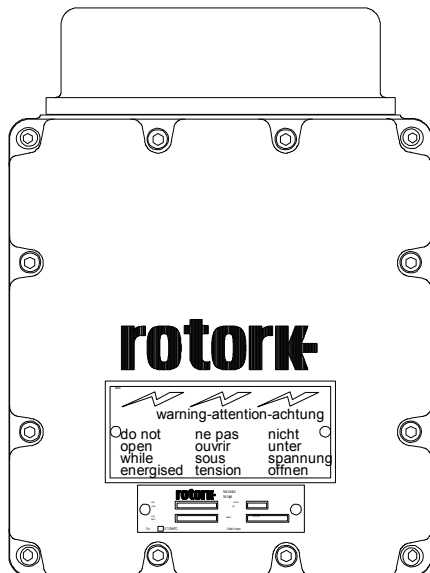


Pakscan General Purpose Field Control Unit Pakbox Mounted (FLP-PB2)



GENERAL DESCRIPTION

The Pakscan General Purpose Field Control Unit (GPFUC) provides a means of controlling actuators, pumps, motors, solenoid valves, mixers, etc., as well as interfacing digital and analogue information between field process devices and a Pakscan two-wire control system. By using a Pakbox FLP-PB2 housing, the GPFUC can be field mounted in Hazardous areas and may be placed close to the device being controlled.

The FLP-PB2 enclosure is manufactured in cast aluminium and includes fixtures for use in mounting the Pakbox on either a wall or pipe bracket. Cable gland access is allowed for on three sides.

The Pakscan GPFUC is sealed in a separate compartment to the equipment terminals to ensure that during installation and operation no moisture can affect the electronic components.

PERFORMANCE SPECIFICATION

Pakscan 2 -Wire Interface

Baud Rate	2400, 1200, 600, 300 or 110
Current	20 mA
Conductors	screened twisted pair

8 off Digital Inputs

Isolation	mutual galvanic isolation
Input Voltage	active 18 V < V_i < 38 V inactive -0.5 V < V_i < 2 V
Pulse input	Input 1
Pulse width	> 20 ms
I/P power supply	internal 24 V at 20 mA max

4 off Digital Outputs

Contacts	changeover
Operation	fleeting or maintained (normally de-energised)
Voltage range	up to 120 V
Max load	60 W, 125 VA, (max 1 A)
Life	10^7 operations at 5 W load

2 off Analogue Inputs

Range	0 to 5 V, or 4 to 20 mA
Resolution	1.2 mV
Thermal stability	100 ppm/°C

1 off Analogue Output

Voltage range	0 to 5 V
Resolution	1.2 mV
Thermal stability	100 ppm/°C
Load resistance	>1 kOhm

Electrical Supply

Supply	110 V ac +/-20% or 230 V ac +10%/-20%, (47-63 Hz)
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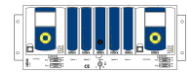
I/O DESCRIPTION

General Purpose Mode

4 off digital outputs, each with one independently addressable C/O contact rated at 60 W, 125 VA, (max 1 A). All contacts can be either fleeting, (300 ms), or maintained (requiring an energise and de-energise command).

1 off analogue output, 0 - 5 V, with 1.2 mV resolution, i.e. 12 bit accuracy.

8 off independent digital inputs, each requiring a volt-free input. Each input can be configured to invert the incoming signal. (Input D1 also acts as a



Pakscan

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pulse counter, up to 9999, provided that the pulse is greater than 20 ms).

The state of the output relays and their action (fleeting or maintained) is reported as are status bits relating to the field unit itself.

2 off analogue inputs sharing a common return, either 4 - 20 mA or 0 - 5 V, reported as a value between 0% and 100%. Both inputs must be the same, i.e. voltage or current. For voltage inputs JP1 and JP2 must be removed. The default setting is for current inputs with JP1 and JP2 fitted.

Alarms

POWR - Reset (on restoration of power)
WDOG - Watchdog failure
MEMF - Memory failure
COMMS - Communication failure

Actuator Mode

Digital control
Open, Stop, Close, ESD (ESD option is not available on all actuator types).

Position control
Over range 0% to 100%, (not available on all actuator types).

Digital feedback
The field unit reports the following status bits, (some of the options are not available on all actuator types):
OAS - open limit switch
CAS - closed limit switch
STOP - motor stopped
MRUN - motor running
MRO - motor running in open direction
MRC - motor running in closed direction
EXT - status of an external digital signal, (only available when position control is **not** used).
Further status bits relating to the field unit are also reported, i.e. loopback on, new alarm and alarm.

Analogue feedback
Valve position over range 0% to 100%, (not available on all actuator types).

