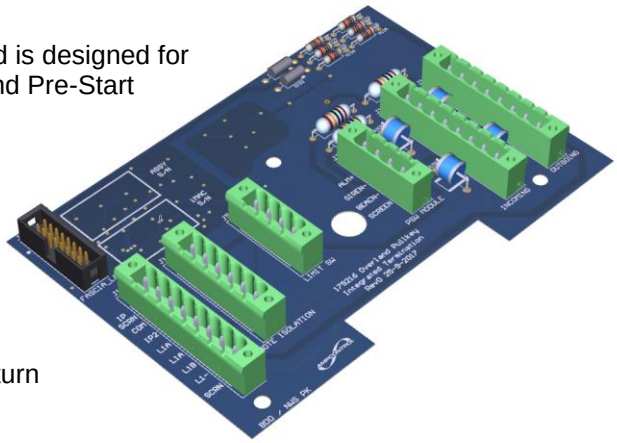
TECHNICAL DATASHEET

OVERLAND CONVEYOR PULLKEY TERMINATION BOARD (iMAC+RIS+PSW)

Integrated Monitoring and Control Systems

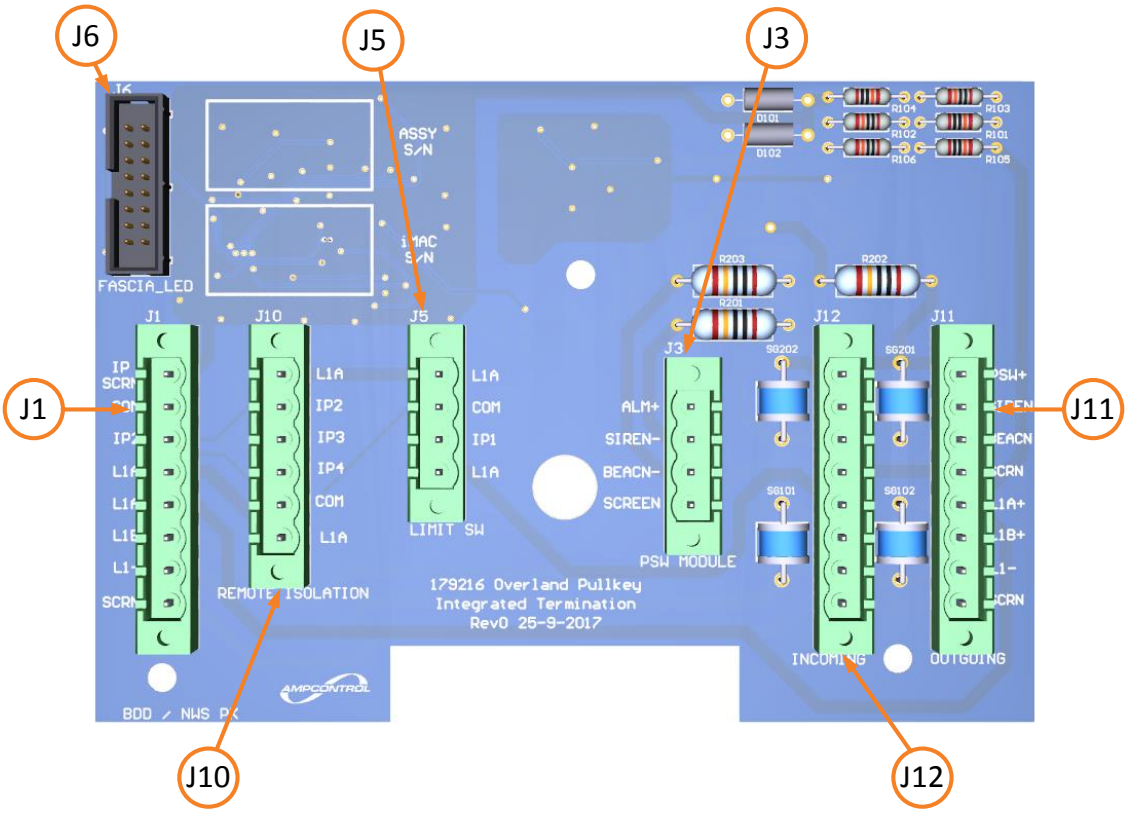
Description

The Ampcontrol iMAC + RIS + PSW Pullkey termination board is designed for use in overland conveyor systems incorporating both iMAC and Pre-Start Warning (PSW) functions.



