

Your peace of mind...

Twido
Programmable controllers





Need efficiency for your small automation systems?

Twido programmable controllers and TwidoSuite software provide simple and astute solutions for all your predicaments.



Flexibility:

The assurance of finding your optimised solution

- > 3 ranges: Twido Compact, Twido Modular and Twido Extreme
- > Self-configure your solution by simply adding the required I/O expansions (digital, analogue) and options to your base equipment.



Openness:

Easily communicate with your environment

- > With its numerous integrated communication networks, or as a reasonably priced option, treat yourself to a high performance and economical communication solution.



Simplicity:

Be more efficient at all levels

- > With the TwidoSuite software, develop your projects with astonishing ease. Resolutely modern and unrivalled in clarity, TwidoSuite naturally adapts to your requirements...
- > Program and set-up your Twido controllers even in the most inaccessible places using the Bluetooth® wireless connection kit...
- > Extremely compact, Twido is easy to assemble and has a wide variety of connection options to save time and improve reliability.

Make the most of your energy



The assurance of finding your optimised solution

Select your type of base

With its 16 base modules "Compact", "Modular" and "Extreme", **Twido** offers you multiple possibilities tailor-made solutions.



Assure the evolution of your automation systems at optimised costs.



> **Twido Compact**
Simplicity, ease of use

- "All in one" product
- Screw terminal connection
- 10 compact bases
 - 10, 16, 24 and 40 I/O
 - 24 VDC or 100 ... 24 VAC supply
 - Modbus, CANopen, Ethernet (integrated on 40 I/O).



> **Twido Modular**
Compactness, flexibility

- Very compact and expandable
- Removable screw terminals or HE10 (pre-wired) connection
- 5 bases, 20 or 40 I/O, expandable using 4 to 7 modules
- 24 VDC supply
- Modbus, CANopen, Ethernet.



> **Twido Extreme**
Robustness

- IP67
- Temperature -40°C to +110°C
- 1 non expandable base, 41 I/O (Digital, Analogue or PWM)
- 12 or 24 VDC supply
- Modbus, CANopen, CAN J1939 integrated.

Adapt the Twido Compact and Modular bases to your applications!



- > **I/O expansions**
- Up to 32 I/O
 - Wide variety of connection options

1 2nd serial link
Increase your communication alternatives.

2 Display
Make adjustments directly on Twido.

3 Calendar timer
For actions determined by time or date, or time stamping the occurrence of events.

4 Memory expansion
Double the Twido program memory capacity.

Select from a wide variety of digital I/Os

Optimise your costs! Self-configure your solution by simply adding the required I/O expansions to your base equipment.



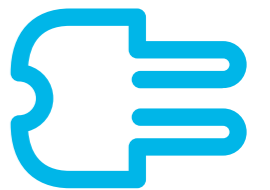
1 Removable screw terminals
Conventional cabling.

2 Spring terminals
Quick cabling and secure clamping.

3 HE10 connector
Pre-wired solution for quick and reliable connection.

> Opt for quick and safe cabling

The M3 profile AS-Interface Master module manages up to 62 slaves and allows up to 7 S7-3 profile analogue systems.
TWDNOI10M3



Various I/O connection methods both for Compact and Modular..

Help reduce your costs with the analogue I/Os

A varied and economical range due to an increase in the number of I/Os per module.

> More measuring options (temperature, pressure, flow, etc.)

- 2 x K, J, T thermocouple inputs
- 2 x 0...10 VDC, 4...20 mA inputs
- 4 x 0...10 VDC, 0...20 mA or temperature inputs
- 8 x PTC/NTC inputs
- 8 x 0...10 VDC, 0...20 mA inputs
- 8 temperature inputs (terminals)
- 8 temperature inputs (RJ11)
- 1 x 0...10 VDC, 4...20 mA output
- 2 x +/-10 V outputs
- 2 inputs, 1 output (0...10 VDC, 4...20 mA)
- 2 thermocouple or temperature inputs, 1 output (0...10 VDC, 4...20 mA)
- 4 inputs, 2 outputs (0...10 VDC, 4...20 mA)

> More regulation

Up to 14 easily configurable PID loops using teach mode, with analogue or digital (PWM) output.



Easily communicate with your environment

With its numerous integrated communication networks, or as a reasonably priced option, treat yourself to a high performance and economical communication solution.

