

L0LW0101 Obelix Solenoid Module Ex ib Intrinsically Safe I/O Type A

The Obelix 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 Obelix 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 Obelix 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 - A19_A20_B0L3J



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 Obelix Fibre
- **Operating Temperature:** -20°C to +85°C all industrial components
- **Inputs 1:** 24 x I.S. Digital Inputs (12VDC)
- **Inputs 2:** 16 x I.S. Analog Inputs (4-20 mA)
- **Inputs 3:** 16 x I.S. Namur Inputs
- **Outputs:** 24 x I.S. 12VDC On/Off Outputs (1A Maximum for each Output)
- **Connector 1:** Obelix Fibre
- **Connector 2:** Obelix A18 (12VDC I.S. Supply and Solenoid Outputs)
- **Connector 3:** Obelix A19 (12VDC I.S. Supply and Namur Inputs)
- **Connector 4:** Obelix A20 (Digital Inputs and Analog Inputs)

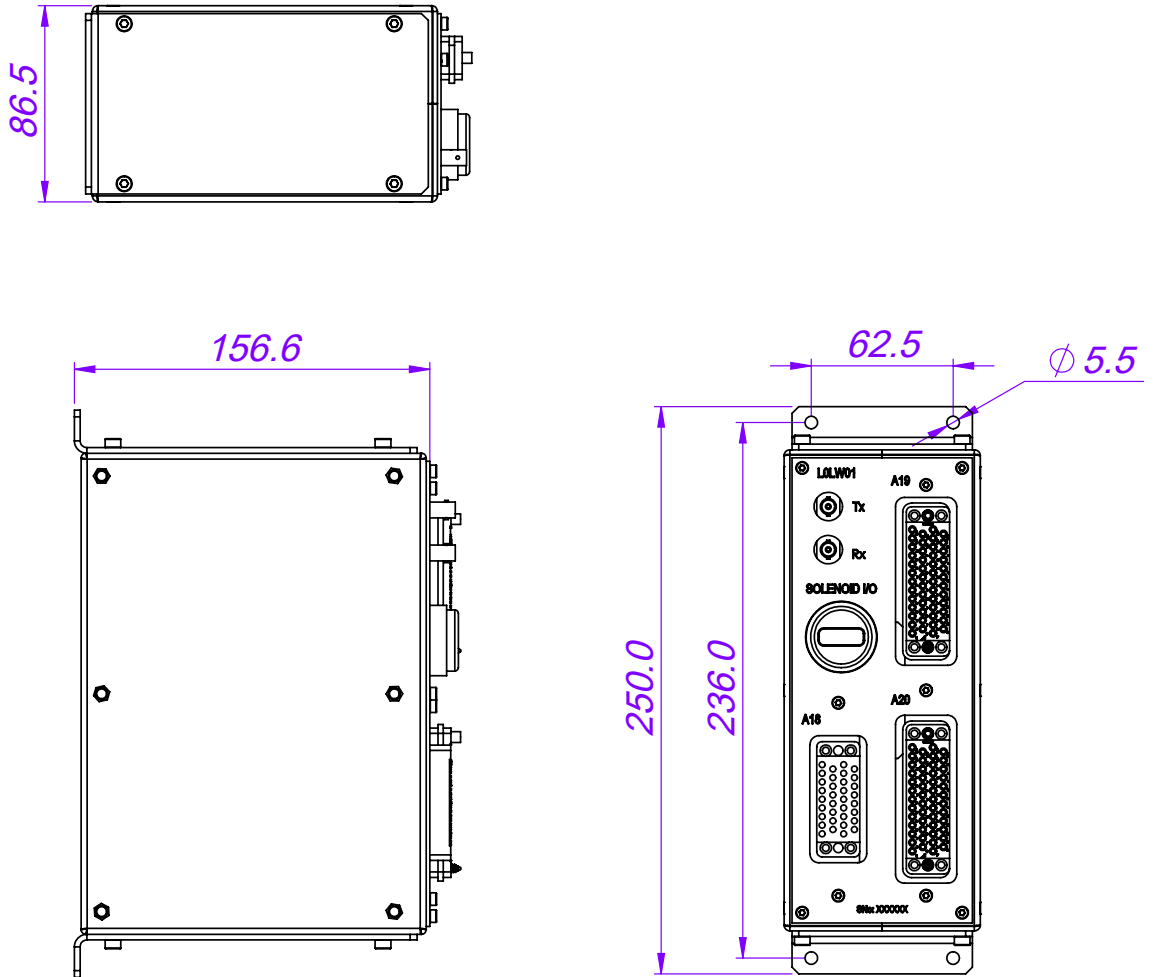
Heavy Duty Enclosure

- 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:

