

CAN INLINE ADAPTER FOR LOAD CELLS

Type: **EMFA**

- mV/V TO CANOPEN / J1939
- 24-BIT A/D CONVERTER
- M12 IN AND OUT
- STAINLESS STEEL · IP67



KEY DATA

Input	1 strain gauge load cell, ± 3 mV/V
Excitation	5 V DC
A/D converter	24 bit
Output	CANopen or J1939
Supply	9 ... 36 V DC
Connectors	M12 socket 4-pole (in) · M12 plug 5-pole (out)
Housing	stainless steel 17-4PH · IP67
Dimensions	$\varnothing 21 \times 105$ mm

One channel per unit. Set-up with a terminal emulation program or the FDC application.



OVERVIEW

The inline adapter sits between an analogue load cell and the CAN bus: it excites the load cell with 5 V, converts its mV/V signal at 24 bit and outputs it as a CANopen or J1939 data stream. Both ends are M12 connectors – a 4-pole socket for the load cell and a 5-pole plug for bus and supply. The IP67 stainless steel housing is built for vehicles and harsh industrial environments, such as agricultural machinery, cranes and hoists, robots, refuse collection vehicles and tipper trucks. The termination resistor is switched over the bus; set-up is done with a terminal emulation program or the FDC application.

INPUT AND MEASUREMENT

- strain gauge load cell, ± 3 mV/V
- excitation 5 V DC
- 87.5 ... 1,100 Ω , e.g. 4 $\times$ 350 Ω
- A/D converter 24 bit
- filter IIR or averaging
- load cell connection detect

OUTPUT AND SUPPLY

- CANopen or J1939
- baud rate CANopen up to 1000 kbit/s
- update rate up to 2.5 kHz (CANopen)
- termination selectable over CAN
- supply 9 ... 36 V DC
- stainless steel 17-4PH, IP67



TECHNICAL DATA

INPUT AND MEASUREMENT

Sensor type	strain gauge load cell, bridge output mV/V
Measuring range	± 3 mV/V
Load cell excitation	5 V DC
Load cell impedance	87.5 ... 1,100 Ω (e.g. 1 $\times$ 350, 4 $\times$ 350, 4 $\times$ 1,100 Ω)
A/D converter	24 bit
Connection detect	load cell connected: yes

PRECISION

Filter mode	selectable: IIR or averaging
Update rate CANopen	0.005 ... 2.5 kHz
Update rate J1939	0.005 ... 1.6 kHz

ENVIRONMENT AND MECHANICS

Operating temperature	-20 ... +70 °C
Storage temperature	-40 ... +125 °C
Housing	stainless steel 17-4PH
Dimensions	$\varnothing 21 \times 105$ mm
Weight	approx. 120 g

FUNCTIONS

Conversion	analogue mV/V signal of a load cell into a digital CAN data stream, one channel
Protocols	CANopen or J1939
Termination	software-enabled
Mounting	secure the unit, do not support it by the cables only (e.g. P-clips, brackets)

OUTPUTS AND INTERFACES

Protocol	CANopen or J1939
Baud rate CANopen	10, 20, 50, 125, 250, 500, 800, 1000 kbit/s
Baud rate J1939	250 kbit/s
Bus termination	selectable over CAN
Load cell connection	M12 socket, 4-pole (in)
CAN connection	M12 plug, 5-pole (out)

DISPLAY AND OPERATION

Set-up	with a terminal emulation program or the FDC application (analysis and configuration)
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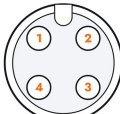
POWER SUPPLY

Supply voltage	9 ... 36 V DC
Supplied via	M12 CAN plug, pins 2 and 3



ELECTRICAL CONNECTION

Load cell input · M12 socket, 4-pole



1	+EXC	+ excitation
2	+SIG	+ signal
3	-EXC	- excitation
4	-SIG	- signal

M12 socket, 4-pole · notch at the top

CAN output · M12 plug, 5-pole

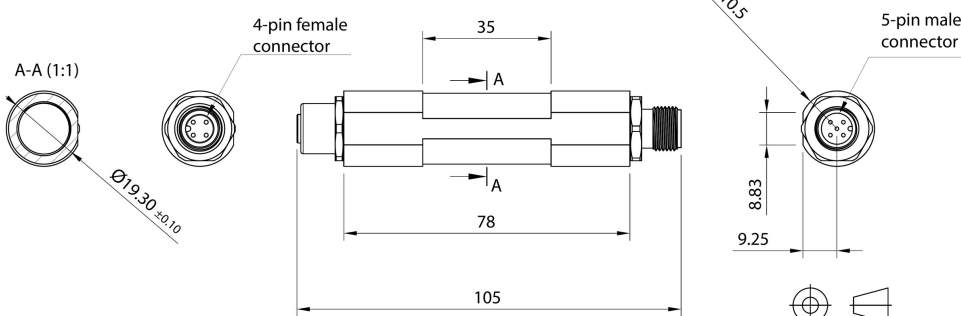


1	—	not used
2	+VDC	supply 9 ... 36 V DC
3	GND	ground
4	CAN_H	CAN High
5	CAN_L	CAN Low

M12 plug, 5-pole · notch at the top

Input: load cell to the 4-pole M12 socket. Output: CAN bus and supply to the 5-pole M12 plug. The product label of the specific device always applies. Type designation: CED-32.

DIMENSIONS (mm)



Left: section A-A (Ø 19.30 ± 0.10) and the socket, right: the plug (R 10.5). Secure the unit, do not support it by the cables only.

COMPLIANCE AND CERTIFICATION



CE

CE marking



RoHS

RoHS compliant



CANopen

CANopen as per CiA



IP67

Protection Rating

IP67 according to EN 60529

Components designed to meet Regulation 10, ISO 13766:2018 and ISO 14982:1998; the unit itself is not certified for these standards – suitability is to be confirmed by the user.

