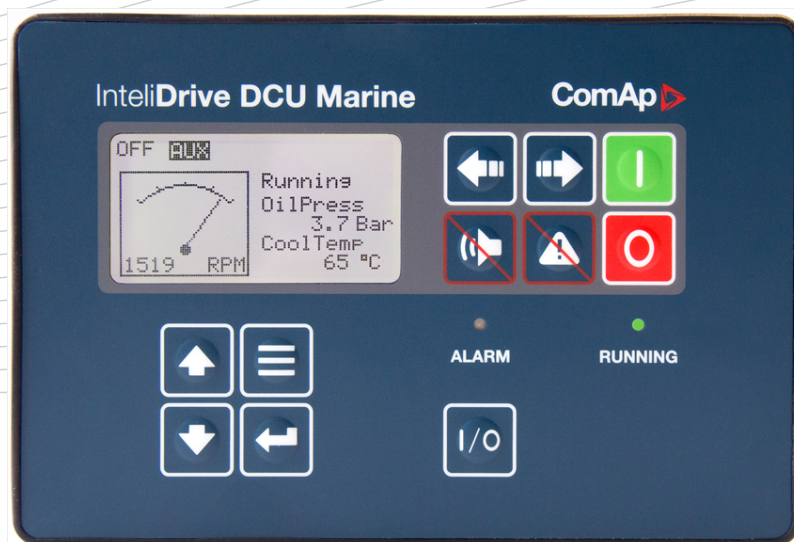# ComAp®
The heart of smart control

InteliDrive DCU Marine

Order code: ID-DCU MARINE

Datasheet

Embedded Certified Engine Controller for Marine Applications

Product description

▶ Specialized engine controller for Marine applications Propulsion, Auxiliary, Emergency

▶ Provide control, monitoring and protection for variable type of engines

▶ Direct communication with Electronic Control Units

Key features

▶ Support of machinery with multiple CAN devices (ECU, ACM, SCR etc.)

▶ Event driven History up to 4 000 records

▶ Redundant architecture: Main unit + Backup module

▶ Backup ID-RPU module with hardwired protections

▶ Plug&Play support of InteliVision display family of ComAp IV5CANBL, IV8MARINE, IV12TOEM

▶ Tier 4 Final + Stage 5 control and visualization

▶ Configurable large PLC interpret with PLC editor and monitor

▶ Connection to engine via primary J1939 and backup J1587 buses

▶ Speed/load control via J1939/J1587 buses, Modbus, Binary and Analogue signals

▶ Configurable Modbus Registers, Modbus RTU and Modbus TCP support for easy integration into the ship's control system

▶ Symmetrical load sharing for propulsion engines with J1939 (via CAN bus)

▶ Integrated load and clutch control

▶ Switching between primary and secondary battery

▶ Virtual shared inputs and outputs via CAN

▶ Over-speed and Emergency stop detection

▶ Communication capabilities including RS232, RS485, Modem, Modbus, Internet, Ethernet

▶ Remote monitoring via Modbus, TCP/IP, AirGate

▶ Cloud-based monitoring and control via WebSupervisor

▶ Active e-mail messaging and SMS

▶ Available also in low temperature (LT) version

▶ Extendable with ComAp peripheral modules

Application overview

▶ Single speed engine operation
  ● Auxiliary application
  ● Emergency application
  ● Combined application with harbor mode

▶ Variable speed engine operation
  ● Propulsion application

Technical data

Power supply

Power supply range	8-36 V DC
Current consumption (depends on supply voltage)	0.34 A at 8 V DC
	0.12 A / 24 V DC
	0.09 A / 36 V DC
Galvanically isolated from controller body	YES
Battery voltage measurement tolerance	2 % at 24 V
RTC battery lifetime	10 years

Note: RTC battery flat causes wrong Date&Time information only.

Operating conditions

Operating temperature std	-20 ˚C to +70 ˚C
Operating temperature LT	-40 ˚C to +70 ˚C
Storage temperature	-30 to +80 °C
Humidity	95 % w/o condensation
Flash memory data retention time	10 years
Protection front panel	IP 65
Standard conformity	
Electromagnetic Compatibility	EN 61000-6-2 ed.3:06
	EN 61000-6-4:07+A1:11
	IEC 60533, Ed. 2; 1999-11
Vibration	5-25 Hz, ± 1.6 mm
	25-100 Hz, a = 4 g
Shocks	a = 200 m/s2
Heat radiation	9 W

Dimensions and weight

Dimensions	183 × 123 × 47 mm
Weight	800 g

Binary inputs

Number of inputs	14
Input impedance	4.7 kΩ
Input range	0-36 V DC
Switching voltage level	0-2 V DC close contact
Voltage level	8-36 V DC
Minimal input duration	110 ms

Binary open collector outputs

Number of outputs	14
Maximum current - outputs BO1, BO2	1 A
Maximum current - outputs BO3 - BO14	0.5 A (2 A per group)
Maximum switching voltage	36 VDC

