

Contents

1	Introduction	2
2	Installation	4
2.1	Connector pin-out	5
2.2	Electrical interfaces	9
3	Configuration	10
4	COSMOS status monitoring	12
5	Trouble shooting	14
6	Specification	16
7	Ordering information	18

1 Introduction

The 2550 is an ICON module which provides an input/output interface between equipment with hard wired (GPI) status reporting capability and Pro-Bel's COSMOS software based configuration and status monitoring system.

The card provides up to thirty two GPI inputs and eight GPI outputs.

COSMOS software allows the inputs to be individually named and to be configured to generate warnings and alarms. The outputs follow the same alarm signalling as the optional PC mounted GPI (parallel I/O) card.

The full feature set is as follows:

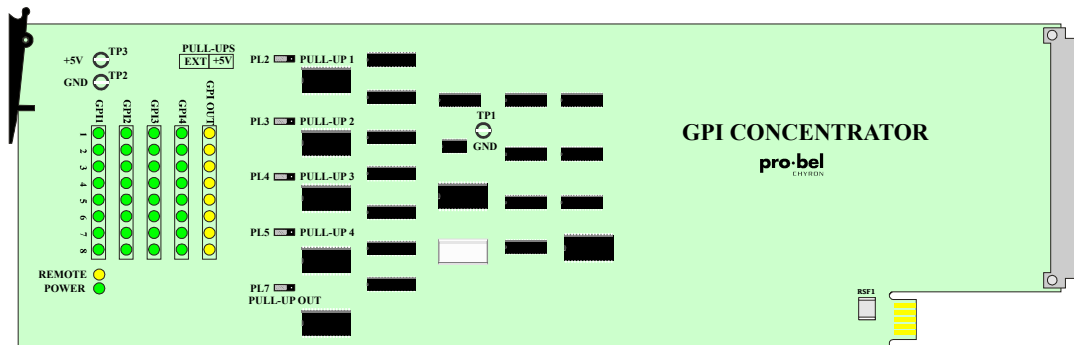
- 32 GPI open collector inputs
- 8 GPI open collector outputs
- jumper configuration of internal or external pull-up voltages
- on card LEDs indicate the status of all inputs and outputs
- compatible with COSMOS status reporting and control

The 2550 is designed to fit in the 1050 3U and 1051 1U ICON modular product rackframes.



2 Installation

The 2550 GPI Concentrator is used with the 20mm K2550-2 and K2550-2W rear connectors and fits in the 1050 3U and 1051 1U ICON modular product rackframes.

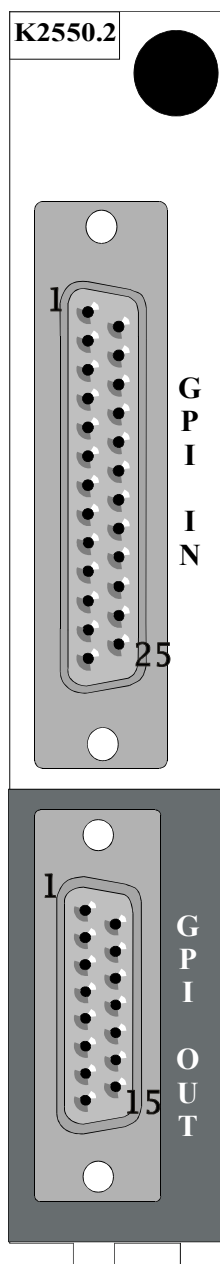


The 2550 GPI Concentrator

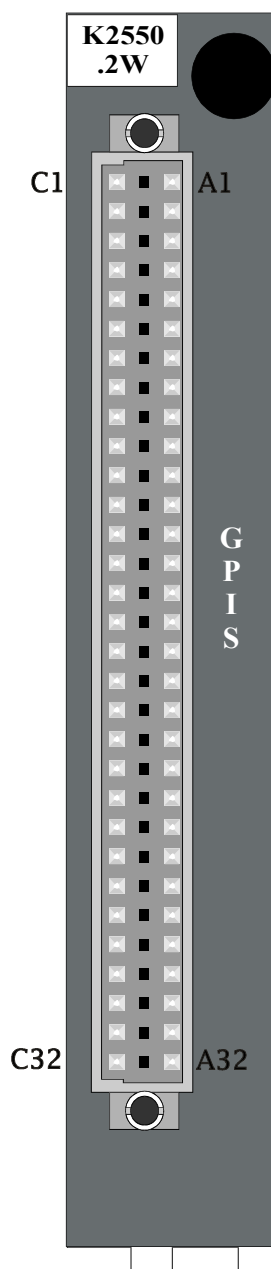
For module and rear connector installation please refer to the appropriate ICON rackframe section of the manual.