• Need to exchange data simply?

Monitoring, operator dialogue, control...

> Locally using:

- The **economical Modbus solution** (integrated as standard)
- The **high performance Ethernet solution** (Modbus/TCP on Ethernet 10/100 Mb)

Make exchanges easily and quickly with your automation system equipment, such as graphic terminals, supervisors and programmable controllers, and simply modify our system.

> Remotely:

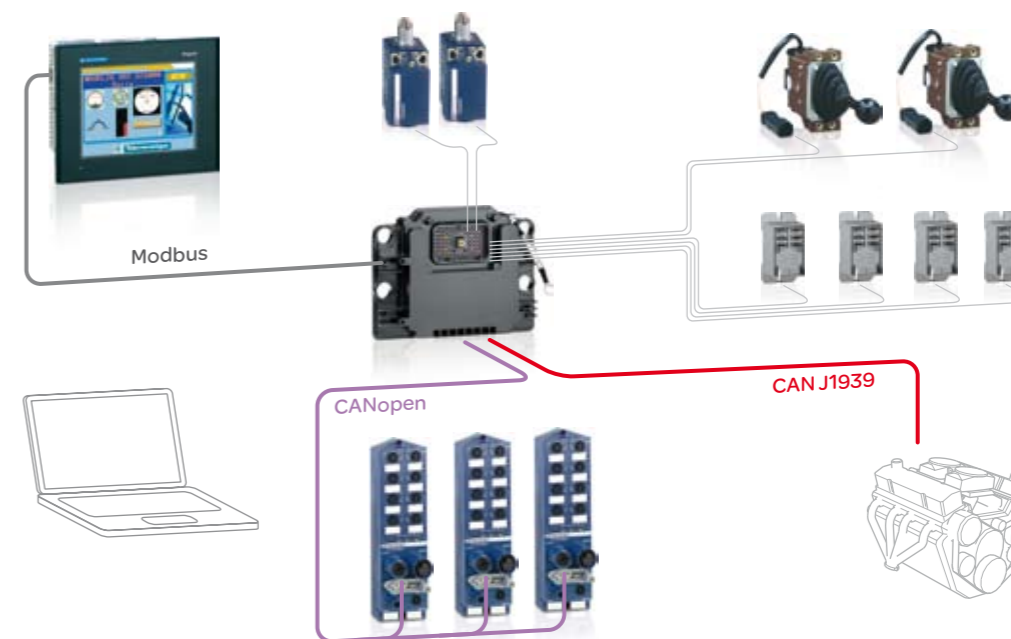
Monitor and control your installations using the **modem solution** and, consequently, avoid any unnecessary on-site visits for some of the maintenance operations.



Ethernet

All Twido controllers integrate in an Ethernet network as a passive device (server) via a TwidoPort Ethernet bridge

- Reduce the cost of your solution! Ethernet port integrated as standard in 40 I/O Twido Compact bases (client or server). TWDLCAE40DRF TWDLCE40DRF



Modem

Monitor and control your installations remotely!

- Avoid unnecessary on-site visits: communicate with Zelio Logic using your mobile phone
- Define your maintenance priorities
- Perform pre-diagnostics
- Manage your maintenance personnel



• Need to relocate the inputs/outputs easily?

With **Modbus** and **CANopen**, networks achieve both economy and performance:

- Savings in cabling,
- High data exchange transfer rate,
- Direct connection to industrial automation systems.



Modbus

- RS 485 serial link communication port integrated in all controllers
- Optional RS 485 or RS 232 type link

These 2 serial links can be parametered for Modbus protocol, ASCII protocol, Modem.

