GEC Electrical Projects Limited
GEC Industrial Controls Limited
GEM 80

DESCRIPTION

The contact input unit provides a low cost interface from local operator pushbuttons and switches into a GEM 80 system.

The unit is housed in a compact steel box designed for easy mounting on control panels or inside desks. It has plug and socket connections for the wiring to the contacts and to the GEM 80 basic I/O highway ribbon cable.

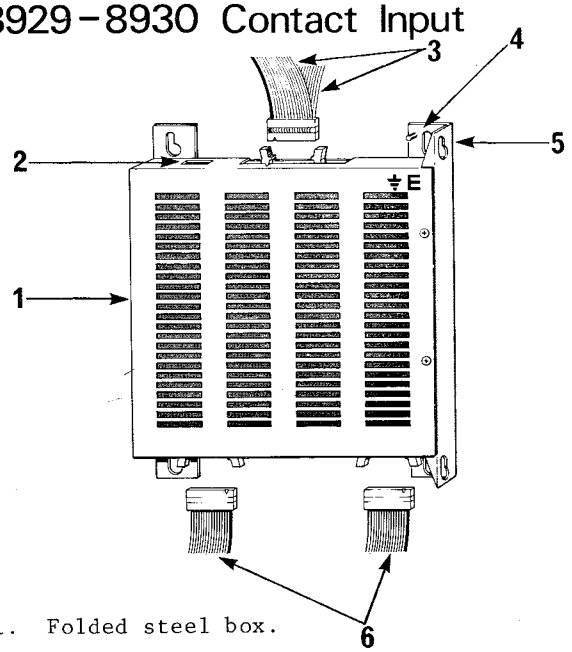
FEATURES

- Low cost.
- Simple wiring to user's contacts.
- Easily replaceable.
- Edge or flat mounting.
- No external power supplies.

SPECIFICATION

Number of inputs	:	32 individual contacts.
Contact resistance for ON state	:	0 to 10K ohm
Contact resistance for OFF state	:	>1 M ohm
Contact voltage	:	30 to 45V d.c. (internally generated)
Filter delay	:	7 ms
Mounting	:	flat against horizontal or vertical surface.
	:	edgewise against vertical surface.
	:	keyhole slots for lift-off facility.
Overall dimensions	:	284 x 244 x 39 mm (high x wide x deep)
Connections	:	plug/socket (PL1) for basic I/O highway ribbon cable.
	:	pair of plugs/sockets (PL2 & PL3) for plant cables.
	:	stud for safety earth.

8929-8930 Contact Input



1. Folded steel box.
2. Unit address setting (rotary switch accessible through window).
3. Basic I/O highway ribbon cable.
4. Earth stud.
5. Mounting flange.
6. Plant cables each for wiring to 16 contacts.

8929 = unit only.
8930 = 8929 + pair of plant cables.

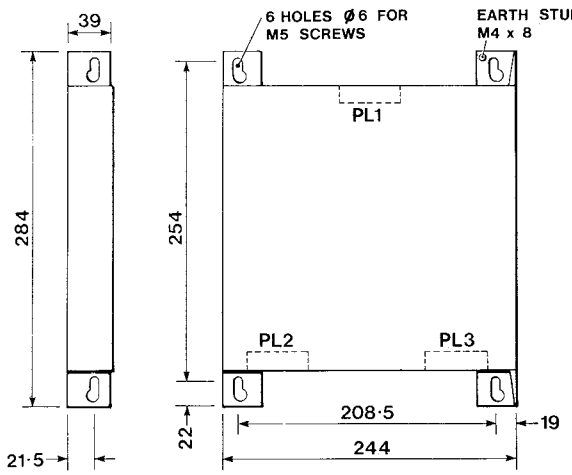
Plant cables (included in 8930)	:	2 off cables (interchangeable) comprising connector wired to 16 twisted wire pairs, woven flat for 1 metre, and 6 metre tails.
	:	cores size 16/0.2mm, identified by colour code.
Power consumption from host controller	:	80 mA @ +15V (from basic I/O highway ribbon)
Noise segregation	:	plant cables highly sensitive to noise.
	:	cables must be segregated from mains and other noise radiating wires.
Temperature	:	0 to 70°C operating
	:	-20 to 70°C storage

Humidity : 10 to 90% non-condensing.

Weight : unit 0.875 kg

: set of cables 3.3 kg

Mounting details:



APPLICATION NOTES

1. UNIT ADDRESS SETTING.

The setting of the decoder switch determines which pair of adjacent data table locations correspond to the unit. The even reference corresponds to connector PL2, the odd reference to PL3.