Alarms
POWR- power on reset (on restoration of power)
WDOG - watchdog failure
MEMF - memory failure

COMMS - communication failure
CNA - local control selected
MREL - monitor relay tripped
THERM - thermostat tripped
LSTOP - local stop selected
(some or all of the above may not be available depending on actuator type).

Derived alarms

SFAIL - motor start or stop failure
VOBS - valve obstruction detected, torque tripped
VJAM - valve stuck detected, torque tripped
MOP - valve moved to open limit manually
MCL - valve moved to closed limit manually
MOPG - valve moved from closed limit manually
MCLG - valve moved from open limit manually
EOT - motor running at end of travel
(some or all of the above may not be available depending on actuator type).

MECHANICAL DESCRIPTION

Enclosure

Cast aluminium (BS1490, LM25) with Rotork standard grey paint finish, BS4800-00A13, suitable for wall mounting using fixing plates or with clamps for 2" pipe mounting.
Weatherproof to IEC 529, IP68.

Approvals

Hazardous area approval to EC directive 94/9/EC EN50018 EExd. IIBT4.

Alternative Approvals

Increase safety terminations EN50019EExde
Factory Mutual approval:

Class 1 - Groups C and D division 1 locations according to NEC Article 500.

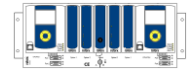
CSA Hazardous approval:

Class 1 - Group C & D

Class 2 - Group E, F & G

Terminals

TS35 DIN rail mounted cage clamp terminals suitable for up to 1.5 mm² conductors for power and signals. Double terminations are provided for power supply, earth & loop connections. An external 6 mm tapped hole is also provided for earthing purposes.



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Conduit entries

A,B,C, & D = 4 off max. 40 mm, 1.5" ASA/NPT or PG29

E to Y = 20 off max 20mm, 0.75" ASA/NPT or PG13.5.

See installation drawings for cable entry locations.

Environmental specification

Operating temperature, -30° to +70°C

Storage temperature, -50° to +85°C

Humidity, 5% to 95% R.H. non-condensing

Vibration, 0.75 g (0.5 Hz to 300 Hz)

Ordering Details

With all orders it is necessary to specify the supply voltage for the field unit, the enclosure approval required, the FLP-PB2 mounting arrangement and the conduit entry holes to be drilled, together with their size. Eight holes are included in the basic price and additional holes are extra.

Example:

FLP - PB2 - X -XXX - X - XXXX XXXX

Specify the hole position and size required

Fixings

0 = no brackets

1 = wall brackets

2 = pipe brackets

Certification

xd = EExd

xde = EExde

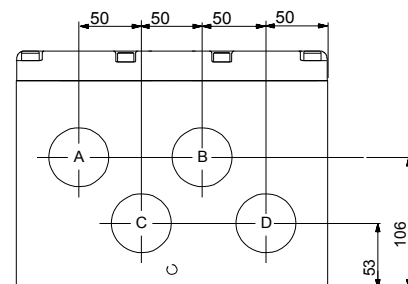
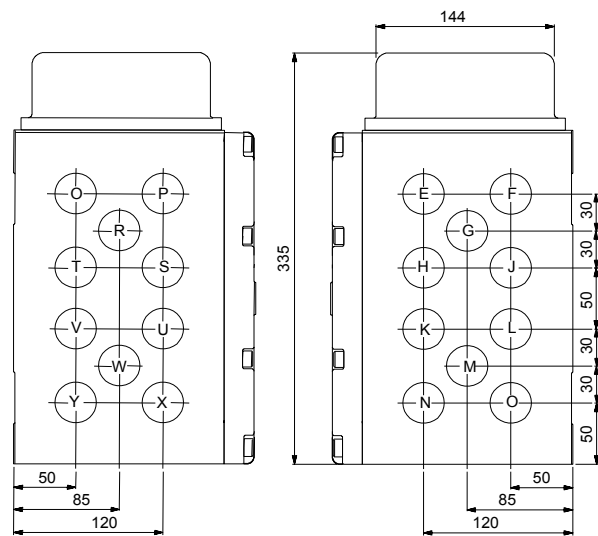
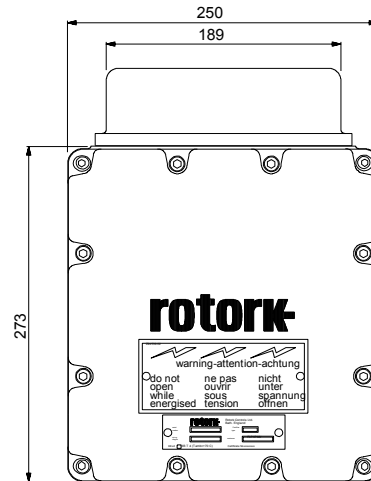
Supply Voltage

1 = 110 V ac

2 = 230 V ac

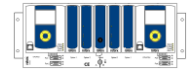
FLP-PB2- 1 - xd - 1 - A15, B15, C15, E15, F15
H15, J15, K15

