L0M80101 Pempek OBP ON/OFF Solenoid Module Ex ib Intrinsically Safe I/O Type A

The Pempek OBP Mining PLC I.S. I/O Module provides intrinsically safe (Group I Ex ib) input and output resources in a single, compact unit.

A unique fibre-optic communications interface means that the module and dedicated I.S power supply can be conveniently segregated into its isolated zone.

The fibre-optic link between the module and an Pempek OBP processor module provides real-time control and monitoring of all I/O points.

This solution is ideal for mobile mining equipment where limited installation space must be managed.

Uniquely Keyed Type Connectors to prevent incorrect machine installation.

The module is Dual Pempek OBP Type which complies with AS/NZS 4240 standard.

As per standard, every output includes two switches A&B in series with monitoring feedbacks from both.

Extra safety is achieved by using two potted boards where each includes main and watchdog processors monitoring the correctness of executed main software code.

Module Primary board – A18_B0L32
Module Secondary board - A22_B0L3G

Mounting options can vary depending on customer requirements.

Specifications

- **Module Type:** Intrinsically Safe Input / Output with Display
- **Supply:** 12VDC (+/- 10%) / 20 Watts (Max) from Approved I.S. Power Supply
- **Data Communications:** CAN interface over Pempek OBP Fibre
- **Operating Temperature:** -20°C to +85°C all industrial components
- **Sensors:** 2 x Resolver Sensors - Litton or Siemens
- **Inputs 1:** 12 x 12VDC Digital Inputs
- **Inputs 2:** 12 x 4-20mA Analog Inputs
- **Inputs 3:** 4 x 0-2.8V Analog Inputs
- **Inputs 4:** 4 x Frequency Counters (to 5KHz)
- **Outputs:** 24 x I.S. 12VDC On/Off Outputs (1A Maximum for each Output)
- **Connector 1:** Pempek OBP Fibre
- **Connector 2:** Pempek OBP A18 (12VDC I.S. Supply and Solenoid Outputs)
- **Connector 3:** Pempek OBP A22 (Digital Inputs, Analog Inputs, Resolvers and Counters)

Heavy Duty Enclosure
- Electroless Nickel Plated
- Rugged Construction

Mass
- 6.5kg (14.3lb)

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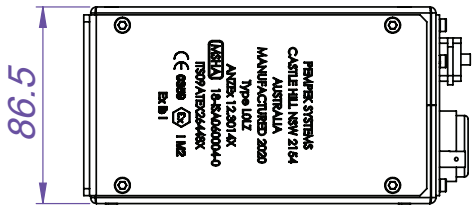

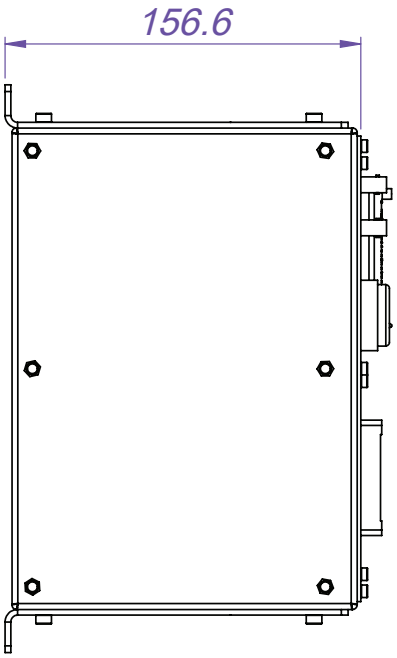

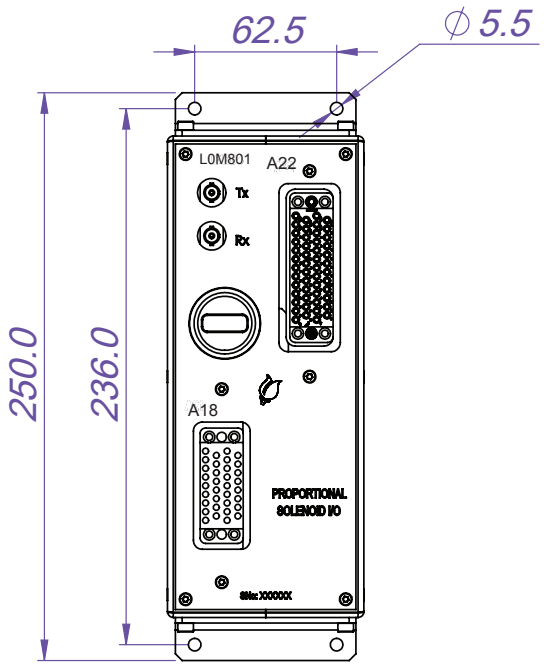

Dimensions (mm)

