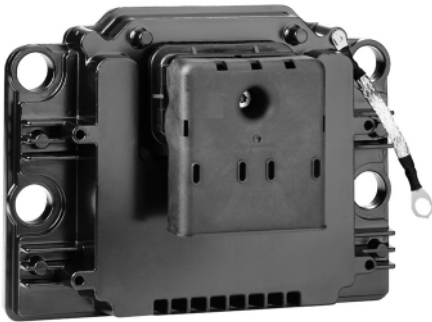


664493-3



TWD LEDCK1

Presentation

The Twido Extreme range of programmable controllers offers a solution for applications subjected to severe environmental conditions in terms of temperature, vibrations, oil splashing, and impacts, for example.

It comprises a **TWD LEDCK1** controller for integration in fixed-installation machines (in external pump management or waste water treatment applications, for example) or for on-board mobile equipment, such as in specialist vehicles (garbage trucks, fire trucks, etc.).

The Twido Extreme controller is powered with 12 V $\overline{\text{DC}}$ or 24 V $\overline{\text{DC}}$ supplied by a buffer battery, the vehicle battery or a UPS device. It has a wide operating range extending from 9...16 V or 18...32 V.

It offers an "all-in-one" solution in a metal casing with IP 67 protection index. This controller does not have an extension module.

The Twido Extreme controller has:

- 22 inputs:
 - 13 discrete inputs
 - 7 analog inputs
 - 1 analog input (configurable as PWM)
 - 1 PWM input
- 1 fast counter (10 kHz)
- 19 outputs:
 - 16 discrete outputs protected against short-circuits
 - 3 PWM (pulse width modulation) or PLS (pulse generation) outputs

The Twido Extreme controller has three communication ports:

- One Modbus serial port
- One CANopen port
- One CAN J1939 port

TwidoSuite software (version \geq 1.20) is used to program and debug the Twido Extreme controller. The Twido Extreme controller is compatible with application programs for Twido Compact and Modular bases.



TwidoSuite programming software

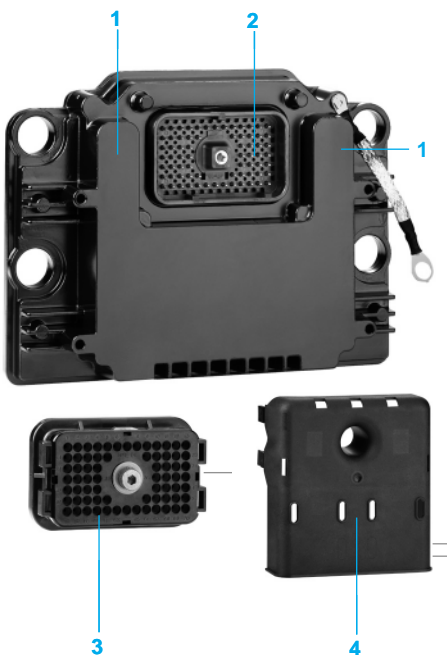
Description

The Twido Extreme controller **TWD LEDCK1** comes in a metal housing with IP 67 dust and damp protection **1** equipped with a 70-way male connector **2** (for all the connections).

It is mounted using the fixing kit **TWD XMTK4**.

To be ordered separately:

- **TWD FCNK70**: One connector kit for assembly comprising one 70-way female connector **3**, 80 pins, 80 plugs and one cover **4**
- or
- **TWD FCWK70L015**: One 70-way female connector **3** equipped with a 1.5 m cable (and flying leads at the other end) and one cover **4**