ON - No Faults

FEBK - Outputs Feedback Fault

SHRT - Output Short Fault

CAN - Fibre-optic CAN Bus Fault

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 is NOT congruent with requested outputs. This typically occurs when 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 as a requested output. This short-circuit could be external (most probable) or internal Outputs Disabled



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CONNECTOR A18

| Number | Unit / PCB VMCT-34F Female Board Mount PIN | L0LW0101 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 | OVIS |
| 34 | NN | 12VIS |



Image depict coding pins required

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CONNECTOR A19

| Number | Unit / PCB GMCT50F Female Board Mount PIN | L0LW0101 Name |
|--------|----------------------------------------------------|-------------------|
| 1 | A | SUPPLY-PROX-SW-1 |
| 2 | B | ANALOG-1 |
| 3 | C | SUPPLY-PROX-SW-2 |
| 4 | D | ANALOG-2 |
| 5 | E | SUPPLY-PROX-SW-3 |
| 6 | F | ANALOG-3 |
| 7 | H | |
| 8 | J | |
| 9 | K | SUPPLY-PROX-SW-4 |
| 10 | L | ANALOG-4 |
| 11 | M | |
| 12 | N | |
| 13 | P | SUPPLY-PROX-SW-5 |
| 14 | R | ANALOG-5 |
| 15 | S | |
| 16 | T | |
| 17 | U | SUPPLY-PROX-SW-6 |
| 18 | V | ANALOG-6 |
| 19 | W | SUPPLY-PROX-SW-7 |
| 20 | X | ANALOG-7 |
| 21 | Y | SUPPLY-PROX-SW-8 |
| 22 | Z | ANALOG-8 |
| 23 | a | |
| 24 | b | |
| 25 | c | SUPPLY-PROX-SW-9 |
| 26 | d | ANALOG-9 |
| 27 | e | |
| 28 | f | |
| 29 | h | SUPPLY-PROX-SW-10 |
| 30 | j | ANALOG-10 |
| 31 | k | |
| 32 | m | |
| 33 | n | SUPPLY-PROX-SW-11 |
| 34 | p | ANALOG-11 |
| 35 | r | SUPPLY-PROX-SW-12 |
| 36 | s | ANALOG-12 |
| 37 | t | SUPPLY-PROX-SW-13 |
| 38 | u | ANALOG-13 |
| 39 | v | |
| 40 | w | |
| 41 | x | SUPPLY-PROX-SW-14 |
| 42 | y | ANALOG-14 |
| 43 | z | |
| 44 | AA | |
| 45 | BB | SUPPLY-PROX-SW-15 |
| 46 | CC | ANALOG-15 |
| 47 | DD | SUPPLY-PROX-SW-16 |
| 48 | EE | ANALOG-16 |
| 49 | FF | OVIS |
| 50 | HH | 12VIS |