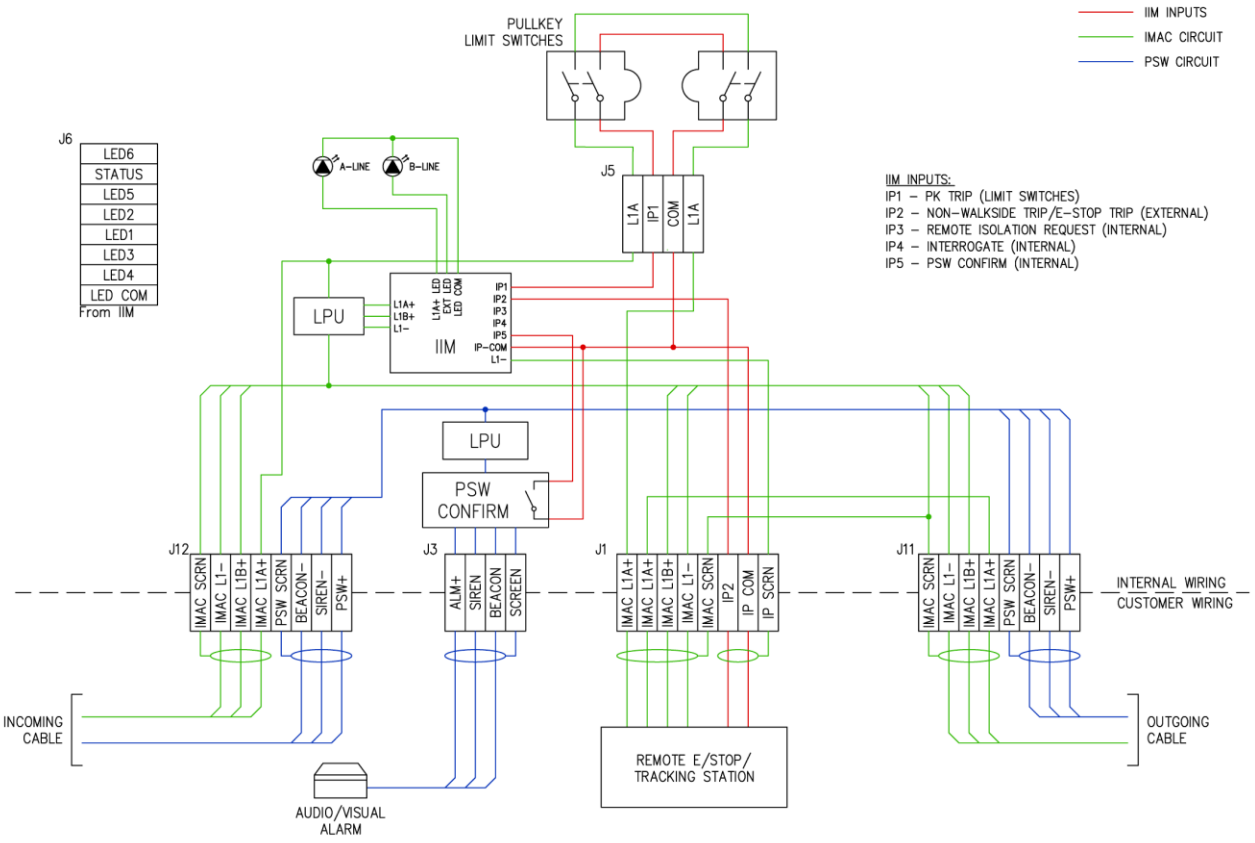
Features

- iMAC Pullkey trip and Remote Isolation functions
- iMAC Non-walk side trip function
- SLE Pullkey trip function
- PSW (Audio/Visual) monitoring and confirmation
- Latched instantaneous A-line monitoring
- Secondary, addressable A-line reply with S/N data return confirmation
- Integrated lightning protection
- Remotely monitored, controlled and configured from the iMAC Controller



ampcontrolgroup.com
customerservice@ampcontrolgroup.com
+61 1300 267 373

Connection Diagram



Data Registers

Input register (address 1 – 255, excluding 100)				
Bit	**Description**	**Bit Value**	**r / w**	**Invert Bit**
15	-	X	r	-
14	-	X	r	-
13	-	X	r	-
12	-	X	r	-
11	-	X	r	-
10	-	X	r	-
9	-	X	r	-
8	-	X	r	-
7	Random data bit	0 / 1	r	-
6	A-line monitor input (fast + latching)	0 / 1	r	-
5	A-line monitor input	0 / 1	r	-
4	Input 5 (I5 PSW confirmation)	0 / 1	r	4
3	Input 4 (I4 Interrogate)	0 / 1	r	3
2	Input 3 (I3 Remote Isolation Request)	0 / 1	r	2
1	Input 2 (I2 Non-walk side / E-stop Trip)	0 / 1	r	1
0	Input 1 (I1 Pullkey Trip)	0 / 1	r	0