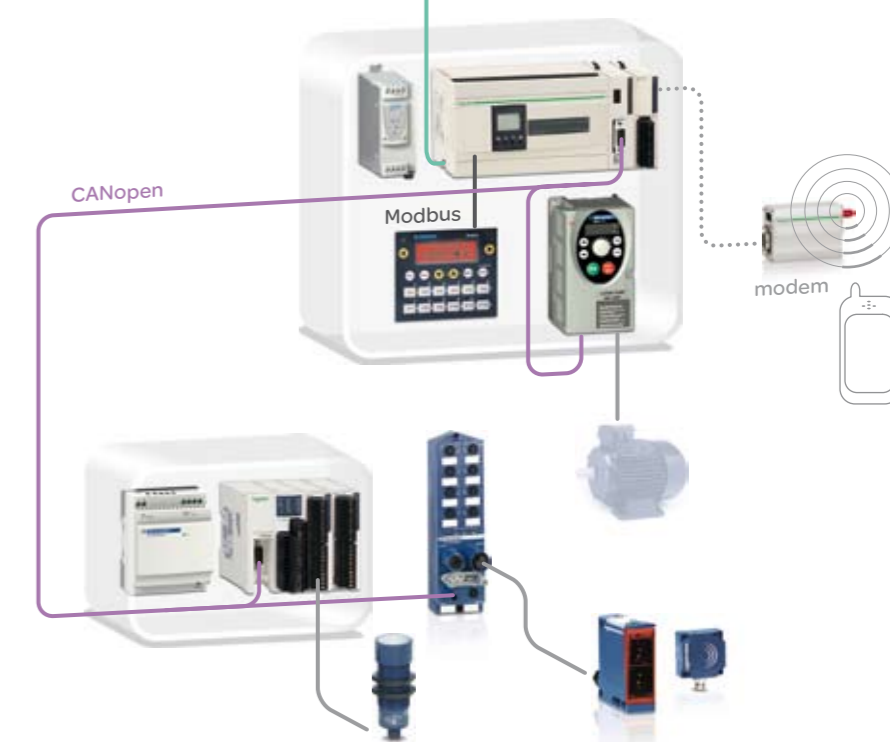
- Modbus isolation and junction modules simplify both cabling and installation, and protect the controller serial link... at very little cost.



CANopen

The CANopen module enables Twido controllers to perform the CANopen master function.

- Macros integrated in the TwidoSuite software to simplify programming
- "Hot SWAP" system to simplify maintenance: replace a CANopen slave without breaking the controller supply



• Need to pilot control equipment efficiently?

Variable speed drives...

- Opt for fast exchanges with **CANopen**.
- The openness of CANopen also enables you to achieve high performance and efficient communication with multiple products.
- Opt for an economical solution with **Modbus** (integrated or 2nd serial link).

Be more efficient at all levels

More than just programming software, **TwidoSuite** is designed to assist you in developing your projects that are based around Twido Compact, Modular and Extreme controllers.

• Never has programming been so simple!

Easily program your Twido controllers

- With the new TwidoSuite software, develop your projects with astonishing ease. Task orientated, resolutely modern, unrivalled in clarity, TwidoSuite naturally adapts to your requirements... for making implementation more user-friendly, quicker and therefore, more efficient.
- From anywhere, at any time, using Modbus, Ethernet, a modem...

Save valuable time

- In connected mode: directly modify online your program in the PLC.
 - Simplify exchanges with your equipment using the macros!
- To make your programming easier, a system of macros for Modbus serial link and CANopen bus simplify program writing and improves understanding of the code.

New LADDER editor!



• Gain freedom of movement, with no cabling

Easily connect thanks the Bluetooth® wireless connection.

Even in the most inaccessible places, by using the Bluetooth® gateway. An ideal solution for the setting-up phase, the Bluetooth® wireless connection provides all the benefits of freedom of movement within a 10 m radius of the Twido controller.



• Make your life easier!

More compact enclosures

Very small, Twido can be installed anywhere: imagine 1 complete controller with 40 I/O that fits in the palm of your hand!



Ultra-fast assembly

You need to add expansions or options? Screwdrivers or additional cables no longer needed: a few clicks and assembly is achieved.



1 Starter controllers

TeSys U

2 Variable speed drives

Altivar 31,61,71

3 Distributed I/Os

Advantys OTB, FTB

4 Servodrives and servomotors

Lexium 05

• TwidoSuite assures worry free continuity of your applications previously created using TwidoSoft.