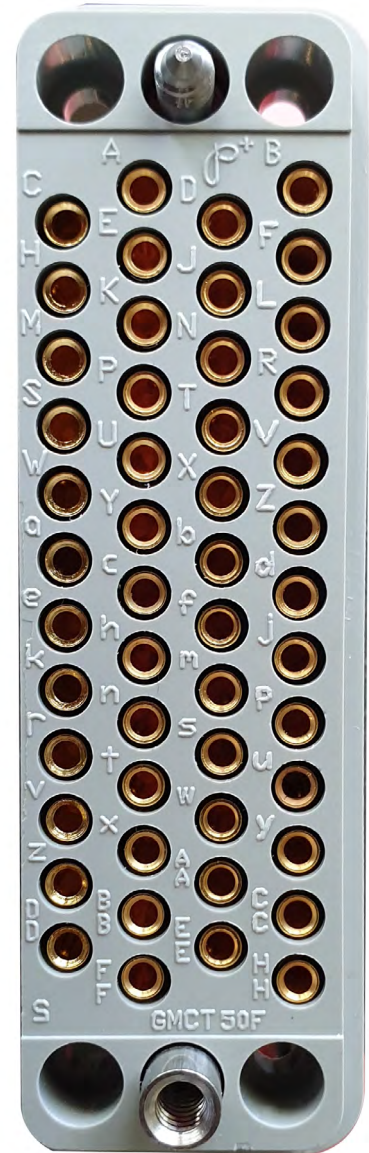


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CONNECTOR A20

| Number | Unit / PCB GMST50F Female Board Mount PIN | L0LW0101 Name |
|--------|----------------------------------------------------|----------------------|
| 1 | A | INP1 |
| 2 | B | INP2 |
| 3 | C | INP3 |
| 4 | D | INP4 |
| 5 | E | INP5 |
| 6 | F | INP6 |
| 7 | H | INP7 |
| 8 | J | INP8 |
| 9 | K | INP9 |
| 10 | L | INP10 |
| 11 | M | INP11 |
| 12 | N | INP12 |
| 13 | P | INP13 |
| 14 | R | INP14 |
| 15 | S | INP15 |
| 16 | T | INP16 |
| 17 | U | INP17 |
| 18 | V | INP18 |
| 19 | W | INP19 |
| 20 | X | INP20 |
| 21 | Y | INP21 |
| 22 | Z | INP22 |
| 23 | a | INP23 |
| 24 | b | INP24 |
| 25 | c | |
| 26 | d | MODULE SELECT-4 |
| 27 | e | |
| 28 | f | MODULE SELECT-3 |
| 29 | h | |
| 30 | j | MODULE SELECT-2 |
| 31 | k | |
| 32 | m | MODULE SELECT-1 |
| 33 | n | AN17 |
| 34 | p | AN18 |
| 35 | r | AN19 |
| 36 | s | AN20 |
| 37 | t | AN21 |
| 38 | u | AN22 |
| 39 | v | AN23 |
| 40 | w | AN24 |
| 41 | x | AN25 |
| 42 | y | AN26 |
| 43 | z | AN27 |
| 44 | AA | AN28 |
| 45 | BB | AN29 |
| 46 | CC | AN30 |
| 47 | DD | AN31 |
| 48 | EE | AN32 |
| 49 | FF | |
| 50 | HH | OVIS |

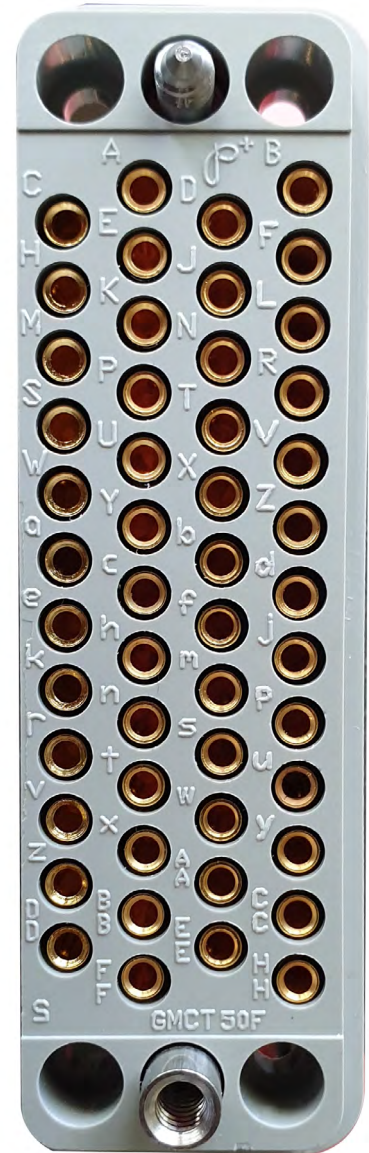


Image depict coding pins required

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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 |
| H0LW0201 | Connector Assembly A19 2.2m |
| H0LW0301 | Connector Assembly A20 2.2m |
| H0LW0801 | Connector Assembly A18 1.5m |
| H0LW0802 | Connector Assembly A18 1.5m Small Plug |
| H0LW0803 | Connector Assembly A18 1.5m Fully Populated |
| H0LW0901 | Connector Assembly A20 5m |
| H0LW0902 | Connector Assembly A20 1.5m |
| H0LW0903 | Connector Assembly A20 Fully Populated 1.5m |



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.