CAN ADAPTER

ELECTROMOBILITY OFFER

TECHNICAL CATALOG

POCLAIN Hydraulics

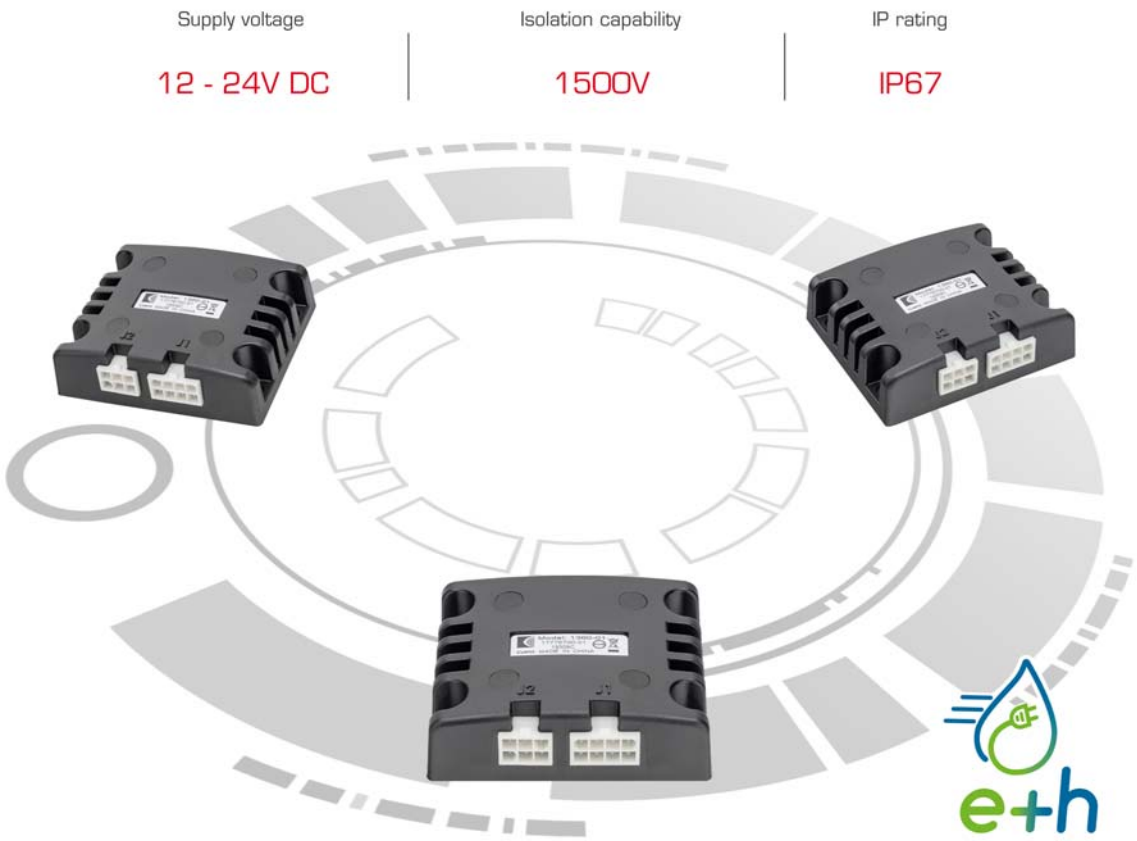
CAN ADAPTER

Poclain Hydraulics CAN Adapter is easy to implement and ideal for any CANbus.

CAN Adapter can be utilized to mitigate unwanted voltage or current on a bus originating from Electro Magnetic Compatibility, ground loops or multiple voltage source systems.

It is designed to isolate one CANbus from another, effectively eliminating bus noise and errors while facilitating communication between the two CANbus units.

The module contains optionally connected 120Ω CAN termination resistors making it easy to terminate a bus within the module.



CONTENT






SAFETY INSTRUCTIONS

Display of safety instructions

Standardized safety instructions, symbols, terms and abbreviations are used so that you can use this documentation to work quickly and safely with your product. To give you a better understanding they are explained in the sections below.

⚠ SIGNAL WORD **Type and source of the hazard!**

Consequences of not avoiding the hazard.

