

HCM2110S Power Module



- 52 Configurable IOs
- Programmable
- Designed for 12 VDC and 24 VDC
- H-Bridge

HCM2110S is a compact and versatile power output module equipped with H-Bridge. HCM2110S is designed to supply and control air-condition, lights, central locking, blowers and other high-powered equipment where normal outputs are not powerful enough for device operation.

Technical Information

- 9-32 VDC operating voltage range
(Protected against reverse polarity)
- Maximum simultaneous load 120 A
- Separate supply pins on each 3 connectors
- -40...+85 °C operating temperature range
- ARM Cortex M4 168 MHZ CPU
- 192 kB RAM, 1 MB flash memory
- IP67 aluminium housing
- Weight 0.7 kg
- Main dimensions 172 mm x 122 mm x 35 mm
- Three 26 pin AMP Super Seal connector
- 1x CAN Interface 2.0B, ISO 11898
- 1x RS232 interface
- Real time clock (RTC)

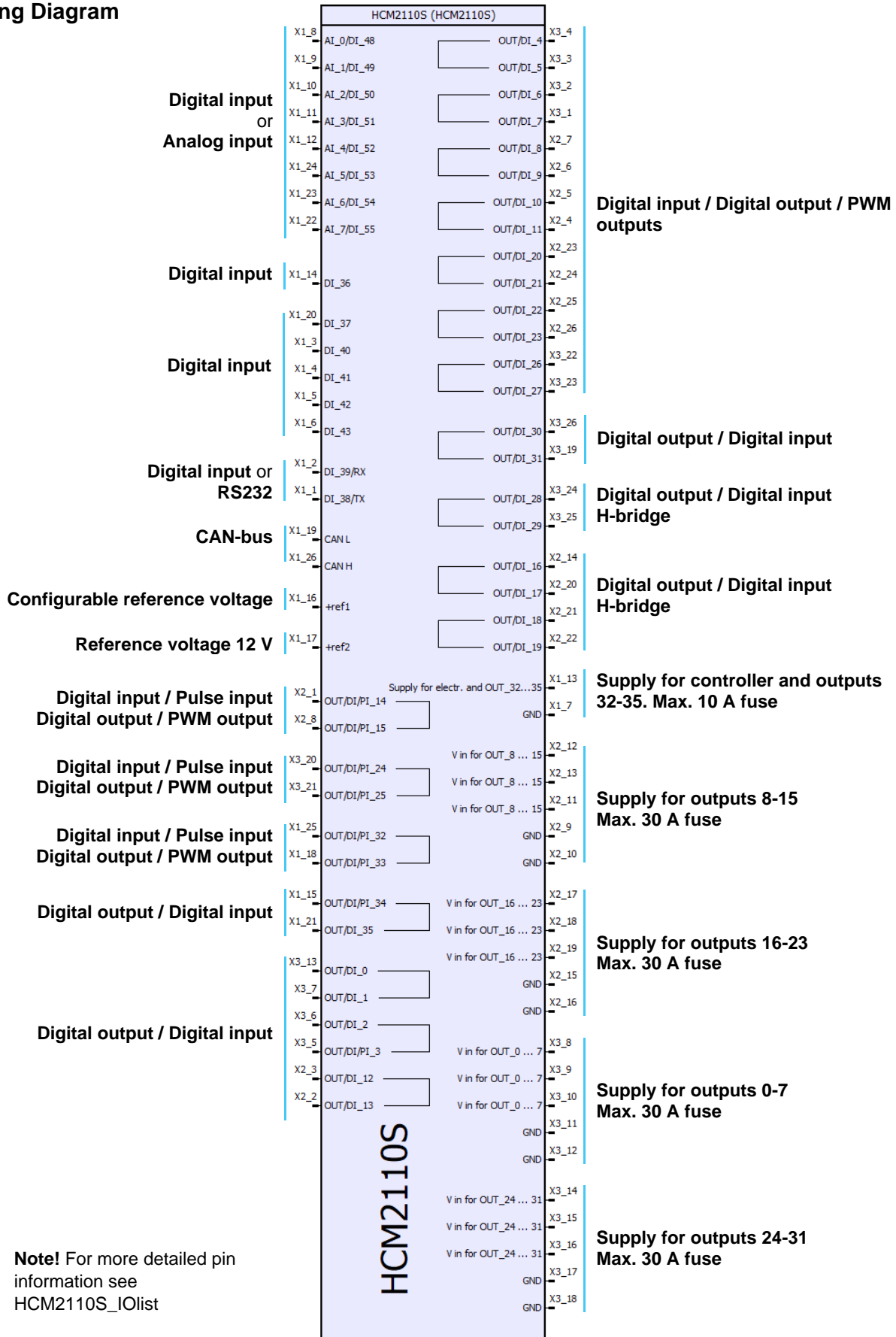
I/O Interface

- 52 configurable IO-lines
- The I/O interface is protected against short to GND and to supply voltage
- Two reference voltage outputs:
 - 1 configurable: 3.3 / 5 / 10 / 12 V (max 250 mA)
 - 1 fixed: 12 V (max 250 mA)

I/O Interface (continued)

Amount	Configurability	Details
8	Digital input Analog input	Low < 2,8 V, High > 5,7 V, max 100 Hz 12-bit AD conversion 0-18,6 V, 57 kΩ 0-22 mA, 150 Ω
5	Digital input (PNP)	Low < 3,3 V, High > 5 V, max 100 Hz
2	Digital input (PNP)	Low < 2 V, High > 6,5 V, max 100 Hz
1	Digital input (NPN)	Low < 3,5 V, High > 4,7 V, max 100 Hz
2	Digital input (PNP) Digital output PWM output	Low < 3,3 V, High > 5 V, max 100 Hz Low side driver, max 8 A Low side driver, max 8 A
