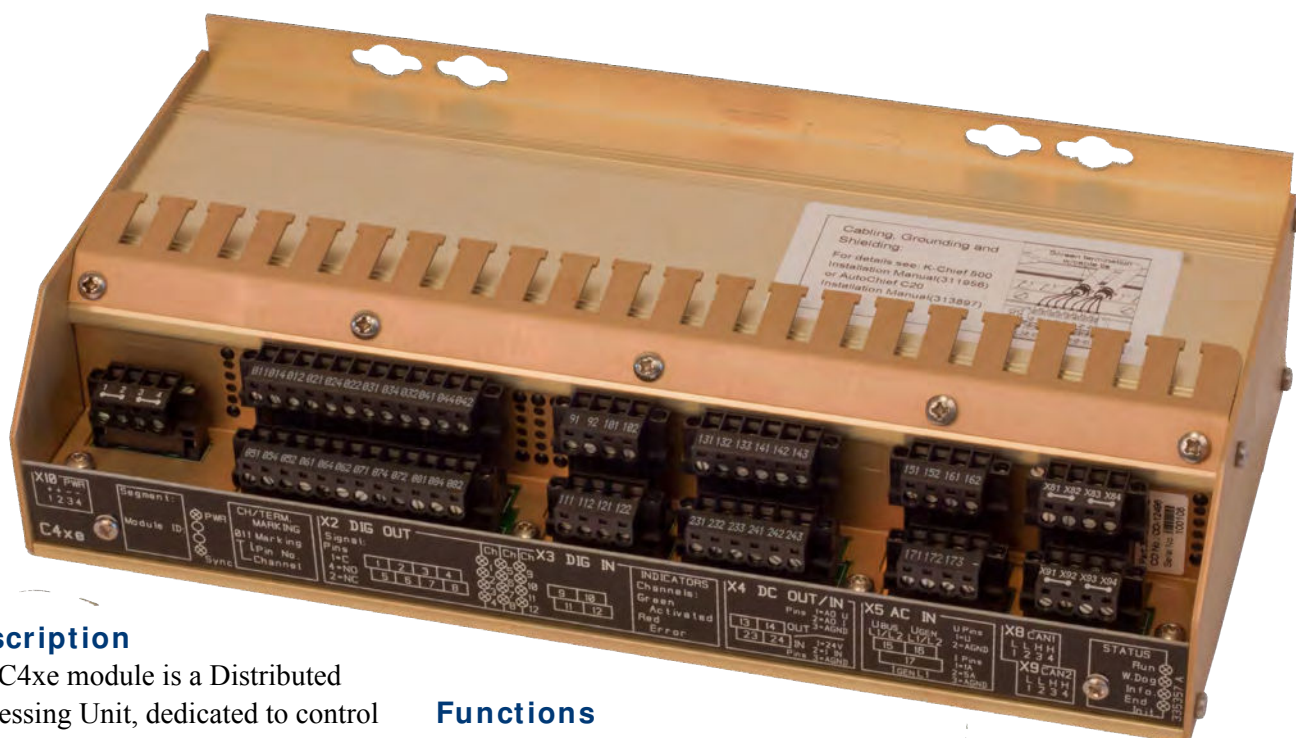


Distributed Processing Units

Generator Monitoring and Control (C4xe)



KONGSBERG



Description

The C4xe module is a Distributed Processing Unit, dedicated to control of maritime generators and bustie breakers. The inputs and outputs are specialized for interfacing to voltage and current transformers as well as switchboard equipment. See technical description for detailed specification of the various channels.

The two CAN channels in the module are based on the ISO 11898 standard, with optical isolation. Short circuit or malfunction on one CAN channel does not affect the other CAN channel.