Input Bits Ix (x = 0 to 5) Truth Table		
Input Switch	**Input register parameter – invert bit value**	**Input register – Ix bit value**
Open	0 (N/O)	1
Closed	0 (N/O)	0
Open	1 (N/C)	0
Closed	1 (N/C)	1

Output register (address: fixed at 100)				
Bit	**Description**	**Bit Value**	**r / w**	
15	-	X	r	
14	-	X	r	
13	-	X	r	
12	-	X	r	
11	-	X	r	
10	-	X	r	
9	-	X	r	
8	-	X	r	
7	-	X	w	
6	-	X	w	
5	-	X	w	
4	-	X	w	
3	LED4	1 = On (flash)	w	
2	LED3	1 = On (flash)	w	
1	LED2	1 = On (flash)	w	
0	LED1	1 = On (flash)	w	

A line register (address 1 – 255, excluding 100)				
Bit	**Description**	**Value**	**r / w**	
15-0	Module Serial number	0 – 65535	r	

Functional Logic

Same functional logic as an IIM Module with the following additional features:

Reply on A-Line (assert online bit)

If the A-line address is configured as non-zero, the module will reply at that address (via the A-line), as well as place the modules S/N in the data register for that address (via the B-line).

A-Line monitor (fast + latching)

The module monitors every single A-line and B-line bit pulse, and if there is a single mismatch, bit 6 in the IIM-OLC input data register will be set and latched. Any reset roll-call command will clear this flag.

PSW Alarm Confirmation

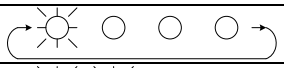
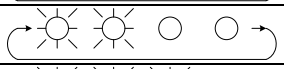
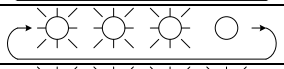
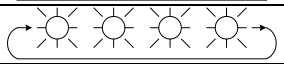
The module monitors the current drawn by the PSW alarm module, whenever the current drawn exceeds 4mA, bit 5 in the IIM-OLC input data register will be set, otherwise this bit will be cleared.

Configuration Parameters

(Refer to document – IMACB005 – iMAC module parameters programming procedure)

Input Register Parameters (roll-call name:)					
No	**Description**	**Range**	**Default**	**Units**	**r / w**
1	Input register address	1 - 255	-	-	r / w
2	Input register Ix bits invert	0000h – 000Fh	0000h	-	r / w
3	A line address (MSB) & Output register address (LSB)	0064h – FF64h	0064h	-	r / w
4	L1+ voltage	50h – D7h (8.0 – 21.5VDC)	-	VDC	r