2.1 Connector pin-out

There are two optional rear connector panels, both 20mm wide. K2550-2 supports up to sixteen inputs and eight outputs and uses one D25 and one D15 connector. K2550-2W uses a single 64 way DIN-41612 connector which supports all inputs and outputs.



K2550.2 rear panel



K2550.2W rear panel

The next three tables show the pin connections for both rear panels.

The following signals are available as part of the DIN 41612 on the K2550-2W rear connector and the D25 on the K2550-2 rear connector.

Connector pin-out table		
Signal	DIN 41612(Cable)	D25
I/p1	2A	1
I/p2	2C	2
pull-up2 (9-16)	5C	3
I/p3	6A	4
I/p4	6C	5
I/p5	10A	6
I/p6	10C	7
Gnd	11C	8
I/p7	14A	9
I/p8	14C	10
Gnd	17C	11
I/p15	18A	12
I/p16	18C	13
I/p9	4A	14
I/p10	4C	15
pull-up1(1-8)	5A	16
I/p11	8A	17
I/p12	8C	18
I/p13	12A	19
I/p14	12C	20
Gnd	16A	21
Gnd	16C	22
Gnd	11A	23
Gnd	20A	24
Gnd	20C	25

Note: Pin numbers of the panel mounted DIN 41612 plug are reversed (1-32 etc) compared to the cable ended socket. This is due to an inherent error in the DIN 41612 connector specification.

The following signals are available on the DIN 41612 on the K2550-2W rear connector and the D15 on the K2550-2 rear connector.

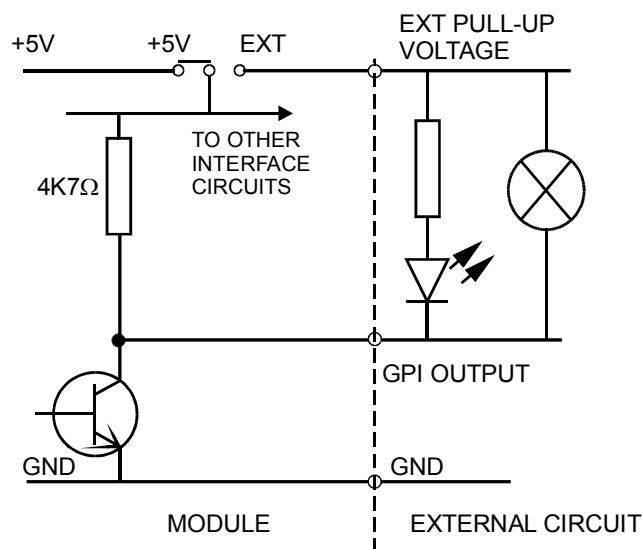
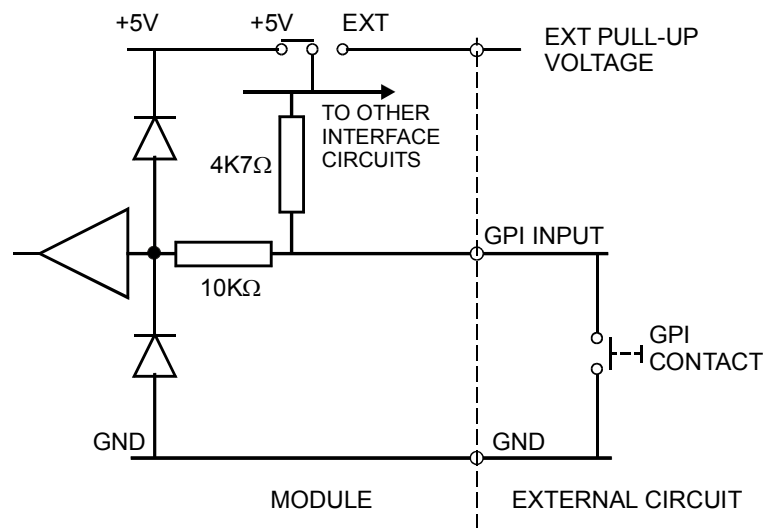
Connector pin-out table (continued)		
Signal	DIN 41612(Cable)	D15
o/p2	22C	1
Gnd	17A	2
o/p3	24A	3
o/p6	26C	4
pull-up5(o/p)	23A	5
o/p7	28A	6
Gnd	30C	7
Gnd	29A	8
o/p1	22A	9
o/p4	24C	10
Gnd	23C	11
o/p5	26A	12
o/p8	28C	13
Gnd	29C	14
Gnd	30A	15

