

CANopen SERIES

MASTER
UNIT



CANmaster

General description

The **Master unit** is an electronic control unit with CAN-bus/CANopen communication that is used as the central control unit in the CANmaster[®] control system but can also be used as a stand-alone control unit.

The Master unit contains the machine's application program and controls and monitors all the control units included in the system. 4 double-acting closed loop regulated PWM outputs and a total of 23 I/Os for analog and digital signals are included where a number of I/Os can be user defined as either input or output.

CAN-bus/CANopen is used as the main communication protocol but the unit is also provided with a separate CAN-bus SAE J1939 port that can be used for integrated control and monitoring of external systems such as electronically controlled diesel engines and powershift gearboxes.

A central system error log in the Master unit logs all errors that occur in the entire CANmaster system. The errors are saved with information about the error type, date and time stamp.

2 diagnostic LEDs on top shows the status for the CPU (green) and CAN-bus (yellow) communication, covering all control units included in the system.

The housing have a protection class IP65 and permits placement anywhere on the machine.



Application areas

- Mobile machinery; control of working hydraulics, hydrostatic transmissions, powershift boxes, diesel engines and braking systems.

Technical Data

General data

Supply Voltage	11-30 VDC
Operating temp.	-40° C to +70° C
Max. current power output	15 A, total
Housing material	Aluminum
Housing breathing filter	Gore-Tex [®] membrane
IP protection class	IP65 (IEC 60529)
EMC class	Automotive.
Shock	IEC 60068-2-27 Es, 30g
Bump	IEC 60068-2-29 Eb, 10g
Vibration	IEC 60068-2-64, Random 10-250 Hz
Test level, IEC-tests	IEC 60721-3-5 Class 5M3
Weight	0.95 kg
Connectors	AMPSEAL 35 + 14 pin

Data communication

CAN-1	CANopen/CAN 2.0B, 500 kbps
CAN-2	CAN SAE J1939/CAN 2.0B, 250 kbps
PC-communication	RS232, 9600 kbps

Programming tool

Hydratronics CANmaster PC-TOOL[™]
graphical programming tool.

I/O data

I/O-type	Qty	Data
Analog input	6-max 11	Analog input 0-5V, A/D-10 bit resolution
Analog output	1	Analog output 0-5V, max 20 mA
Digital input	0-max 12	Digital input, +24V
Digital output	4-max 8	Digital output, +24V max 2 A
PWM-output	4	Double acting PWM output 0 - max 1600 mA, 10 bit
Frequency input	0-max 4	Frequency input max 15000 Hz
Supply output for sensors	1	+5VDC

Comprehensive technical information:
User Manual Technical Data & Installation
Part No. 5011 0003-GB

Ordering Information

MASTER control unit compl. Part No. 5010 3000

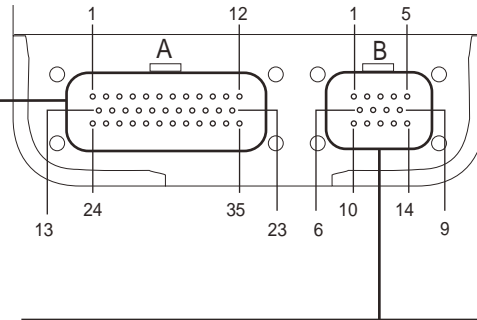
Connector pin assignments

Pin No.	I/O function / designation	
01	Analog IN 04	
02	Analog IN 05	
03	Analog IN 06	
04	Analog IN 14	Digital IN 00
05	Analog IN 13	Digital IN 01
06	Frequency IN 00	Digital IN 10
07	Digital OUT 00	
08	Digital OUT 01	
09	PWM-OUT 00(+)	
10	PWM-OUT 01(+)	
11	PWM-OUT 02(+)	
12	PWM-OUT 03(+)	
13	Analog IN 07	
14	Analog IN 08	
15	Analog IN 12	Digital IN 02
16	Analog IN 11	Digital IN 03
17	Frequency IN 01	Digital IN 11
18	Digital OUT 02	
19	Digital OUT 03	
20	PWM-OUT 00 RET	
21	PWM-OUT 01 RET	
22	PWM-OUT 02 RET	
23	PWM-OUT 03 RET	
24	Analog IN 09	
25	Analog IN 10	Analog OUT 00
26	Frequency IN 02	Digital IN 04
27	Frequency IN 03	Digital IN 05
28	Digital OUT 04	Digital IN 06
29	Digital OUT 05	Digital IN 07
30	Digital OUT 06	Digital IN 08
31	Digital OUT 07	Digital IN 09
32	PWM OUT 00(-)	
33	PWM OUT 01(-)	
34	PWM OUT 02(-)	
35	PWM OUT 03(-)	

