the subrack and is attached to the subrack and accepts the lower connector of the Digital Input Module. This is usually factory fitted.
- It is necessary to mount the termination panel. This is usually mounted near the Digital Input Module (ribbon cable supplied is 2m long). The termination panel is a 19" (483mm) rack mounting unit and can be mounted with the optional mounting kit if required.

The optional mounting kit consists of a length of channel section complete with cable retaining clips and mounting screws. The channel is rack mounted and supports a termination panel in front of the plane of the rack. The channel holds the plant cables behind the plant of the panel terminals, leaving clear access to the terminals.

Fig.2 shows how a mounting channel is shared between adjacent panels. The cables are accommodated above each panel. A group of adjacent panels requires one more mounting kit than there are panels.



1. Mounting channel.
2. Analogue input termination panel.
3. Plant terminals.
4. Cable clip.

Fig.2 - Side view showing mounting details

7. Linking

No links are necessary.

ORDERING CODES

1. Equipment

The 8844 Digital Input Equipment consists of:-

- 1 Digital Input Module
- 1 Digital Input Backplane and Connectors
- 1 Analogue Termination Panel and 2m of ribbon cable with connectors

0-24V	8344-4001
0-15V	8344-4002
0-5V	8344-4003

2. Optional Extras

Mounting kit comprising:-

- 1 length of steel channel
- 5 cable retention clips (plate)
- 1 set of fixing screws

8959-0000

3. Spares

Digital Input Module	0-24V	8321-4001
	0-15V	8321-4001
	0-5V	8321-4002

Backplane connector assembly	8062-4001
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Termination Panel	0-24V	8033-4003
	0-15V	8033-4004
	0-5V	8033-4001

Note The Company's policy is one of continuous development and improvement and therefore the right is reserved to supply products which may differ in detail from those described and illustrated in this publication. All our products and materials are sold subject to Conditions of Sale available from us on request

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T243 Issue1 4.84

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Printed in England



ID0051G/0004G