The following signals are only available with the DIN 41612 on the K2550-2W rear connector.

Connector pin-out table (continued)	
Signal	DIN 41612 (Cable)
Gnd	1A
I/p17	3A
I/p19	7A
I/p21	9A
I/p23	13A
pull-up3 (17-24)	15A
I/p25	19A
I/p27	21A
I/p29	25A
I/p31	27A
Not used	31A
Not used	32A
Not used	1C
I/p18	3C
I/p20	7C
I/p22	9C
I/p24	13C
pull-up4 (25-32)	15C
I/p26	19C
I/p28	21C
I/p30	25C
I/p32	27C
Not used	31C
Not used	32C

2.2 Electrical interfaces

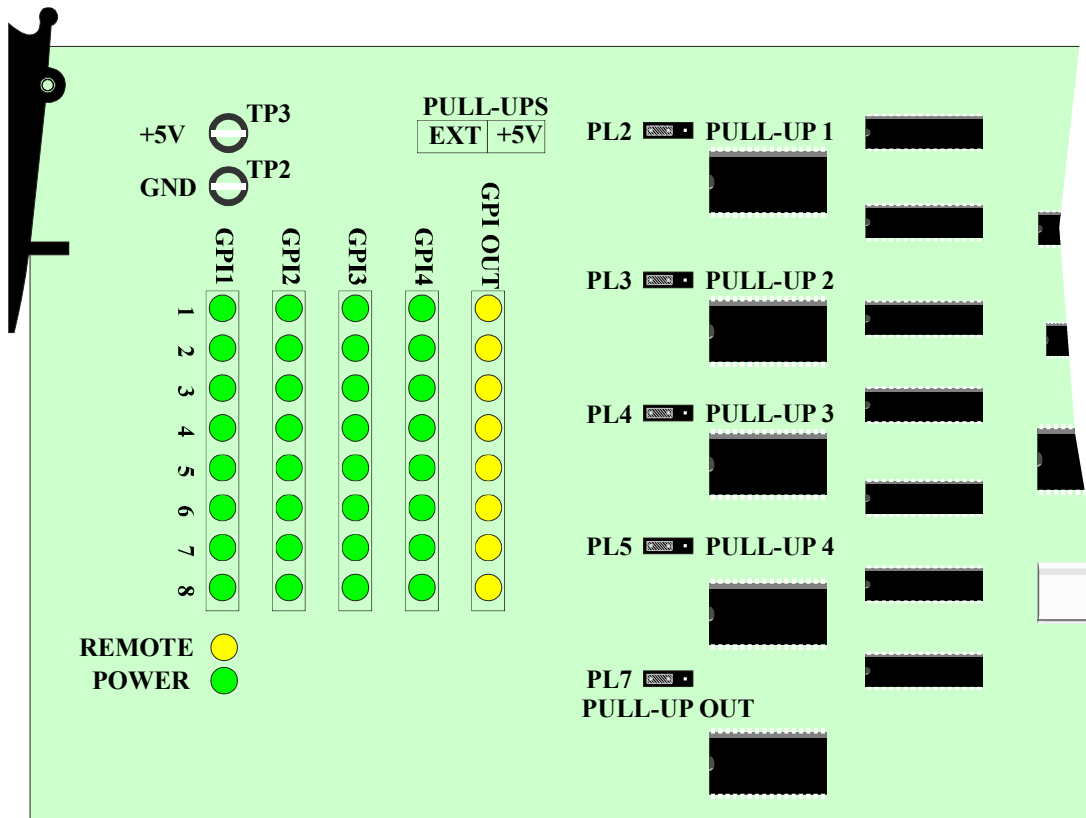
The electrical interfaces of both input and output are of the open collector type and in the inactive state are pulled high by internal 4K7ohm resistors. In the active state the I/O lines are pulled down to ground. The voltage to which the signal lines are pulled up may either be +5V from the module or an external positive voltage of up to 30V dc. The selection of internal or external pull-up voltage is made by five pairs of jumpers on the card, four for the inputs in groups of eight and the fifth for the outputs. See Chapter 3, Configuration, for details of the jumpers.