- Indication of how to avoid the hazard.

- **Safety sign:** Draws attention to the hazard.
- **Signal word:** Identifies the degree of the hazard.
- **Type and source of hazard:** Identifies the type and source of the hazard.
- **Precautions:** States how to avoid the hazard.

Danger classes in accordance with ANSI Z535.6

Safety sign, Signal word	Meaning
⚠ DANGER	**Identifies a dangerous situation that will result in death or serious injury if not avoided.**
⚠ WARNING	**Identifies a dangerous situation that may result in death or serious injury if not avoided.**
⚠ CAUTION	**Identifies a dangerous situation that will result in moderate or minor injuries if not avoided.**
NOTICE	**Damage to equipment: the product or the environment risks damage.**

Symbols

The following symbols mark notes that are not relevant to personal safety, but are intended to make this documentation easier to understand.

Symbol	Meaning
	**Poclain Hydraulics disclaims any liability for damage of any kind if use of the product is not compliant with a recommendation identified with this symbol.**
	**General information regarding the product or the repair procedure.**
	**Information on the model number.**
	**Weight of component without oil.**
	**Indication of necessary volume of oil.**
	**Units.**
	**Indication of necessary tightening torque.**
	**Screws.**
	**Information intended for Poclain-Hydraulics personnel.**

AND METHODOLOGY

The views in this document are created using metric standards.
The dimensional data is given in mm and in inches (inches are between brackets and italic)

General safety instruction

Intended use

Can Adapter is specifically designed for Poclain “e+h” Electrohydraulic systems to ensure communication between DC-AC INVERTER and other components used in Poclain’s “e+h” Electrohydraulic systems.
Refer to Poclain Electromobility system technical catalog B79372X for more details about intended use.

Any use other than that described as Intended use is considered improped and is therefore impermissible. Poclain Hydraulics accepts no liability whatsoever for damage resulting from improper use. The user bears all risks arising from improper use.

INTRODUCTION

Features

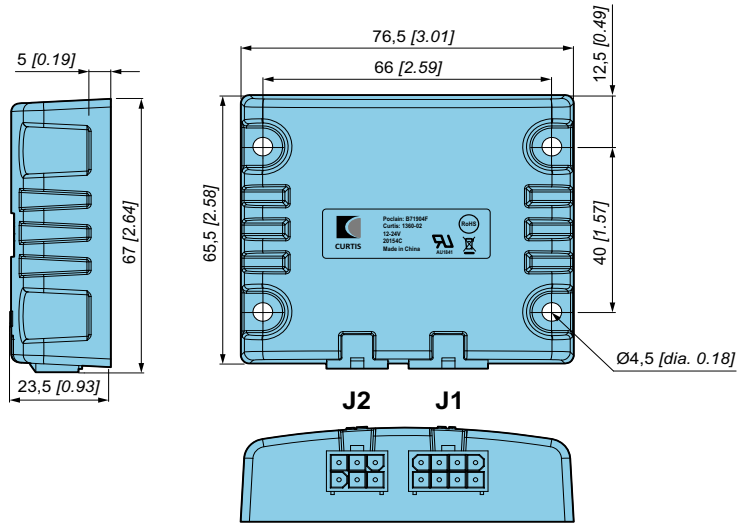
- Integrates easily into a system by simply connecting two CAN buses to the module and it will effectively isolate one bus from the other.
- Hardware only design - no need to update or configure firmware.
- Includes 120Ω CAN termination resistors allowing flexibility in system design.
- Allows for CAN shield termination effectively reducing bus noise.
- Easily operates in demanding conditions with an operational temperature range of –40° to +85° C and IP67 ingress protection.
- Supports CAN baud rates from 50kbps to 1Mbps.
- CE compliance with regard to EMC and ROHS, UL recognition and ROHS2 compliance ensure compatibility with global regulatory safety.

