

Data sheet

ACU-POE-24VDC-M12 & ACU-POE-48VDC-M12

Description

The ACU-POE-24VDC-M12 & ACU-POE-48VDC-M12 are highly integrated DC/DC converters designed for mining and harsh environment application. The converter is fitted with an IP67 circular input connector for DC power input, and IP67 M12 X-code connectors for data input and power+data output.

The power input stage of these converters is designed for wide input window, reverse polarity protection, as well as additional surge protection and EMD filtering. The full encapsulation of these converters provides ultimate shock & vibration protection in addition to IP67 rating.

The unit is encapsulated into an aluminium U-channel as the heatsink surface for the converter. Utilising the latest planar magnetic and high integration ceramic technology, the unit footprint is measured at only 88x120mm, with the total height of 40mm.

A green LED indicates the presence of output voltage. Output voltage is factory set to the initial accuracy of 1%. Different output voltages are available on ordering.

INPUT

Parameter	Min	Typ	Max	Unit
Voltage range (output regulation maintained)	10		40	V _{dc}
Input current (max @ 10Vdc) (Fitted with internal 10A fuse)			8	A
Reverse polarity protection	Internal blocked. Input current less than 10mA			
Input startup voltage		11		V _{dc}
Input shutdown voltage		9.2		V _{dc}

OUTPUT

Parameter	Min	Typ	Max	Unit
Setup accuracy (V nom)	99		101	% V _{nominal}
Rated Current (I rated)	See table 2.6			
Load regulation (0A to I rated, measured at M12 pins)		0.2	0.5	± % V _{nominal}
Line regulation (full input range)		0.1	0.25	± % V _{nominal}
Output noise:				
Switching frequency ripple			0.5	± % V _{nominal}
High frequency spike (30MHz BW)			0.5	± % V _{nominal}
Note: Measured at the output connector with 100n ceramic decoupling capacitor across output.				
Current limit	110	120	135	± % I _{rated}
Overload protection	Trip and restart, approx 0.3s on, 3s off			
Efficiency at full load (model dependent)		88		%
Over voltage protection (unit latching, reset by recycle input power)	120	125	130	± % V _{nominal}

Images



Data sheet

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Environmental Factors

Parameter	Min	Typ	Max	Unit
Operating <u>Ambient</u> temperature	-40		+70	°C
Operating <u>Case</u> temperature	-40		+95	°C
Cooling	Natural convection cooling			
Thermal shutdown (Unit shutdown and automatic recover after over temperature condition subsided.)		95		°C chassis
Operating orientation	Stand-alone unit. No special orientation			
Humidity			95	%
Altitude			2000	metres
Shock & vibration (Design to meet)	MIL-STD 810E & IEC61373			
Electrostatic discharge immunity	Design to meet IEC61000-4-2: 4KV			
C-tick	AS/NZS61000.6.3:2012			
MTBF (G_m , $T_{amb} = 25^{\circ}C$)	AS/NZS61000.6.3:2012NZS61000.6.3:2012			
INTERFACE	Min	Typ	Max	Unit
Input (Power)	Circular metal shell size 8 8-3 insert profile			
Input (Data)	M12 X-code			
Output (Power + Data)	M12 X-code			
Indication: DCOK (Output)	Green LED on chassis (output face)			

Isolation

Parameter	Min	Typ	Max	Unit
Input to Output (power)	1500	1 second		Vdc
Input to Chassis (power)	1500	1 second		Vdc
Output to Chassis (power)	500			Vdc

Mechanical

Input to Output (power)	88x120x40mm
Input to Chassis (power)	Aluminium with black anodisation
Output to Chassis (power)	0.5kg max

POE Series Output option

	Output V	
	24V	48V
Input V		
(W24): 10-40V	2.5A	1.5A

Mechanical Specifications

054- RPoE-M12-gb Outline

Technical drawing showing the dimensions of the 054- RPoE-M12-gb Outline. The drawing includes a 3D perspective view of the device and two 2D views (top and front) with dimensions in mm.

Dimensions (mm):

- Overall Width: 108.00
- Overall Depth: 38.00
- Overall Height: 88.00
- Port Spacing (Front View): 21.50, 40.00, 21.00
- Port Spacing (Top View): 6.00, 108.00, 6.00
- Port Spacing (Side View): 19.00, 16.00
- Port Spacing (Front View): 19.00, 16.00
- Port Spacing (Top View): 19.00, 16.00
- Port Spacing (Side View): 19.00, 16.00
- Port Spacing (Front View): 19.00, 16.00
- Port Spacing (Top View): 19.00, 16.00
- Port Spacing (Side View): 19.00, 16.00

Labels:

- RPoE Output (45V 1.25A)
- Data Input
- Power Input 10V-40V dc

Notes:

- All dimensions in mm unless otherwise stated.
- Casing: Black anodised aluminium

Title		Doc No		Issue	
054- RPoE-M12-gb Outline				A	
KaRaTec		Drawn By: MITHUSH		Appd:	
Date:		Date:		Date:	
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