3 Configuration

The only configuration required is the setting of the jumpers to select internal or external pull-up voltages. These are shown on the diagram and are assigned as follows:-

- PL2 Inputs 1-8
- PL3 Inputs 9-16
- PL4 Inputs 17-24
- PL5 Inputs 25-32
- PL7 Outputs 1-8



Internal /external pull-up jumpers



4 COSMOS status monitoring

The 2550 module will provide the following information to the COSMOS status monitoring controller (if fitted):

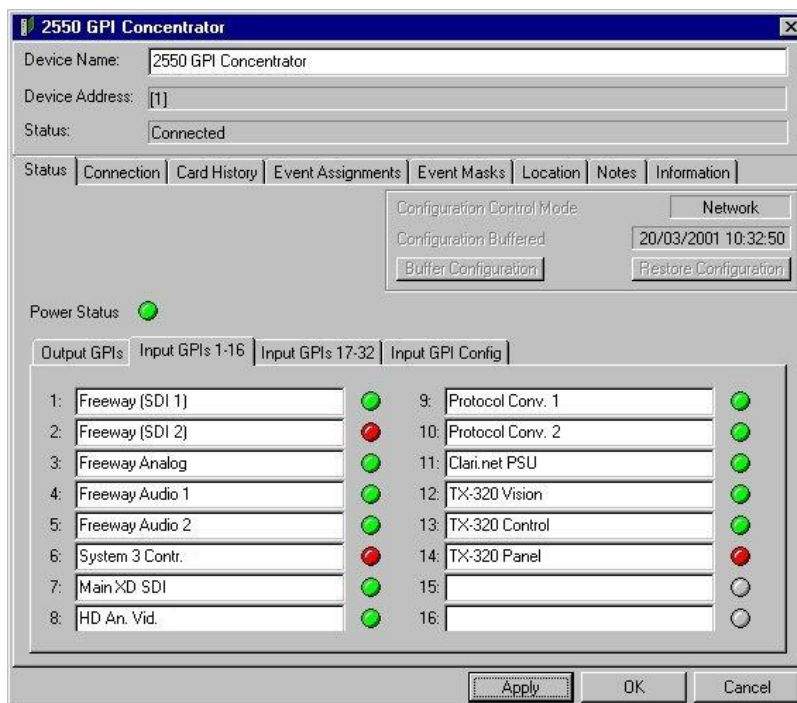
- module present
- power OK

In addition, the module is programmed with the following information, which can be read by the status monitoring controller:

- Module type
- Module bar code
- Module issue no

For further details of the Pro-Bel status monitoring system please refer to the COSMOS status monitoring manual.

Due to its particular function it is permanently set in remote mode so that its GPI outputs can only be set from the COSMOS application programme.