CAN Adapter characteristics

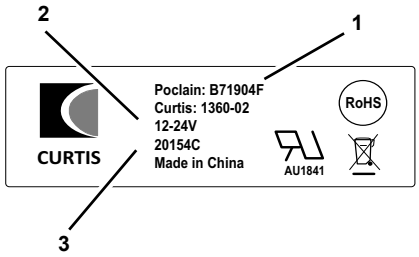
Comercial name		**CAN-ADAPTER-1360**
Part number		B71904F
Electrical performances		
Nominal voltage		12V - 24V DC
Voltage range		9V - 30V
Operating current	Typical	82 mA
	Maximal	113 mA
Isolation voltage		Withstand isolation voltages up to 1500Vrms for 1 min
Baut rate		50kb/s - 1Mb/s
Environmental performances		
Operating / Storage temperature		+40°C to +85°C
Humidity	Soak	EN 60068-2-78
	Test Cab	Damp Heat, Steady State, 10 days at 93% RH (±3%), 30°C
	Cyclic	EN 60068-2-30
	Test Db	Damp Heat, Cyclic (12hr + 12hr cycle). Test method variant 1. 6 cycles (each cycle is 24hrs), 90% RH
Ingress protection		EN 60529 - IP67
Shock		EN 60068-2-27: 3 shocks in all 3 axes in both directions (18 shocks in total), 500 m/s², 11 ms, half sine wave
Vibration	General	Designed to meet EN 60068-2-6, Swept Sine Wave method, 5g, 20 cycles in each plane, 5 to 500 Hz, 1 Octave/min; Amplitude = +/– 15mm; Amplitude< +/– 15mm; Acceleration = 5g
	Random	Designed to meet EN 60068-2-64. Test Fh: vibration, broad-band random (digital control) and guidance. Method 1, random excitation, 5hrs in each axis, 10 to 350 Hz
	Resonance	Designed to meet EN 60068-2-6. Vibration sinusoidal, 5g, 5 min at resonant points, 1 Octave/min, Swept Sine Wave 10 to 2000 Hz.
EMC specification		
Emissions (Broadband & Narrowband)		Designed to meet UN ECE/324 Addendum 9 Regulation 10 Revision 4 (6 March 2012) for an Electrical/ electronic sub-assembly (ESA)
ESD immunity		Designed to meet IEC 61000-4-2: Test Severity Levels for Component Test, Category 1 (8 kV contact discharge or 15 kV air discharge) according to ISO 10605:2008, Tables C.1, C.2 & C.3
Radiated immunity		Designed to meet: 20 V/m w/80% AM(1kHz) (27 MHz to 1 GHz); 3V/m w/80% AM(1kHz) (1 to 2GHz) & 1V/m w/ 80% AM(1kHz) (2 to 2.7GHz) when tested per EN 61000-4-3
Conducted immunity		Designed to meet IEC 61000-4-4: Test level 4 (4 kV peak, 2.5 kHz repetition rate)
Magnetic immunity		Designed to meet: 1000A/m @ 0 Hz for 3 sec and 30A/m @ 50 Hz per EN 61000-4-8

Regulatory approvals	
UL	UL recognition to UL 583
CE conformity	The product complies with the requirements of the EMC Standards and RoHS directive 2011/65/EU (RoHS 2).
EMC	Radiated Emissions: UN ECE/324
	Radiated Immunity: ISO 11451-1 and ISO 11451-2, using the RF levels defined in BS EN 13309:2010
	Electrical Transient Conduction: IEC 61000-4-4: Test level 4 (4 kV peak, 2.5 kHz repetition rate); ESD: ISO 10605: 2001
RoHS	RoHS directive 2011/65/EU (RoHS 2).

Overall dimensions



Identification of the component

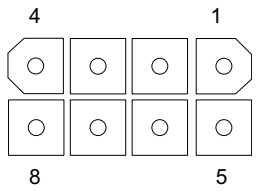


No.	Reference
1	Poclain part number
2	Voltage range
3	Manufacturing date (154th of 2020)

Recommended mounting:
4xM4 screws (Ø8 flat washers)
Max torque: 1,13Nm *[10.0 Lb.ft]*

Connectors

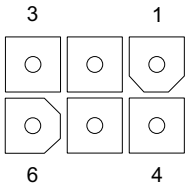
Connector J1



Reference: TE 1-770970-0

PIN	Function	Description
1	CAN 1 HI	
2	CAN 1 LOW	
3	CAN 1 TERM +	Connect PIN3 to PIN4 to insert 120Ω termination
4	CAN 1 TERM -	Connect PIN3 to PIN4 to insert 120Ω termination
5	CAN 1 SHIELD	
6	B +	Power supply
7	B -	Ground
8	N/A	