Type of base	Compact			
Number of digital I/O	10	16	24	40
Number of digital inputs (24 VDC)	6 sink/source	9 sink/source	14 sink/source	24 sink/source
Number of digital outputs	4 relay 2 A	7 relay 2 A	10 relay 2 A	14 relay 2 A, 2 solid-state 1 A
Type of connection	Screw terminals (non removable)			
Possible I/O expansion modules	-	-	4	7
Counting	3 x 5 kHz, 1 x 20 kHz			4 x 5 kHz, 2 x 20 kHz
PWM positioning	-	-	-	2 x 7 kHz
Serial ports	1 x RS 485	1 x RS 485 ; option : 1 x RS 232C or RS 485		
Protocol	Modbus master/slave, ASCII, I/O relocation			
Ethernet port	-	-	-	RJ45 Ethernet
Dimensions, W x D x H	80 x 70 x 90 mm		95 x 70 x 90 mm	150 x 70 x 90 mm
Ref Supply voltage 100...240 VAC	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF	TWDLCAE40DRF ⁽¹⁾
Supply voltage 19.2...30 VDC	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF	TWDLCAE40DRF ⁽¹⁾
Real-time clock (option)	TWDXCPRTC			
Display unit (option)	TWDXCPODC			
Memory cartridge (option)	TWDXCMPFK32 ⁽²⁾			TWDXCMPFK64 ⁽³⁾

Type of base	Modular	
Number of digital I/O	20	40
Number of digital inputs (24 VDC)	12 sink/source	24 sink/source
Number of digital outputs	8 transistor, source 0.3 A	6 relay (2 A) et 2 transistor, source 0.3 A
Type of connection	HE10 connector	Removable screw terminals
Possible I/O expansion modules	4	7
Supply voltage	24 VDC	
Counting	2,5 kHz, 2 x 20 kHz	
PLS / PWM positioning	2 x 7 kHz	
Serial ports	1 x RS 485 ; option : 1 x RS 232C or RS485	
Protocol	Modbus master/slave, ASCII, I/O relocation	
Dimensions, W x D x H	35.4 x 70 x 90 mm	47.5 x 70 x 90 mm
References	TWDLMDA20DTK ⁽¹⁾	TWDLMDA20DRT
Real-time clock (option)	TWDXCPRTC	
Display unit (option)	TWDXCPODM	
Memory cartridge (option)	TWDXCMPFK32 ⁽²⁾	TWDXCMPFK64 ⁽³⁾



Type of base	Extreme	
Number of digital I/O	41	
Degree of protection	IP67	
Temperature	-40... + 10°C, storage: -55... +155°C	
Relative humidity	90 % without condensation	
Number of Digital inputs	13 ⁽¹⁾	
Number of Analogue inputs	8 ⁽²⁾	
Number of PWM inputs	1	
Number of Digital outputs	16 ⁽¹⁾ in 12 VDC, 8 ⁽¹⁾ in 24 VDC	
Number of PWM outputs	3	
Supply voltage	12 or 24 VDC	
Counting	1 x 10 kHz	
Communication ports	RS 485, CAN J1939, CANopen master	
Serial link protocols	Modbus RTU master/slave, ASCII	
Dimensions, W x D x H	165.51 x 45.70 x 225	
References	TWDLEDC1	



⁽¹⁾ 40 I/O version without Ethernet also available: TWDLCAA40DRF and TWDLCAE40DRF
⁽²⁾ Application backup, program transfer ⁽³⁾ Memory expansion, application backup, program transfer

⁽¹⁾ Sink version transistor outputs also available: (TM2LMDA20DUK and TM2LMDA40DUK)
⁽²⁾ Application backup, program transfer
⁽³⁾ Memory expansion, application backup, program transfer

⁽¹⁾ Short-circuit protected
⁽²⁾ Including 1 input configurable to PWM



Type of module	Digital I/O					
Number of digital I/O	8	16	32	4 E / 4 S	16 E / 8 S	
Type of connection	Removable screw terminals		HE10 connectors	Removable screw terminals	Spring terminals (non removable)	
References 24 VDC sink inputs	TM2DDI8DT	-	-	-	-	-
24 VDC sink/source inputs	-	TM2DDI16DT	TM2DDI16DK	TM2DDI32DK	-	-
120 V sink inputs	TM2DAI8DT	-	-	-	-	-
2 A relay outputs	TM2DRA8RT	TM2DRA16RT	-	-	-	-
0.5 A transistor, source outputs	TM2DD08TT	-	-	-	-	-
0.4 A transistor, source outputs	-	-	TM2DD016TK	TM2DD032UK	-	-
0.1 A transistor, source outputs	TM2DD08UT	-	TM2DD016UK	TM2DD032TK	-	-
24 VDC sink/source inputs + 2 A relay outputs	-	-	-	-	TM2DMM8DRT	TM2DMM24DRF