Table 1 Decoder switch settings.

First basic I/O ribbon			Second basic I/O ribbon		
Unit references		Decoder Switch Setting	Unit references		Decoder Switch Setting
Cable at PL3	Cable at PL2		Cable at PL3	Cable at PL2	
A1	A0	0	A17	A16	0
A3	A2	1	A19	A18	1
A5	A4	2	A21	A20	2
A7	A6	3	A23	A22	3
A9	A8	4	A25	A24	4
A11	A10	5	A27	A26	5
A13	A12	6	A29	A28	6
A15	A14	7	A31	A30	7

Note: If switch position 8 or 9 is used then unit cannot be addressed.

2. REFERENCES OF INDIVIDUAL CONTACTS

The plant cables contain a twisted pair of wires for each contact, with the state number indicated by the wire colours. The common (0V) in each pair is identified by white stripes. For example input A2.7 (state No.7) is coded black with white stripes for the common, violet for the signal.

Table 2 Colour coding of plant cables.

State No.	Wire colour Common (White stripes)	Wire colour Signal (+ve)	State No.	Wire Colour Common (White stripes)	Wire Colour Signal (+ve)
0	Black	Black	8	Black	Grey
1	Black	Brown	9	Black	White
2	Black	Red	10	Brown	Black
3	Black	Orange	11	Brown	Brown
4	Black	Yellow	12	Brown	Red
5	Black	Green	13	Brown	Orange
6	Black	Blue	14	Brown	Yellow
7	Black	Violet	15	Brown	Green

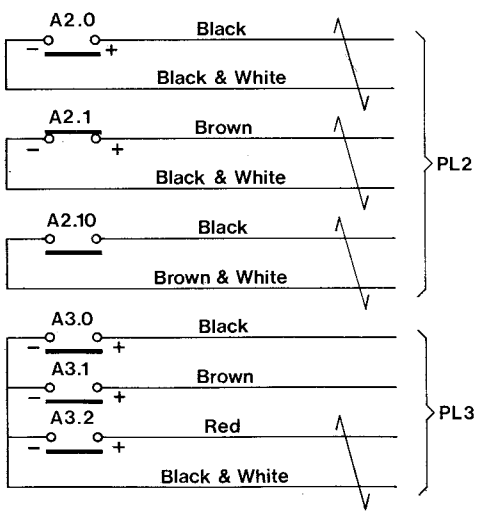
Cable identification : black sleeve distinguishes from similar cables used for lamp driver unit type 8935.

3. USER CONNECTIONS

The plant cables are intended for termination directly on the terminals of the user's switches pushbuttons etc. The user can provide intermediate terminals and additional wire for any devices more than 7 metres of cable run from the unit. The practical limit to such extensions is the noise sensitivity of the wiring which requires careful segregration form noisy wiring

The provision of a common wire for each contact simplifies the wiring to devices with individual isolated switches. If, however, the user's switches are grouped with one side commoned then only one common connection is necessary per group of 8 inputs (states 0 to 7, or 8 to 15). The unused common wires can be cut back and discarded.

4. TYPICAL CIRCUITS



Remarks:-

Unit reference A2/A3 assumes unit connected to first basic I/O ribbon and decoder setting 1.

5. CONFIGURATION DATA.

Configuration data in the preset data table of the host GEM 80 controller defines which addresses are scanned on the basic I/O highway. A contact input unit is equivalent to a panel full of logic input blocks. It will not respond to block presence sensing, so this facility should be suppressed.

6. USER ASSEMBLY OF CABLES.

Some users who have the appropriate tools and facilities may prefer to assemble the plant cables specifically for the application.

Table 3 Pin numbering of plant connectors.

State No.	Pin No.		State No.	Pin No.	
	Common	Signal		Common	Signal
0	3	4	8	19	20
1	5	6	9	21	22
2	7	8	10	23	24
3	9	10	11	25	26
4	11	12	12	27	28
5	13	14	13	29	30
6	15	16	14	31	32
7	17	18	15	33	34

Mechanical interlock : position 1.

Suitable parts manufactured by Yamaichi:-

UFS-34B-01	34 way connector
UFS-34B cover	optional cover
UFS contact	One per wire. Suitable for 16/0.2mm
UFS polarising key	One per connector for mechanical interlock.

ORDERING CODES

1. EQUIPMENT

Contact input unit (excluding cables)	8929
Contact input equipment comprising unit type 8929 and a pair of 7 metre plant cables.	8930

2. LOOSE ITEMS

Printed circuit assembly	8104 4001
Box	8892 4100
Plant cable - 7 metre (for PL2 or PL3)	40Y 2479-20

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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