

# Data Sheet | Item Number: 750-838

## Controller CANopen; 128/64 KB Program/RAM; D-Sub

<https://www.wago.com/750-838>



The CANopen Controller combines control functionality, I/O interface and fieldbus in one device.

Application programming is IEC 61131-3 compliant.

The programmer can access all fieldbus and I/O data.

Features and applications:

- Decentralized control to optimize support for a PLC or PC
- Devide complex applications into individually testable units
- Programmable fault response in the event of fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Directly control peripheral equipment for faster system response times
- Stand-alone, compact controller

### Technical data

Communication	CANopen
Visualization	none
CPU	16 bits
Programming languages per IEC 61131-3	Instruction List (IL) Ladder Diagram (LD) Function Block Diagram (FBD) Continuous Function Chart (CFC) Structured Text (ST) Sequential Function Chart (SFC)
Programming environment	WAGO-I/O-PRO V2.3 (based on CODESYS V2.3)
Configuration options	EDS device description file WAGO-I/O-CHECK
Cycle time	< 3 ms for 1000 bit instructions/ 256 digital I/O
Baud rate	10 kBd ... 1 MBd
Bus segment length (max.)	1000 m
Transmission medium (communication/fieldbus)	Shielded Cu cable 3 x 0.25 mm <sup>2</sup>
Number of fieldbus nodes on master (max.)	110
Program memory	128 KB
Data memory	64 KB
Non-volatile software memory	8 KB
Memory for fieldbus input variables (max.)	512 bytes
Memory for fieldbus output variables (max.)	512 bytes
Number of modules per node (max.)	64
Number of modules without a bus extension (max.)	64
Number of PDOs	32 Tx / 32 Rx
Number of SDOs	2 SDO servers / 16 SDO clients
Input and output process image (fieldbus) max.	512 bytes/512 bytes
Other CANopen features	NMT slave Minimum boot-up Variable PDO mapping Emergency message Life guarding/heartbeat Empty module configuration
COB ID distribution	SDO, standard
Node ID distribution	DIP switch
Supported profiles	Communication profile: DS-301 V4.01; device profile: DS-401 V2.0; limit monitoring, flank-triggered PDOs, configurable response in the event of an error, DSP 405, NMT master programmable using function blocks
Indicators	LED (STOP) red: Device/node Stop; LED (RUN) green: Initialization; LED (TX, RX OVERFLOW) red: CAN send/receive buffer overflow; LED (I/O, USR) red/green/orange: Local status, status programmable by user; LED (A, B) green: System power supply status, field supply
Supply voltage (system)	24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP® connection)
Input current (typ.) at nominal load (24 V)	500 mA
Power supply efficiency (typ.) at nominal load (24 V)	87 %
Current consumption (5 V system supply)	350 mA

### Technical data

Total current (system supply)	1650 mA
Supply voltage (field)	24 VDC (-25 ... +30 %); via power jumper contacts
Current carrying capacity (power jumper contacts)	10 A
Number of outgoing power jumper contacts	3
Isolation	500 V system/field

### Connection data

Connection technology: communication/fieldbus	CANopen: 1 x D-sub 9 plug
Connection technology: system supply	2 x CAGE CLAMP®
Connection technology: field supply	6 x CAGE CLAMP®
Connection type 1	System/field supply
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
Connection technology: device configuration	1 x Male connector; 4-pole

### Environmental requirements

Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (storage)	-25 ... +85 °C
Protection type	IP20
Pollution degree	2 per IEC 61131-2
Operating altitude	without temperature derating: 0 ... 2000 m; with temperature derating: 2000 ... 5000 m (0.5 K/100 m); 5000 m (max.)
Relative humidity (without condensation)	95 %
Mounting position	any
Mounting type	DIN-35 rail
Vibration resistance	4g per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	per EN 61000-6-2, marine applications
EMC emission of interference	per EN 61000-6-4, marine applications
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Fire load	3.112 MJ
Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO <sub>2</sub> contaminant concentration at a relative humidity 75 %	25 ppm

### Approvals / Certificates

#### General approvals



Approval	Standard	Certificate Name
EAC Brjansker Zertifizierungsstelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-PFC750
UL UL International Netherlands B.V. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.1

#### Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-

## Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	22-2219060
BSH Bundesamt fuer See- schiffahrt und Hydrogra- phie	-	1104
BV Bureau Veritas S.A.	-	30389/C0 BV
DNV DNV GL SE	DNV-CG-0339, Aug.2021	TAA0000194
LR Lloyds Register EMEA	-	LR22180952TA
RINA RINA Germany GmbH	-	ELE343521XG001

## Approvals for hazardous areas



Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV14ATEX148929X (II 3 G Ex ec IIC T4 Gc)
CCCEX CQST/CNEx	CNCA-C23-01	2020312310000213 (Ex ec IIC T4 Gc)
EAC Brjansker Zertifizierungs- stelle	TP TC 012/2011	EAC RU C-DE.AM02. B.00163/19 (2Ex nA IIC T4 Gc X)
IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX TUN 14.0035 X (Ex ec IIC T4 Gc)
INMETRO TUV Rheinland do Brasil Ltda.	IEC 60079-0	TUV 12.1297 X
UKEx WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX003X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	UL 121201	E198726 Sec.1

Subject to changes. Please also observe the further product documentation!

Current addresses can be found at: [www.wago.com](https://www.wago.com)