Indication LED's

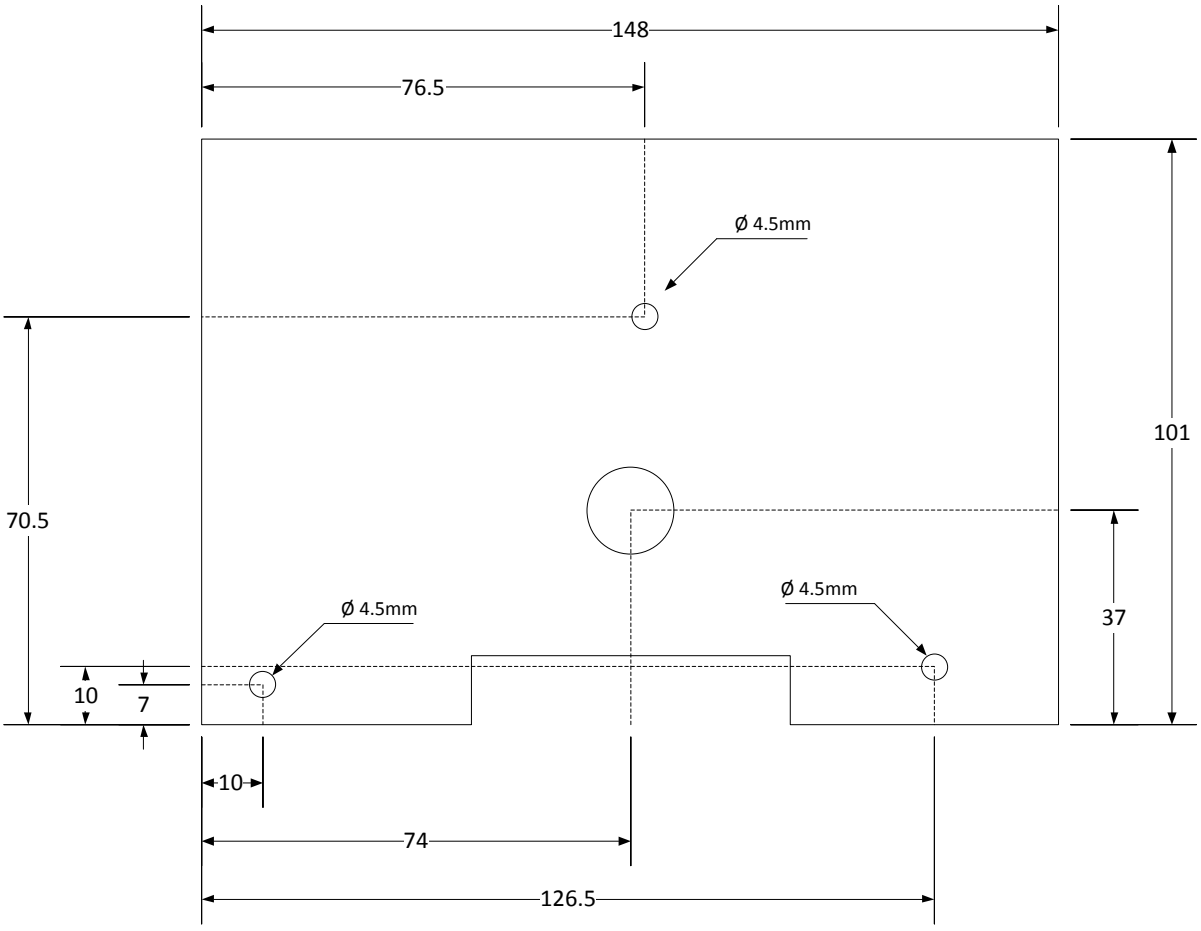
LED Indicators			
Status LED			
Sequence		**Module – iMAC Comms Status**	**Module – Function Status**
Off	-	Unknown (check connections)	Unknown (check connections)
Slow Flash		Healthy	All input register Ix bits = 0
2 Flashes		Healthy (has been roll-called)	-
3 Flashes		Error (address clash)	-
Fast Flash		Healthy	Any input register Ix bit = 1

A100 Output LED (A100/LED5)	
Off	Output register (A100) is offline
Flash	Output register (A100) is online

L1A+ Monitor LED (L1A+ MON/LED6)	
Off	L1A+ line inactive
Flash	L1A+ line active

Outputs LED's 1 to 4	
Off	Output register LEDx bit = 0
Flash	Output register LEDx bit = 1

Dimensions



Specifications

Specifications	
Mechanical	
Dimensions	148mm x 101mm (see diagram)
Mounting	Board has 3 x M4 mounting holes (screws not supplied)
Electrical Connections	Pluggable
Environmental	
Operating Temperature	-20°C to +65°C
Inputs	
Digital	5 (self-wetting)
Limits	3VDC (pulsed) @ < 1mA
Outputs	
Status LED	Internally current limited 3VDC source (via 330R limiting resistor)
Limits	< 2mA (external resistor may be required)
LEDs 1 to 6	Internally current limited 3VDC source (via a 100R limiting resistor)
Limits	< 2mA (external resistor may be required)
Communications	
iMAC L1	iMAC proprietary
Hardware interface	3 wire (+/-18VDC or +/-21VDC iMAC Fieldbus)
Line Speed	300 – 1000 baud
Bit protocol	iMAC proprietary
Isolation	None
L1 line loading (baud)	0.66mA (300) / 0.82mA (500) / 1.64mA (1000)

Ordering Information

Ordering Information	
Part Number	**Description**
179217	S/ASSY PCB PK TERM OLC IMAC+RIS+PSW
Find Out More	
For more information on this product, contact Ampcontrol Customer Service on +61 1300 267 373 or *customerservice@ampcontrolgroup.com* or visit the Ampcontrol website: www.ampcontrolgroup.com	