

## HCM2000S, HYBRID CONTROLLER MODULE

The **HCM2000S** Hybrid controller is a smart I/O-module with wide range of features. Firmware enables complex and/or routine functions to be activated by simple bus commands.

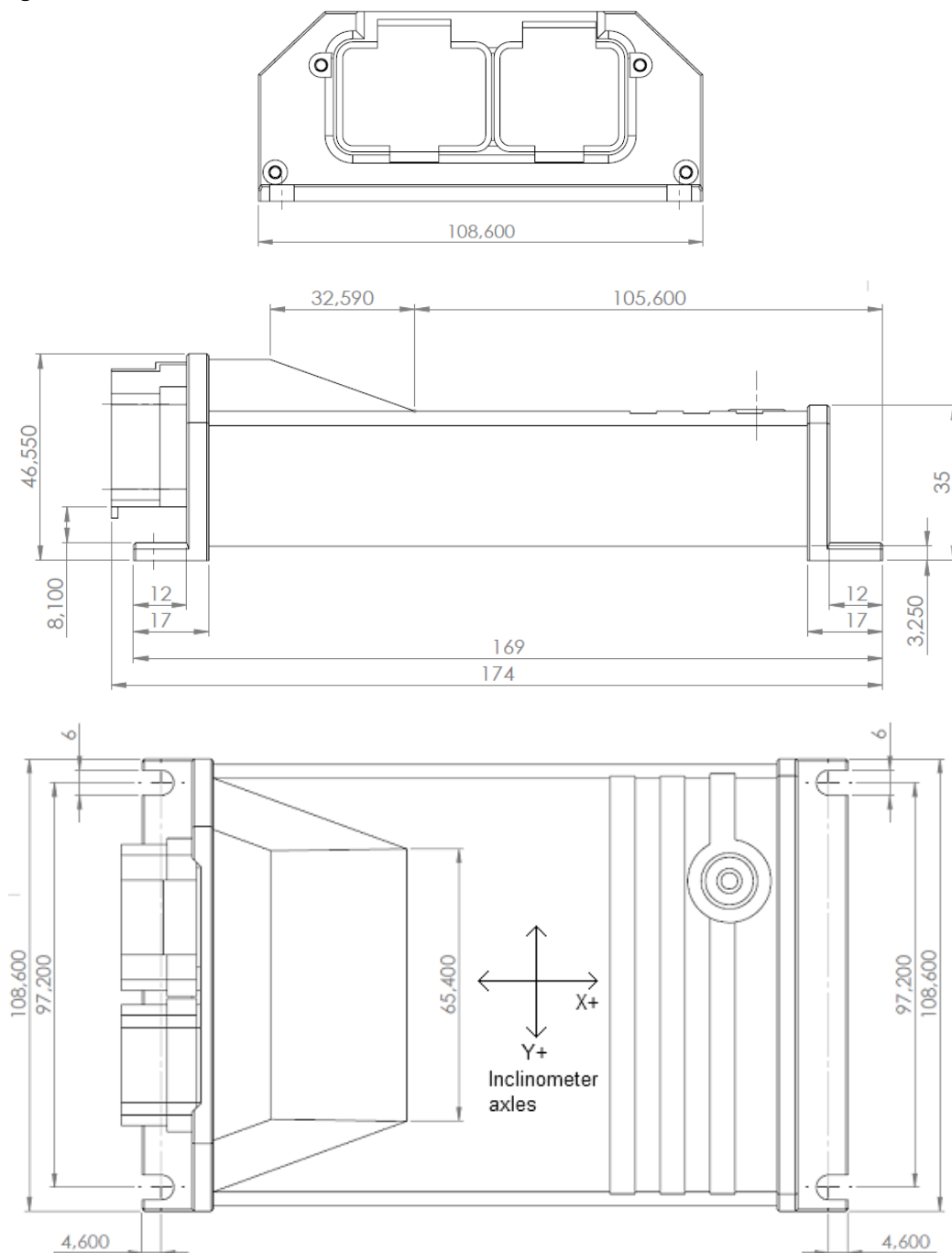
Cost-effective I/O makes the control systems possible also for minor serial production manufacturers. HCM2000S is plugged to systems with CAN-connection.

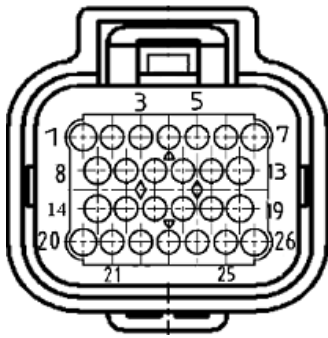


HCM2000S module installation can be either stand-alone or part of a CAN-based control system.