Speed pick-up input

Type of sensor	magnetic pick-up (connection by shielded cable is recommended)
Input impedance	10 kΩ
Input voltage range	2 Vpk-pk to 50 Veff

Minimum measured frequency	4 HZ
Maximum measured frequency	10 kHz (min. input voltage 6Vpk-pk)
Frequency measurement tolerance	1.5 %

D+ function

Max. D+ output current	300 mA
Guaranteed level for signal Charging OK	90% of supply voltage

Analog inputs (Not electrically separated)

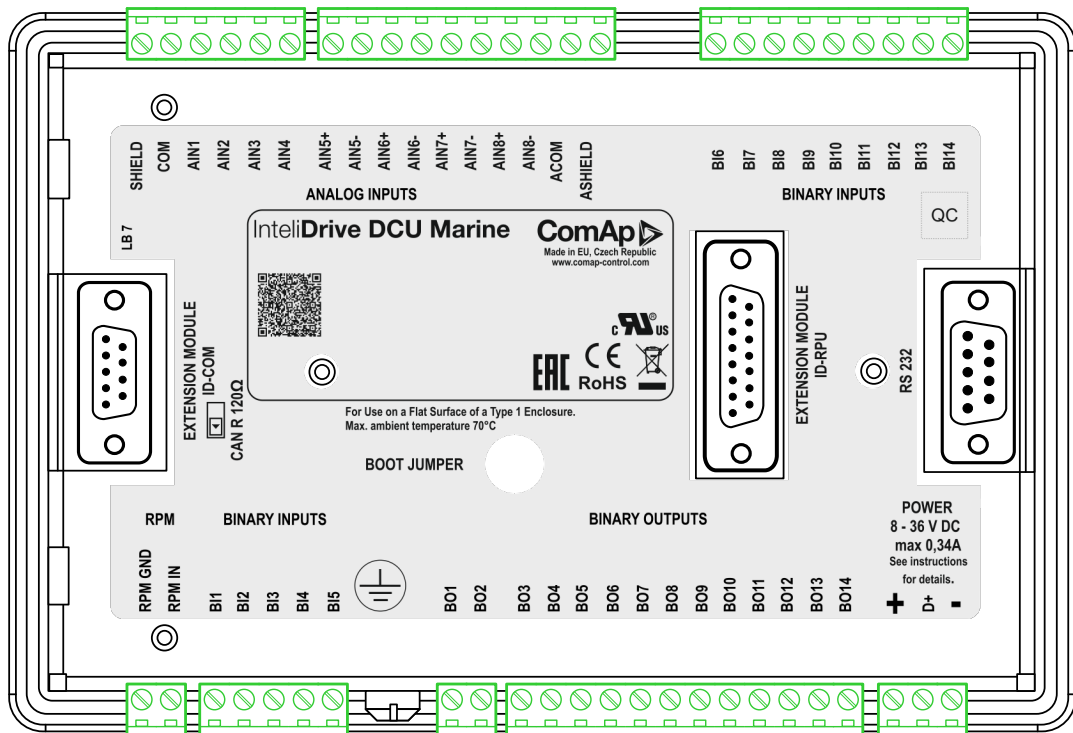|	
Group 1 AI1 – AI4	
Number of inputs	4 unipolar
Resolution	10 bits, max 4 decimals
Jumper selectable range	V, Ω, mA
Maximal resistance range	2500 Ω
Maximal voltage range	4.0 V
Maximal current range	0-20 mA
Input impedance	180 Ω for mA measuring
Input impedance	> 100 kΩ for V measuring
Resistance measurement tolerance	±2 % ±2 Ω out of measured value
Voltage measurement tolerance	±1 % ±1mV out of measured value
Current measurement tolerance	±1 % ±0,5mA out of measured value
Group 2 AI5 – AI8	
Number of inputs	4 bipolar
Resolution	Up to 16 bits
Jumper selectable range	V, Ω, mA, thermo coupler
Maximal resistance range	2500 Ω
Maximal voltage range	±1000 mV / 100 mV / 5 V

Note: The maximal input voltage offset is in the range from –2 to +5 V DC against controller minus power supply when AI5 to AI8 is used for differential voltage measuring.

