L0R40201 Obelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B

The L0R40201 Obelix Mining PLC I.S. I/O Solenoid Driver 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 IS 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 typed 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 - B18_B0L32
Module Secondary board - B48_B49_B0R4J

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:** 32 x I.S. Digital Inputs (12VDC)
- **Inputs 2:** 10 x I.S. Analog Inputs (4-20 mA)
- **Inputs 3**: 4 x I.S. Frequency Counter Inputs (Namur Type, 5 kHz Max)
- **Inputs 4:** 2 x I.S. Resolver Sensor Inputs (industry standard Siemens or Litton)
- **Outputs:** 24 x I.S. 12VDC On/Off Outputs (Max 1A for each Output)
- **Connector 1:** CAN Interface over Obelix Fibre
- **Connector 2:** Obelix B18 (12VDC I.S. Supply and Solenoid Outputs)
- **Connector 3:** Obelix B48 (12VDC I.S. Supply Analog inputs and Counter inputs)
- **Connector 4:** Obelix B49 (Digital Inputs)

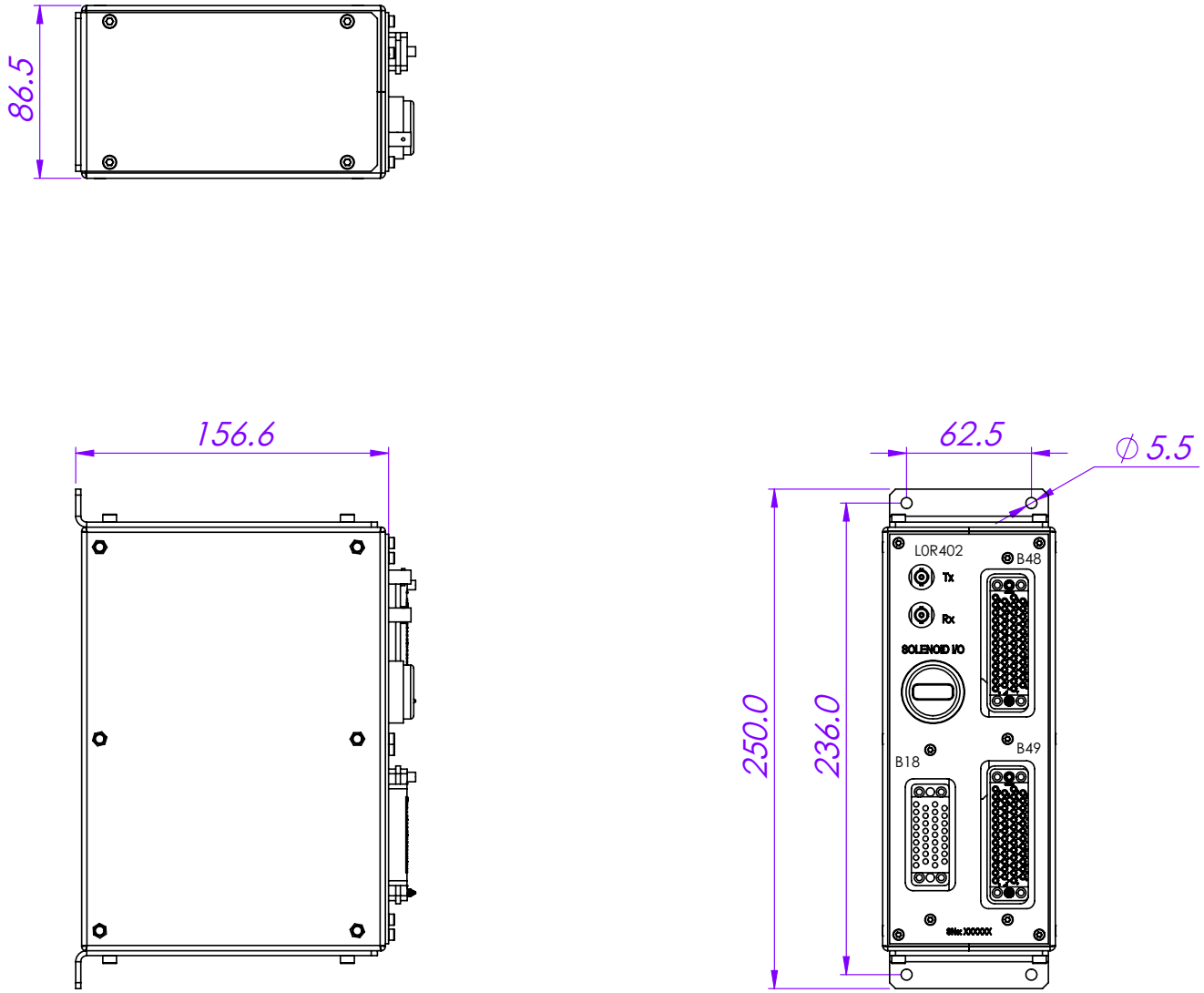
Heavy Duty Enclosure

- Electroless Nickel Plated
- Rugged Construction

Mass

- 6.5kg (14.3lb)

L0R40201 Obelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B



Dimensions (mm)

L0R40201 Obelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B

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

L0R40201 Obelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B

CONNECTOR B18

Number	Unit / PCB VMCT-34F Female Board Mount PIN	L0R40201 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