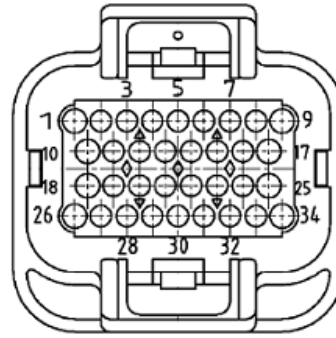
Technical data	
Housing	Aluminium
Weight	0,6 kg
Main dimensions (w x l x h)	109 mm x 169 mm x 47 mm
Mounting	4 x M5
Housing protection	IP67
Connection	AMP Super Seal 26 + 34 pin connectors
Operating voltage	9 - 36 V
Operating temperature	-40 - +85 °C
Current consumption	< 100 mA (without external load)
EMC approved by	Commission Directive 2004/104/EC
<b>2 * CAN interface</b>	CAN interface 2.0 B, ISO 11898
Baud rate	20 Kbits/s - 1Mbit/s (default 250 Kbits/s)
Address input	Node ID is set with pin X1/17 Factory default dec24 if module node ID pin not connected Adjustable via object dictionary/analog input
<b>Digital / Frequency inputs</b>	4 pcs low < 3,5 V; high > 5 V max 8 kHz input resistance 10 kΩ to GND
<b>Digital / Frequency inputs</b>	4 pcs NAMUR inputs low < 3,5 V; high > 5 V max 8 kHz active 5 mA load, input resistance 150 Ω to GND
<b>Analog / Digital Inputs</b>	8 pcs, current limit 22 mA 0 - 22 mA (5 pcs) / 0 - 3,3 V (3 pcs): HCM2000S 0 - 15,6 V (8 pcs) (104 kΩ to GND): HCM2000S-P1

Technical data	
<b>Digital Outputs / Inputs</b>	8 pcs High side switch, max 2,7 A. DI low < 3,5V ; high > 5V
<b>DO / DI / Proportional outputs</b>	24 pcs High side driver, max 2,7 A. Adjustable dither 62 Hz - 1 kHz, DI low < 3,5V ; high > 5V
<b>Inclinometer (optional)</b>	
Measurement range	Angle of inclination $\pm 90^\circ$
Measurement accuracy	Angle of inclination $0,1^\circ$ (between $\pm 45^\circ$ )

**Housing dimensions:**


**Connector structure:**

**X1**

AMP 3-1437290-7


**X2**

AMP 4-1437290-0

AMP Super Seal female contacts (0,75 - 1,25 mm<sup>2</sup>): AMP 3-1447221-3

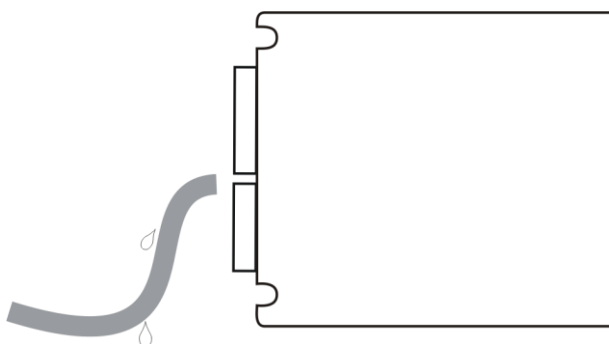
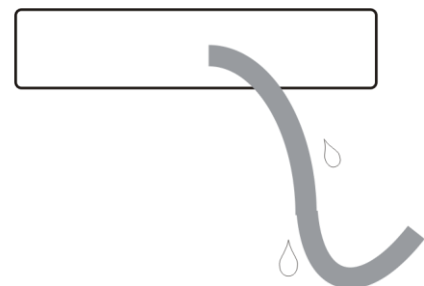
Filler plug to blank spaces: Deutsch 0413-204-2005 (Must be installed to achieve waterproofness)