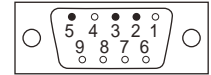
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RS232 connector
9-pin D-sub female



Communication port for
program download and
upload of error log.
Permanent connection
required.
(Not supplied with unit)

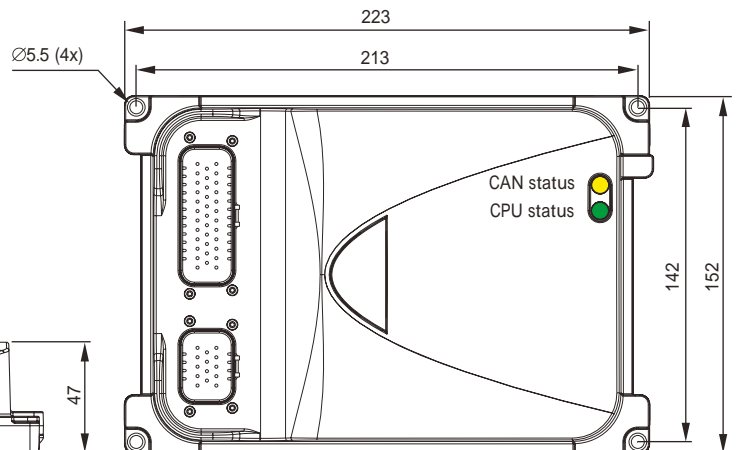
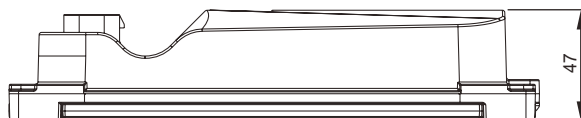
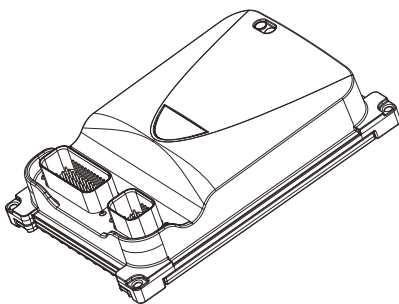
Pin No.	Designation	Function
01	Vbatt SYS	+24V powersupply MASTER-unit electronics
02	Vbatt GND	0 V MASTER-unit, system electronics
03	-Vref sensor GND	0 V reference for sensors
04	+Vref sensor	+5V supply for sensors
05	+Vbatt Power OUT	+24V powersupply for power outputs
06	CAN1_L	CAN-bus signal L, CANopen
07	CAN1_H	CAN-bus signal H, CANopen
08	CAN1_L	CAN-bus signal L, CANopen
09	CAN1_H	CAN-bus signal H, CANopen
10	CAN2_L	CAN-bus signal L, CAN-SAE J1939
11	CAN2_H	CAN-bus signal H, CAN-SAE J1939
12	RS232 GND	Ground terminal RS232. RS232 Pin 5
13	RS232 Rx	Receive data RS232 from PC. RS232 Pin 3
14	RS232 Tx	Transmit data RS232 to PC. RS232 Pin 2

Mating connector specification

Mating connectors	A	B
AMPSEAL, Part No.	776164-1	776273-1
Hydratronics Part No.	5015 1000	5015 1001
Contacts AMP, type	Cu-Sn, 0.5-1.5 mm ² 16-20 AWG	Gold plated 0.5-1.5 mm ² 16-20 AWG
Loose contacts, AMP Part No.	770854-1	770854-3
Hydratronics Part No.	5015 1002	5015 1007
Contacts on strap AMP Part No.	770520-1	770520-3
Crimp tool, AMP Part No.	0-0058529-1	
Hydratronics Part No.	5015 1008	

(Mating connectors not supplied with unit)

Dimensions (mm)



Supported by a worldwide network



CONTACT INFORMATION

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