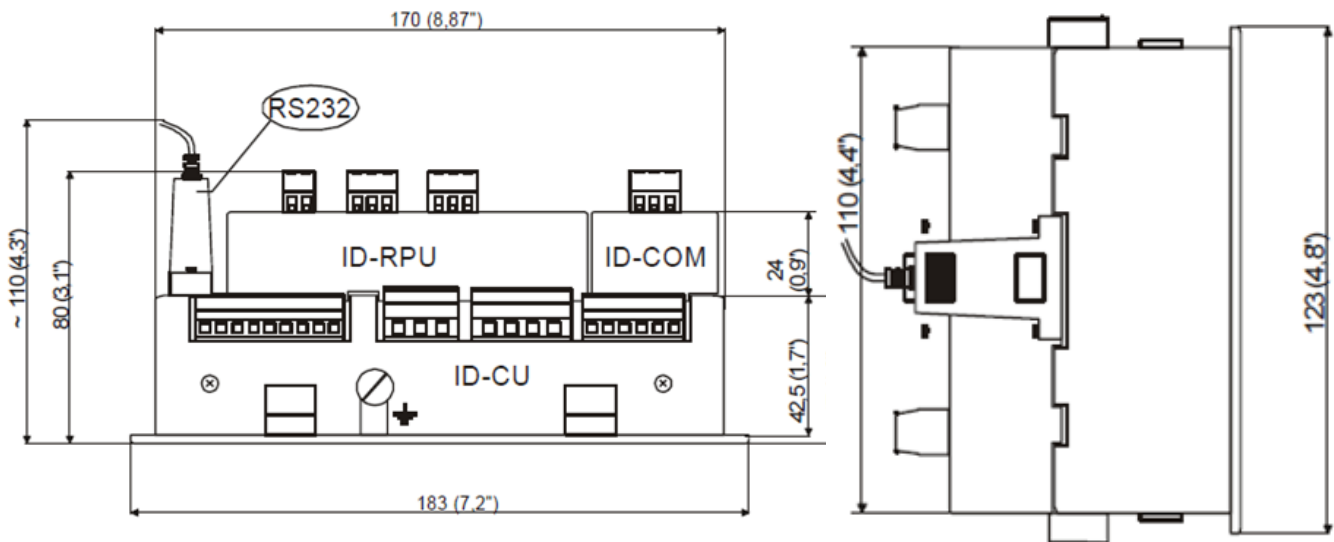|	
Maximal current range	±0-20 mA active
	0-20 mA passive
Input impedance	50 Ω for mA measuring
Input impedance	>100 kΩ for V measuring
Resistance measurement tolerance	±0.5 % ±2Ω out of measured value
Voltage measurement tolerance	±0.5 % ±1 mV out of measured value
Current measurement tolerance	±0.5 % ±0.5 mA out of measured value

RS232 interface

Maximal distance	10 m
Speed	up to 115.2 kBd

Dimensions, terminals and mounting

Grounding Terminal

Available extension modules

Product	Description	Order code
ID-RPU	Redundant Protection Unit	ID-RPU
ID-SCM, ID-SCM1	Speed Control Module	ID-SCM, ID-SCM1
ID-COM	Communication Module with CAN and RS485/J1587 interface	ID-COM
	Communication Module with CAN1/CAN2/J1587 interface	CM2J1708BZB
Inteli AIN8	8 Analog Input Channels and 1 RPM/Impulse Input Module	I-AIN8
Inteli AIN8TC	8 Analog Channels Module	I-AIN8TC
Inteli IO8/8	Binary Inputs/Outputs and Analog Outputs Module	I-IO8/8
Inteli AIO9/1	Analog Input Output Module	I-AIO9/1
IGS-PTM	Analog/Binary Input/Output Module	IGS-PTM
IS-AIN8	Analogue Input Module	IS-AIN8
IS-AIN8TC	Module for Thermocouple Measurement	IS-AIN8TC
IS-BIN16/8	Binary Input/Output Module	IS-BIN16/8
I-AOUT8	Analog Output Module	I-AOUT8
IGL-RA15	Remote Annunciator	EM2IGLRABAA

Related products

Product	Description	Order code
InternetBridge-NT	3G Communication Module with Cellular/Ethernet Connection	IB-NT
	4G EU market	CM2IB4GEBFB
	4G USA+Canada market	CM2IB4GABFB
	4G Japan market	CM2IB4GJBFB
InteliVision 5	5.7" colour display unit with buttons (can be equipped by backlit buttons and Marine certification)	INTELIVISION 5 INTELIVISION 5 CAN INTELIVISION 5 CAN Backlit
InteliVision 8	Marine Approved 8" Colour Display Unit for InteliGen NT/InteliSys NT and InteliDrive Family of Controllers	InteliVision 8 Marine
InteliVision 12Touch OEM	Industrial operator panel equipped with 12,1" colour, multi-touch screen - dedicated together with the main ComAp controller to visualise and control various applications	RD112OEMBZH
I-CB	ECU Communication Bridge	I-CB/CAT DIESEL I-CB/CAT GAS I-CB/DEUTZTEM I-CB/MODBUS I-CB/MTU I-CB/MTU ECS I-CB/MTU SIAM4000

Certificates and standards

▶ EN 61000-6-2 ed.3:06	▶ DNV-GL	▶ RMR
▶ EN 61000-6-4:07+A1:11	▶ LR	▶ CCS
	▶ BV	▶ CRS
	▶ ABS	▶ RINA

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