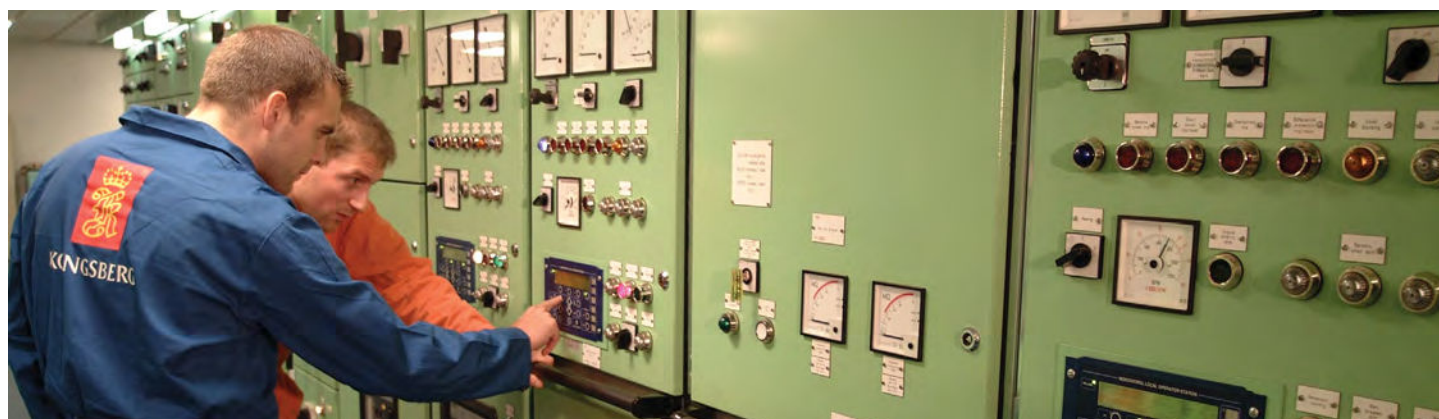
The protocol on CAN is based on CiA DS301, CANopen – Communication Profile for Industrial Systems.

Functions

- Synchronize & connect of generator CB.
- Synchronize & connect of bustie CB
- Start & stop of auxiliary diesel engine
- RPM setpoint control of auxiliary diesel engine
- Optional control of primer pump for AE
- Optional control of fuel selection for AE
- Calculation of generator load (kW, kVar)
- Driving MSB instruments (kW, kVar)
- Load sharing between generators
- Optional AVR setpoint control

Features

- Built In Self Test (BIST)
- No serviceable parts
- All connections pluggable
- Indicating LED's
- All parameters stored in nonvolatile memory in the module.
- All parameters can be inspected and changed from operator stations connected to the CAN (LOS, MOS or ROS).
- No hardware configuration.
- Independent check synchronizer for safe CB connection



Supply voltage

- 18 - 32 VDC

Power consumption

- 14W @ 24 VDC

Operating temperature

- -15°C to +70°C

Storage temperature

- -25°C to +70°C

Max rel. humidity

- 96% noncondensing

IP Code

- IP20

ENV properties

- IACS E10 (2001)
- IEC 60945 (1996/2002)
- IEC 60255

Vibration

- 4 G

Weight of unit

- 1.7 kg

Mounting

- Screws (4 pcs M5)
- Pluggable screw terminals: 2.5mm²

Isolation

- Isolation per module in power port:
 - 50 VDC continuous
 - 50 VAC 1 minute
- 3 ways isolation between:
 - I/O Power
 - I/O CAN bus
 - Power CAN bus

Serial interfaces

- 2 CAN ports for redundant communication interface

8 Digital output

- All outputs max. 3 Amps 250VAC (relay)
- 1 pole change over. Inductive load.

2 ACV input (bus and generator)

- Input: 0-36Vrms
Maximum readable input 36Vrms
- Frequency scaling: 0-90 Hz
- Technical units: Free range
- Accuracy: ± 1 [%]

1 phase IAC. generator current input

- Current input: 0-1A or 0-5A
- Max readable input: 1.5A/7.5A.
- Max input: 15A.max 0.5s
- Technical units: Free range
- Accuracy: ± 1 [%]
outside 15-70°C add temp coefficient = 0.5% pr 10°C

2 x 0-20mA input

- 24V output: fused @ 100 mA
- Current input: 0-20 mA
- Maximum readable input: 30 mA
- Technical units: free range
- Accuracy: ± 0.5 %

4 Digital inputs

- Require dry contact or opto coupler.

2 Analogue output

- Range: ± 22 mA and ± 11 V
- Accuracy ± 1 [%]

BI ST (Built In Self Test)

- Module temp, Sensor excitation overload (digital input).

Type approval

- DNV, LRS, BV, GL, RINA, NKK, ABS, KR, RMR, CCS
(allows direct mounting on engines, compressors, etc. in suitable cabinets)