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Display Diagnostics

The integral 4 characters LED Matrix display provides the end user with some basic diagnostics as to the operation of the module. These messages are as follows:

Message Explanation Result

ON
Omni Flashing Indicates nominal operation and signifies that CAN communications have been established with a host. Normal Operation Permitted

CAN
This Indicates CAN Communication has not been established or has been lost. Outputs Disabled

FEBK
This Indicates that internal are NOT congruent with requested outputs. This typically occurs when an output has been requested but has failed to operate indicating a supply failure or wiring error. Outputs Disabled

SHRT
This Indicates that a short-circuit condition has been detected a requested output. This short-circuit could be external (most probable) or internal

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CONNECTOR A18

Number	Unit / PCB VMCT-34F Female Board Mount PIN	L0M80101 Name
1	A	SOLENOID-5
2	B	SOLENOID-11
3	C	SOLENOID-2
4	D	SOLENOID-8
5	E	SOLENOID-4
6	F	SOLENOID-10
7	H	SOLENOID-1
8	J	SOLENOID-7
9	K	SOLENOID-3
10	L	SOLENOID-9
11	M	MODULE SELECT-1
12	N	SOLENOID-6
13	P	SOLENOID-12
14	R	SOLENOID-13
15	S	MODULE SELECT-2
16	T	SOLENOID-14
17	U	SOLENOID-15
18	V	SOLENOID-16
19	W	MODULE SELECT-3
20	X	SOLENOID-17
21	Y	SOLENOID-18
22	Z	SOLENOID-19
23	AA	MODULE SELECT-4
24	BB	SOLENOID-20
25	CC	
26	DD	SOLENOID-21
27	EE	
28	FF	SOLENOID-22
29	HH	
30	JJ	SOLENOID-23
31	KK	
32	LL	SOLENOID-24
33	MM	0VIS
34	NN	12VIS

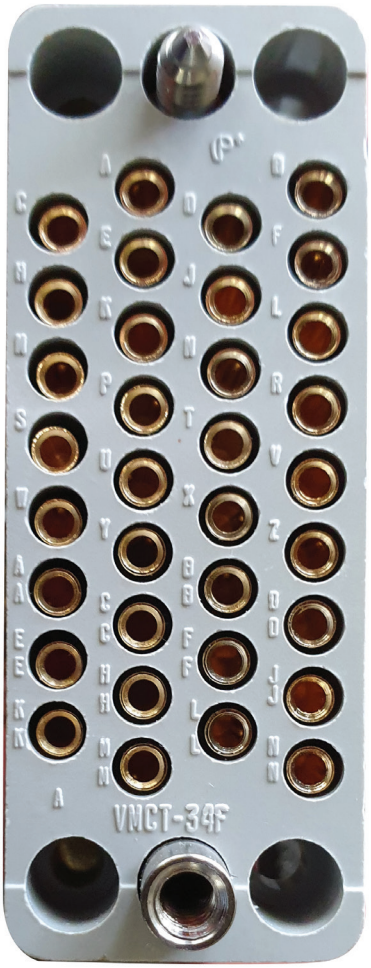

Image depict coding pins required

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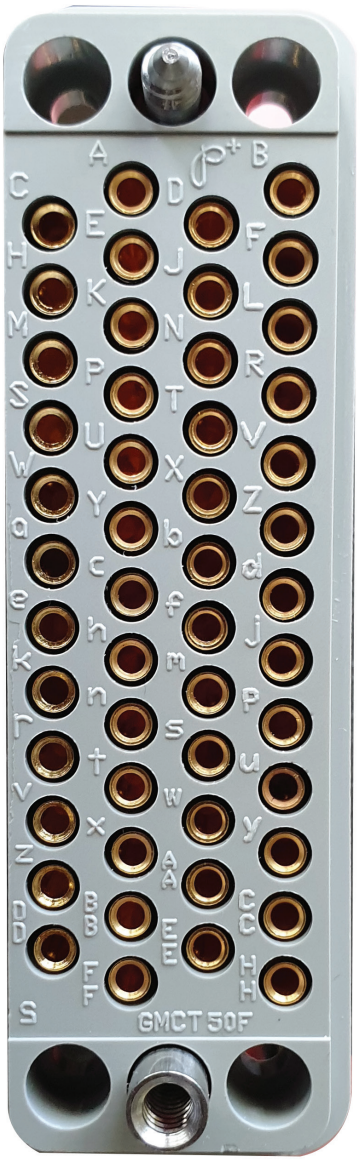
CONNECTOR A22