L0R40201 Obelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B

CONNECTOR B48

Number	Unit / PCB GMST50F Female Board Mount PIN	L0R40201 Name
1	A	INP-COUNTER-1-in
2	B	INP-COUNTER-2-in
3	C	COUNTER-1-supply
4	D	COUNTER-2-supply
5	E	INP-COUNTER-3-in
6	F	INP-COUNTER-4-in
7	H	COUNTER-3-supply
8	J	COUNTER-4-supply
9	K	
10	L	RESOLVER-1-REF+
11	M	
12	N	RESOLVER-1-REF-(0V)
13	P	AN10
14	R	RESOLVER-1-SIN-
15	S	AN9
16	T	AN8
17	U	AN7
18	V	RESOLVER-1-COS+
19	W	AN6
20	X	AN5
21	Y	AN4
22	Z	RESOLVER-1-SIN+
23	a	AN3
24	b	AN2
25	c	AN1
26	d	RESOLVER-1-COS-
27	e	
28	f	
29	h	
30	j	RESOLVER-2-REF+
31	k	
32	m	
33	n	
34	p	RESOLVER-2-REF-(0V)
35	r	
36	s	
37	t	
38	u	RESOLVER-2-SIN-
39	v	
40	w	
41	x	
42	y	RESOLVER-2-COS+
43	z	
44	AA	
45	BB	
46	CC	RESOLVER-2-SIN+
47	DD	12VIS
48	EE	RESOLVER-2-COS-
49	FF	0VIS
50	HH	

Image depict coding pins required

L0R40201 DObelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B

CONNECTOR B49

Number	Unit / PCB GMST50F Female Board Mount PIN	L0R40201 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	
27	e	
28	f	MOD-SEL-3
29	h	
30	j	MOD-SEL-2
31	k	
32	m	MOD-SEL-1
33	n	INP25
34	p	INP26
35	r	INP27
36	s	INP28
37	t	INP29
38	u	INP30
39	v	INP31
40	w	INP32
41	x	
42	y	
43	z	
44	AA	
45	BB	
46	CC	
47	DD	
48	EE	
49	FF	
50	HH	0VIS

Image depict coding pins required

L0R40201 Obelix Dual Resolver Module Ex ib Intrinsically Safe I/O Type B

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
H0R40401	Connector Assembly B18 2.2m
H0R40501	Connector Assembly B48 2.2m
H0R40601	Connector Assembly B49 2.2m

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.