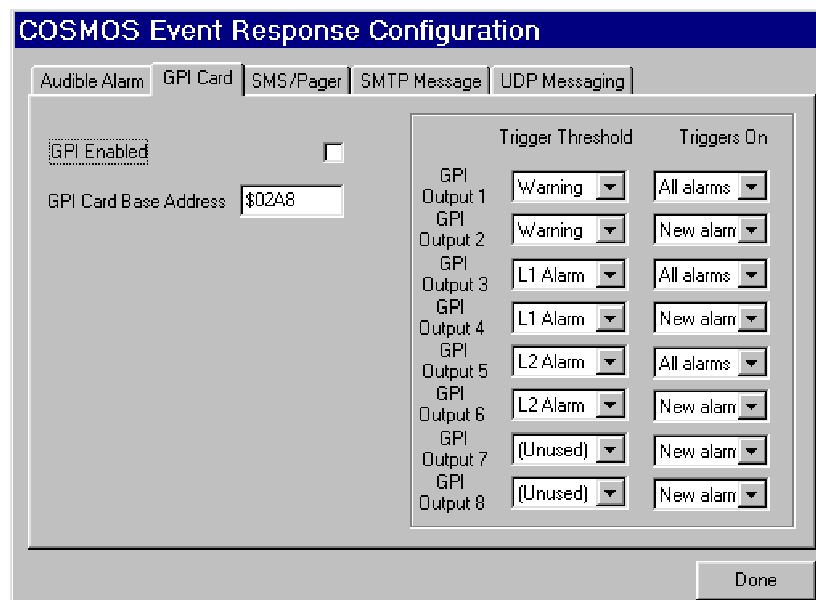


COSMOS 2550 Status (GPI) configuration

The GPI inputs can be configured to be active high or active low and programmed with a descriptive text string. High or low refers to the GPI input pin voltage which generates the active condition which generates alarms. An active input is represented in the 2550 COSMOS status window by a red LED and an inactive input by a green LED.

Each input may also be disabled. The alarm assignment form can be set to generate an alarm or warning if any enabled input goes into the active state.

The GPI outputs mirror the settings for the PC mounted GPI card which may be reached via the Alarms menu.



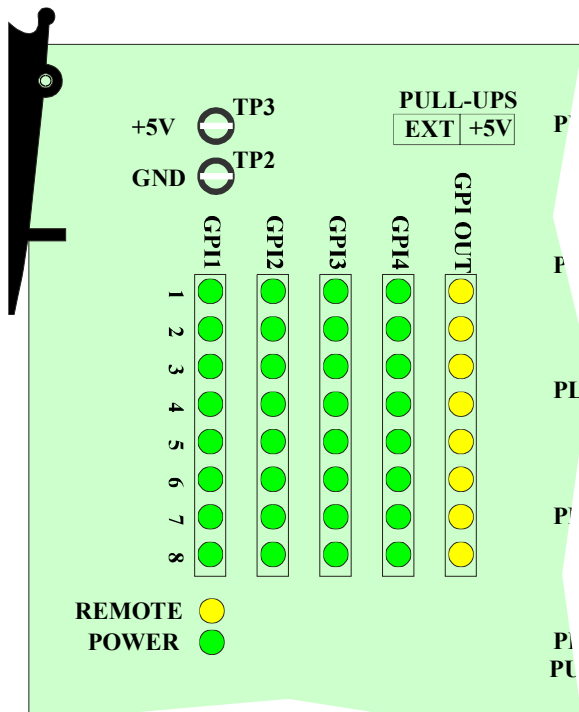
COSMOS Event Response (GPI Alarms) configuration

5 Trouble shooting

Status LEDs

The following LED indicators are provided on the module: -

2550 LED status LEDs			
Function	LED	Colour	Meaning
Block GPI 1	LEDs 1-8	Green	GPI Inputs 1-8 active (low)
Block GPI 2	LEDs 1-8	Green	GPI Inputs 9-16 active (low)
Block GPI 3	LEDs 1-8	Green	GPI Inputs 17-24 active (low)
Block GPI 4	LEDs 1-8	Green	GPI Inputs 25-32 active (low)
Block GPI Out	LEDs 1-8	Yellow	GPI Outputs 1-8 active (low)
Power		Green	Power OK
Remote		Yellow	Remote mode (permanent)



Trouble shooting checks

The green card edge POWER LED is not lit

- check the PSU indicator to confirm that there is power to the frame
- check the resettable fuse protecting the card - do this by removing the power to the card for about 30 seconds then restoring the power
- if necessary, refer to the power supply trouble shooting guide in the appropriate ICON rackframe manual section

There are no GPI outputs or inputs

- ensure that the green power LED on the front of the card is lit
- check that GPI cabling is intact and correctly wired
- check that internal or external pull-up voltage is correct
- check that the appropriate COSMOS GPI assignments are enabled

6 Specification

Inputs

Number and type	32 open collector GPI, 4K7 Ohm pull-up resistors to internal +5Vdc or to external positive supply, 0-30Vdc
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Outputs

Number and type	8 open collector GPI, 4K7 Ohm pull-up resistors to internal +5Vdc or to external positive supply, 0-30Vdc
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Maximum sink current	50mA
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7 **Ordering information**

Part number**Description**

ICO-2550-2000

GPI Concentrator for COSMOS, 16 in & 8 out on
D connectors, 20mm

ICO-2550-20W0

GPI Concentrator for COSMOS, 32 in & 8 out on
DIN 41612 connector, 20mm