Type of module	Analogue									
Inputs and/or outputs	2 I		4 I		8 I		2 O		4 I / 2 O	
Type of connection	Removable screw terminals			RJ11			Removable screw terminals			
Inputs range	Thermo-couples type K, J, T	0 ... 10 V ⁽²⁾ 4 ... 20 mA ⁽³⁾	0 ... 10 V ⁽²⁾ 0 ... 20 mA ⁽³⁾	0 ... 10 V ⁽¹⁾ 0 ... 20 mA ⁽²⁾	PTC / NTC	Thermosonde Pt100 / Pt1000 -200... + 600°C	-	0 ... 10 V (2) 4 ... 20 mA ⁽³⁾		
resolution	12 bits (4096 points)			10 bits (1024 points)		12 bits (4096 points)		-	12 bits (4096 points)	
Outputs range	-						+/- 10 V	0 ... 10 V ⁽²⁾ 4 ... 20 mA ⁽³⁾		
resolution	-						11 bits + signe		12 bits	
Measuring accuracy	0.2% of the full scale value									
Supply voltage	24 VDC									
Dimensions, W x D x H	23.5 x 70 x 90 mm									
References	TM2AMI2LT	TM2AMI2HT	TM2AMI4LT	TM2AMI8HT	TM2ARI8HT	TM2ARI8LT	TM2ARI8LRJ	TM2AVO2HT	TM2AMM6HT	

⁽²⁾ Non differential ⁽³⁾ Differential



Type of module	Serial interface		Serial interface adaptor		CANopen expansion	Ethernet interface	Modbus isolation module	Modbus junction module
Physical layer (not isolated)	RS 232 C	RS 485	RS 232 C	RS 485	-	-	-	-
Number of modules	-		-		1	1	-	-
Type of connection	Mini-DIN connector		Mini-DIN connector		Screw terminals	RJ45	RJ45	RJ45
Protocol	Modbus Maître/esclave, ASCII, départ d'E/S		-		-	-	-	-
Twido base compatibility	Modular base TWDLMDA		Compact base TWDLCAA16/24DRF Modular base via Integrated display module TWDXCPODM		20, 24 or 40 I/O base	All models	All models	All models
References	TWDMOZ232D	TWDMOZ485D ⁽¹⁾	TWDMAC232D	TWDMAC485D ⁽¹⁾	TWDMC01M	499TWD01100	TWDMCAIS0	TWDMCAT3RJ

⁽¹⁾ Screw terminal version available: replace the letter **D** at the end of the reference by the letter **T** (TWDNOZ485**D** becomes TWDNOZ485**T** and TWDNAC485**D** becomes TWDNAC485**T**)



Type of module	Master ASI	Modems for Twido	
Supply voltage	12...24 VDC	12...24 VDC	
Description	-	RTC modem	GSM ⁽¹⁾ modem
References	TWDMO10M3	SR2MOD01	SR2MOD03

⁽¹⁾ 4 bandes 850/1900MHz 900/1800MHz



Type of module	Analogue Outputs, Inputs/Outputs (mixed)		
Nbre d'entrées et / ou sorties	1 O	2 I / 1 O	
Type of connection	Removable screw terminals		
Inputs range	-	0 ... 10 V ⁽²⁾ 4 ... 20 mA ⁽³⁾ Ø° C	Thermocouple type K, J et T Thermosonde 3 wire Pt 100
resolution	-	12 bits (4096 points)	
Outputs range	0 ... 10 V ⁽²⁾ 4 ... 20 mA ⁽³⁾		
resolution	12 bits		
Measuring accuracy	0,2 % PE		
Supply voltage	24 VDC		
Dimensions, W x D x H	23.5 x 70 x 90 mm		
References	TM2AMO1HT	TM2AMM3HT	TM2ALM3LT



Software, connecting cables, interfaces	TwidoSuite software multi-language	Connecting cables	Passerelle Bluetooth®	Bluetooth® gateway
Utilisation	PC with Windows XP or Vista	Twido/PC USB port	For PC not fitted with Bluetooth®	For Twido controller
References	TWDMBTFU10M	TSXCUSB485TSXPCX1031 ⁽¹⁾	VW3A8115	VW3A8114

⁽¹⁾ For Twido Extreme, order the reference: VW3A8106

> Twido selection guide

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Print: Schneider Electric
Design: BlueLoft
Photos: Schneider Electric