Number	Unit / PCB GMCT50F Female Board Mount PIN	L0M80101 Name
1	A	INPUT-COUNTER-1
2	B	INPUT-COUNTER-2
3	C	INPUT-COUNTER-3
4	D	INPUT-COUNTER-4
5	E	ANALOG-16 0-2.8 V
6	F	RESOLVER-1(REF-2)
7	H	ANALOG-15 0-2.8 V
8	J	ANALOG-14 0-2.8 V
9	K	ANALOG-13 0-2.8 V
10	L	RESOLVER-1(REF-1)
11	M	ANALOG-12 4-20mA
12	N	ANALOG-11 4-20mA
13	P	ANALOG-10 4-20mA
14	R	RESOLVER-1(GND-COS)
15	S	ANALOG-9 4-20mA
16	T	ANALOG-8 4-20mA
17	U	ANALOG-7 4-20mA
18	V	RESOLVER-1(COS)
19	W	ANALOG-6 4-20mA
20	X	ANALOG-5 4-20mA
21	Y	ANALOG-4 4-20mA
22	Z	RESOLVER-1(SIN)
23	a	ANALOG-3 4-20mA
24	b	ANALOG-2 4-20mA
25	c	ANALOG-1 4-20mA
26	d	RESOLVER-1(GND-SIN)
27	e	INP-12
28	f	INP-11
29	h	INP-10
30	j	RESOLVER-2(REF-2)
31	k	INP-9
32	m	INP-8
33	n	INP-7
34	p	RESOLVER-2(REF-1)
35	r	MODULE SELECT-3
36	s	INP-6
37	t	INP-5
38	u	RESOLVER-2(GND-COS)
39	v	MODULE SELECT-4
40	w	INP-4
41	x	INP-3
42	y	RESOLVER-2(COS)
43	z	MODULE SELECT-1
44	AA	INP-2
45	BB	INP-1
46	CC	RESOLVER-2(SIN)
47	DD	MODULE SELECT-2
48	EE	RESOLVER-2(GND-SIN)
49	FF	0VIS
50	HH	



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Fibre Optic Patch Cables

Part Number	Description
H0LW0401	Fibre Optic Patch ST-ST Multi-Mode
H0M10101	Connector Assembly Fibre 8 way 7m
H0M10201	Connector Assembly Fibre 8 way 10m
H0M10301	Connector Assembly Fibre 8 way 1m
H0M10401	Connector Assembly Fibre 8 way 4m
H0M10801	Connector Assembly Fibre 8 way 8m
H0M10901	Connector Assembly Fibre 8 way 11m
H0M11001	Fibre Optic Patch Assembly 8 way 3m
H0M11201	Connector Assembly Fibre 8 way 12.5m

Image above Fibre Optic Patch ST-ST Multi-Mode

Specifications

- **Product Type:** Pre-manufactured cable assembly
- **Construction:** FIbre Optic with ST terminations
- **Connector 1 :** Fibre Optic Tx
- **Connector 2:** Fibre-optic Rx
- **Pin Type:** ST Fibre Plugs
- **Conductor Type:** Multi-mode Fibre-optic
- **Insulation Rating:** N/A
- **Temperature Rating:** -40°C to 85°C

Connector Assembly

Part Number	Description
H0LW0101	Connector Assembly A18 2.2m
H0LW0801	Connector Assembly A18 1.5m
H0LW0802	Connector Assembly A18 1.5m Small Plug
H0LW0803	Connector Assembly A18 1.5m Fully Populated
H0LW0801	Connector Assembly A18 1.5m
H0LZ0201	Connector Assembly A22 2.2m
H0LZ0401	Connector Assembly A22 1.5m
H0LZ0402	Connector Assembly A22 1.5m (Small Case)
H0LZ0403	Connector Assembly A22 1.5m Fully Populated

Specifications

- **Product Type:** Pre-manufactured cable assembly
- **Construction:** Connector with flying leads (pigtail)
- **Pin Type:** Male (Gold-plated)
- **Conductor Type:** PVDF Tinned Stranded Wire
- **Insulation Rating:** 600 volts
- **Temperature Rating:** -65 to 105 C
- **Recommended Tools:** PVDF / Teflon Insulation Stripping Tool

Cable options can vary depending on customer requirements.