Connector J2



Reference: TE 1-770969-0

PIN	Function	Description
1	CAN 2 HI	
2	CAN 2 LOW	
3	CAN 2 TERM +	Connect PIN3 to PIN4 to insert 120Ω termination
4	CAN 2 TERM -	Connect PIN3 to PIN4 to insert 120Ω termination
5	CAN 2 SHIELD	
6	N/A	

Recommended mating connectors

Connector J1

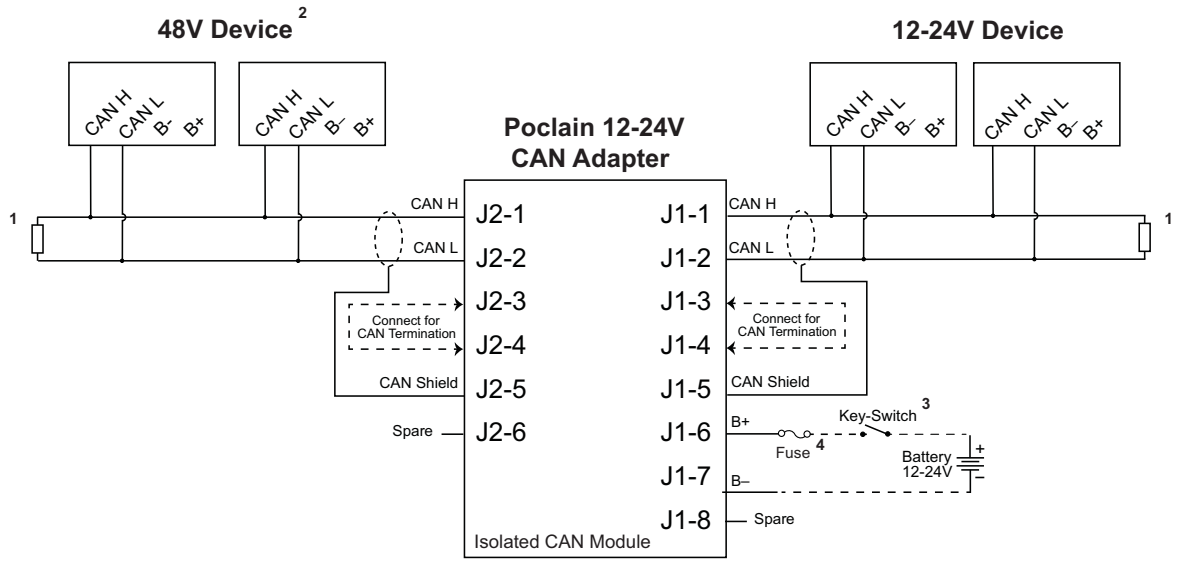
	TE reference
8 pin plug, Sealed connector body	794821-1
Interface seal	794772-8
Socket contact (18-22 AWG)	1-770904-X
Wire seals	794758-1
Single housing plug seal	794995-1

Connector J2

	TE reference
6 pin plug, Sealed connector body	794895-1
Interface seal	794772-6
Socket contact (18-22 AWG)	1-770904-X
Wire seals	794758-1
Single housing seal	794995-1

PIN6 (B +) must be fused with a fuse rating no greater than 4A.

Wiring diagram



1) Termination Resistor. Two termination resistors are required on each connector.
2) Any CANbus system using a different voltage system (separate ground references) from the Poclain CAN 12/24V Adapter.
3) System Key-Switch supplying the Poclain CAN Adapter, typically from a motor controller or vehicle controller's electrical system.
4) Fused circuit (as part of the key-switch/vehicle system).

The wiring diagram may not fully meet your application´s requirements. For questions on how to implement your application, contact your Poclain Hydraulics application engineer.

NOTICE

Risk of damage to the product or environment.

Risk of damage if reccomended value exceeded.

- PIN6 (B +) must be fused with a fuse rating no greater than 4A.
- To maintain UL recognition, it is responsibility of the installer to use a fuse rated no greater than 4A.

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