110 V ac supply, EExd certified, supplied with wall brackets, holes drilled for 15mm conduits - A B C E F H J K



MAXIMUM CONDUIT ENTRY SIZES

LOCATION	mm	ASA/NPT	PG
A,B,C,D.	40.00	1.5"	29
E,F,G,H,J, K,L,M,N,O, P,Q,R,S,T, U,V,W,X,Y.	20.00	0.75"	13.5



Pakscan General Purpose Field Control Unit Pakbox Mounted (PB2-FLP)

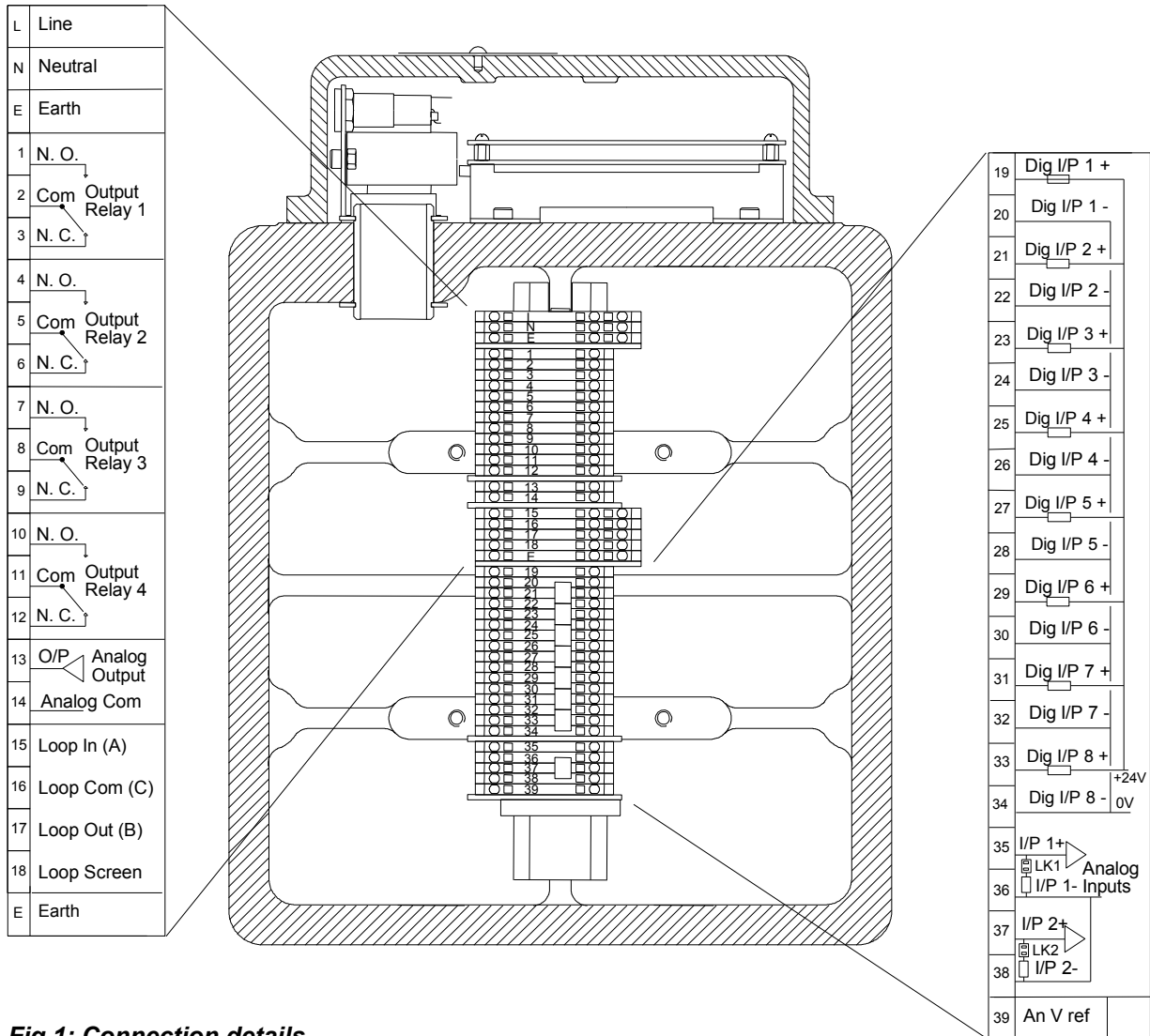


Fig 1: Connection details

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UK
Rotork PLC

Tel: +44 (0) 1225 733 200
Fax: +44 (0) 1225 333 467
e-mail: mail@rotork.com

USA
Rotork Controls Inc.

Tel: +1 (585) 247 2304
Fax: +1 (585) 247 2308
e-mail: info@rotork.com