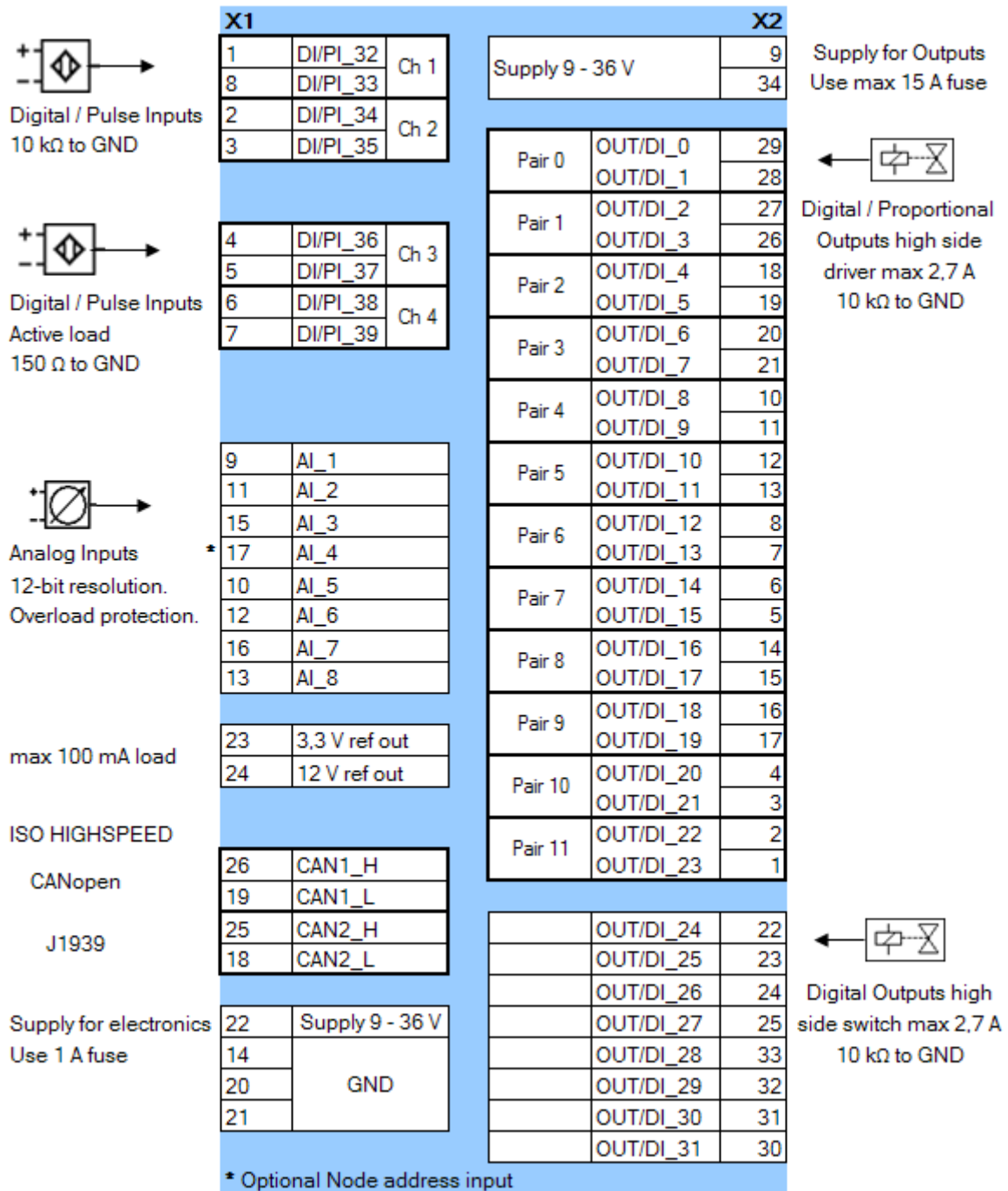
**Mounting:**

The HCM2000S is fixed to flat surface mounting panel with four M5 screws.

The module should preferably be mounted with connectors pointing downwards.

If the top-down position is not possible the two alternative mounting directions are either vertically or horizontally. With these alternate positions it is vital to leave some loose cabling hanging in a downward curve to prevent any moisture from accessing the module through the connectors.

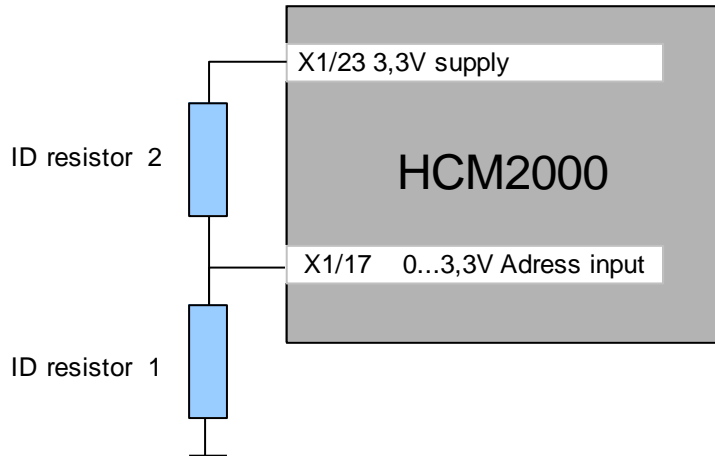

*Top-down position*

*Vertical position and cable direction*

*Horizontal position and cable direction*

**Block diagram (HCM2000S):**

**HCM2000S different models:**

0 - 22 mA (5 pcs) / 0 - 3,3 V (3 pcs) [12 V & 3,3 V ref out]: HCM2000S  
 0 - 22 mA (5 pcs) / 0 - 3,3 V (3 pcs) [12 V & 3,3 V ref out]: HCM2000S-L1 (inclinometer)

0 - 15,6 V (8 pcs) [2 pcs 10 V ref out]: HCM2000S-P1  
 0 - 15,6 V (8 pcs) [2 pcs 10 V ref out]: HCM2000S-P2 (inclinometer)

Example use of external node-id resistor in HCM2000S:



ID resistor 1	ID resistor 2	X1/17 / V	Node-Id offset
None	0 ohm	3,3	13
None	33 k ohm	2,56	11
None	100 k ohm	2,13	9
None	None	1,65	7
100 k ohm	None	1,17	5
33 k ohm	None	0,74	3
0 ohm	None	0	1

These resistor values apply only to HCM2000S.

Exertus reserves the right to change product details without prior notice