



## **BCS-XP300**

Compact CODESYS-based controller

- 16 DI (4 fast), 16 DO (4 fast)
- High speed counter input/PTO and PWM outputs
- EtherCAT, Ethernet TCP/IP, PROFINET, Modbus, Serial, USB, OPC UA, MQTT, Sparkplug B and CAN interfaces
- CANopen Master interface
- 3G/4G/WiFi/ETH port (external accessory via USB port)
- SQL integration
- DNV, UL, CUL and Class 1 Division 2 certified

## Facts

### General

Part number	66.016.120-5
Warranty	Up to 2 years
Digital inputs (DI)	16
Digital outputs (DO)	16
Ethernet TCP/IP interface	1
RS-485 serial interface	1
CAN interface	1
CANOpen Master protocol	Yes
J1939 Manager protocol	Yes
USB host port	1
Addressable input variables memory (%I)	2 KB
Addressable output variables memory (%Q)	2 KB
Addressable variables memory (%M)	1 KB
Symbolic variables memory	2 MB
Program memory	2 MB
Retain/persistent memory (user configurable)	7.5KB
Source code memory (backup)	26 MB
User files memory (backup)	8 MB
Maximum number of tasks	5
Programming languages	Instruction List (IL), Structured Text (ST), Ladder Diagram (LD), Sequential Function Chart (SFC), Function Block Diagram (FBD), Continuous Function Chart (CFC)
Online changes	Yes
Watchdog	Yes
Real-time clock (RTC)	Yes
Real-time clock (RTC) resolution	Resolution of 1 ms, max. variance of 3 seconds per day, retention time of 14 days
Status and diagnostic indication	LEDs, web pages and CPU's internal memory
Isolation, Protective earth to all	1,500 Vac / 1 minute
Isolation, Logic/RS-485/CAN/USB to all	1,500 Vac / 1 minute
Isolation, Ethernet to all	1,500 Vac / 1 minute
Isolation, Power supply/analog I/O to all	1,500 Vac / 1 minute
Isolation, Digital inputs to all	1,500 Vac / 1 minute
Isolation, Digital inputs group I0x to I1x	1,000 Vac / 1 minute
Isolation, Digital outputs to all	1,500 Vac / 1 minute
Maximum power dissipation	5 W
Maximum wire size	0.5 mm <sup>2</sup> (20 AWG) with ferrule, 1.5 mm <sup>2</sup> (16 AWG) without ferrule
IP level	IP 20
Conformal coating	Yes
Operating temperature	-20 to 60 °C
Storage temperature	-25 to 75°C

Operating and storage relative humidity	5 to 96 %, non-condensing
Standards	IEC 61131-2, CE, Electromagnetic Compatibility (EMC) and Low-Voltage Directive (LVD)
Module dimensions (W x H x D)	215.5 x 98.8 x 34.0 mm
Package dimensions (W x H x D)	270.0 x 102.0 x 40.0 mm
Weight	370 g
Weight with package	430 g

## Certifications

General	CE, UL, UL 61010-2-201, cUL
Marine	DNV
Hazardous	UL C1D2

## Power supply

Nominal input voltage	24 Vdc
Input voltage	19.2 to 30 Vdc
Maximum input current (in-rush)	50A / 300 us
Maximum input current	300mA

## Digital inputs

Input type	Optoisolated sink type 1. Two isolated groups of 8 inputs each
Input voltage	24 Vdc, 15 to 30 Vdc for logic level 1, 0 to 5 Vdc for logic level 0
Input impedance	4.95 kΩ
Maximum input current	6.2 mA @ 30 Vdc
Input state indication	Yes
Response time	0.1 ms
Input filter	2 ms to 255 ms – by software. The filter sampling is performed on MainTask (or Refresh function), then it's recommended to use multiple values of the task interval

## Transistor digital outputs

Output type	Optoisolated transistor source type
Maximum output current	1.5 A per output. 12 A total
Leakage current	35 μA
On state resistance	105 mΩ
External power supply	19.2 to 30 Vdc
Switching time	20 us - off-to-on transition @ 24 Vdc. 500 us - on-to-off transition @ 24 Vdc
Maximum switching frequency	250 Hz
Configurable parameters	Yes
Output state indication	Yes
Output protections	Yes, protection against surge voltages

## RS-485

Connector	3-pin terminal block
Physical interface	RS-485
Communication direction	RS-485: half duplex
RS-485 maximum transceivers	32
Termination	Yes (Configurable)
Baud rate	9600, 19200, 38400, 57600, 115200 bps
Protocols	Master/Slave MODBUS RTU, Open protocol

## CAN

Connector	3-pin terminal block
Physical interface	CAN bus
CAN maximum nodes	64
Termination	Yes (Configurable)

## USB

Connector	USB A Female
Physical interface	USB V2.0
Baud rate	1.5 Mbps (Low Speed), 12 Mbps (Full Speed) and 480 Mbps (High Speed)

## Ethernet

Connector	Shielded female RJ45
Auto crossover	Yes
Maximum cable length	100 m
Cable type	UTP or ScTP, category 5
Baud rate	10/100 Mbps
Physical layer	10/100 BASE-TX
Data link layer	LLC
Network layer	IP
Transport layer	TCP (Transmission Control Protocol). UDP (User Datagram Protocol)
Application layer	EtherCat Master, Ethernet/IP Scanner/Adapter, PROFINET Controller, ModbusTCP client/server, Modbus RTU master/slave, User defined protocol, OPC UA/DA server, MQTT client, CANOpen Master protocol, CAN low level, J1939 Manager protocol, HTTP Server, BCS Tools programming protocol, SNTP Client, SNMP Agent
Diagnostics	LED (Link/Activity)

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