Type of controller base		TWD LEDCK1	
Environment			
Conformity to standards	Automotive directives		2004/104/EC directive ("e" marking), ECE R10 rules ("E" marking)
	Low voltage directive according to 73/23/EEC		Amended by directive 93/68/EEC: IEC/EN 61131-2 ("e" marking)
	EMC directives according to 89/336/EMC		Amended by directives 93/31/EEC and 93/68/EEC: IEC/EN 61131-2, IEC/EN 61000-6-2, IEC/EN 61000-6-4 (CE marking)
Product certification			Pending: UL, CSA
Temperature	Operation	°C	- 40...+110
According to IEC/EN 60068-2-1 & 2	Storage	°C	- 55...+155
Altitude	Operation	m	0...3600
Relative humidity	According to IEC/EN 60068-2-30	%	90 at 1.12 Un, non-condensing
Degree of protection	According to IEC/EN 60529		IP 67
Immunity to splashing of chemical products (1)			Fuel oil, hydraulic oil, motor oil, SAE J1455 chemical substances, solvent, antifreeze, cleaning agent
Environmental testing			
Description of test	Standards	Levels	
Immunity to Low Frequency (L.F.) disturbance (1)			
DC voltage variation	IEC/EN 61131-2	0.85 Un...1.2 Un for 30 min with 5% ripple (peak values)	
Short interruptions	IEC/EN 61131-2	1 ms with --- power supply	
Voltage dips and pick-ups	IEC/EN 61131-2	Un-0-Un; Un for 60 s; 3 separate cycles of 10 s Un-0-Un; Un for 5 s; 3 separate cycles of 1 to 5 s Un-0.9 Udl; Un for 60 s; 3 separate cycles of 1 to 5 s <i>Where Un = nominal voltage and Udl = undervoltage detection level</i>	
Immunity to High Frequency (H.F.) disturbance (2)			
Electrical fast transients/Bursts	IEC/EN 61000-4-4 IEC/EN 61131-2 zone B IEC/EN 61000-6-2	Primary power supply: 2 kV in common mode Communication data: 1 kV in common mode	
Surges	IEC/EN 61000-4-5 IEC/EN 61131-2 zone B IEC/EN 61000-6-2	Primary power supply: 0.5 kV in differential mode and 1 kV in common mode Communication data: 1 kV in common mode	
Electrostatic discharge	IEC/EN 61000-4-2 IEC/EN 61131-2 zone B IEC/EN 61000-6-2	4 kV contact, 8 kV air	
Radiated electromagnetic field	IEC/EN 61000-4-3 IEC/EN 61131-2 zone B IEC/EN 61000-6-2	10 V/m: 80 MHz...1 GHz, 10 V/m: 1.4...2 GHz, 1 V/m: 2...2.7 GHz	
Radio frequency in common mode	IEC/EN 61000-4-6 IEC/EN 61131-2 zone B IEC/EN 61000-6-2	10 V: 0.15...80 MHz	
Electromagnetic emissions (2)			
Conducted emissions	EN 55011, Class A IEC/EN 61131-2 IEC/EN 61000-6-4	150 kHz...500 kHz: quasi-peak 79 dB (µV); average 66 dB (µV) 500 kHz...30 MHz: quasi-peak 73 dB (µV); average 60 dB (µV)	
Radiated emissions	EN 55011, Class A IEC/EN 61131-2 IEC/EN 61000-6-4	30 MHz...230 MHz: quasi-peak 40 dB (measured at 10 m), quasi-peak 50 dB (measured at 3 m) 230 MHz...1 GHz: quasi-peak 47 dB (measured at 10 m), quasi-peak 57 dB (measured at 3 m)	
Immunity to climatic variations			
Damp heat, cyclic	IEC/EN 60068-2-30 Db	°C	55 - 25 with 93% relative humidity with 2 cycles of 12 hrs on/12 hrs off
Cyclic temperature variations	IEC/EN 60068-2-14 Na and Nb	°C	- 40...110 with 100 cycles of 2 hrs on/2 hrs off
Ruggedness to climatic variations			
Dry heat when not operating	IEC/EN 60068-2-2 Bb	°C	155 for 0.5 hr
Cold when not operating	IEC/EN 60068-2-1 Ab and Ad IEC/EN 60068-2-48	°C	- 55 for 8 hrs
Thermal shocks when not operating	IEC/EN 60068-2-14 Na	°C	- 40...120 with 4 cycles of 2 hrs on/2 hrs off and a transfer time < 1 min
Immunity to mechanical stress (2) (3) (during operation)			
Sinusoidal vibration	IEC/EN 60068-2-6 Fc IEC/EN 61131-2	5...150 Hz with 3.5 mm amplitude at 1 g, endurance: 10 cycles of 1 octave/min per axis 9.45 g, frequency 24 Hz...2 kHz for 6 hrs per plane on each of the 3 orthogonal planes	
Shock	IEC/EN 60068-2-27 Ea	15 g/11 ms; 3 shocks/direction/axis 50 g/5 ms vertical, 20 g/5 ms horizontal with number of shocks < 10	

(1) Values applicable to the base **TWD LEDCK1**, the fixing kit **TWD XMTK4** and the connector to be assembled **TWD FCNK70**. For the preformed connector **TWD FCWK70L015**: operating and storage temperatures: - 40...+75°C and no immunity to splashing of chemical products.

(2) Devices must be installed and wired in accordance with the instructions in the setup manual for the Twido Extreme controller.

(3) The controller is mounted using the fixing kit **TWD XMTK4**.