6	Digital input Digital output PWM output	Low < 3,3 V, High > 5 V, max 100 Hz High side driver, max. 3 A High side driver, max. 3 A
14	Digital input Digital output PWM output	Low < 3,3 V, High > 5 V, max 100 Hz High side driver, max. 6 A High side driver, max. 6 A
4	Digital input Digital output PWM output 2 x H-bridge	Low < 3,3 V, High > 5 V, max 100 Hz High side / low side driver, max. 3 A High side / low side driver, max. 3 A Max 3 A
2	Digital input Digital output PWM output PWM output 1 x H-bridge	Low < 3,3 V, High > 5 V, max 100 Hz High side / low side driver, max. 2 A High side driver, max. 2 A Low side driver, max. 2 A Max 2 A
2	Digital input (PNP) Pulse input (PNP) Digital output	Low < 3,3 V, High > 5 V, max. 100 Hz Low < 3,3 V, High > 5 V, max. 8 kHz High side driver, max. 2 A
2	Digital input Digital output	Low < 3,3 V, High > 5 V, max. 100 Hz High side driver, max. 2 A
2	Digital input (PNP) Pulse input (PNP) Digital output PWM output	Low < 3,3 V, High > 5 V, max. 100 Hz Low < 3,3 V, High > 5 V, max. 8 kHz High side driver, max. 3 A High side driver, max. 3 A
2	Digital input (PNP) Pulse input (PNP) Digital output PWM output	Low < 3,3 V, High > 5 V, max. 100 Hz Low < 3,3 V, High > 5 V, max. 8 kHz High side driver, max. 6 A High side driver, max. 6 A

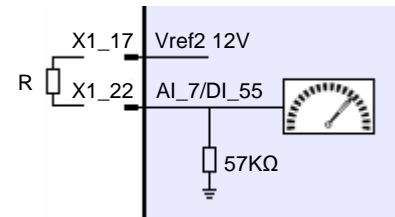
Wiring Diagram



Note! For more detailed pin information see HCM2110S_IOList

Node ID

Voltage at AI_7	Node ID offset	R (with 12 V ref)
0 V	1	Open
1,7 V	3	360 kΩ
3,4 V	5	150 kΩ
5,2 V	7	75 kΩ
6,9 V	9	43 kΩ
8,6 V	11	22 kΩ
10,3 V	13	Closed



As default the unit's node address is set by voltage level at AI_7.

Node ID = Base Node ID (70) + Node ID offset. See CANopen profile for further details.

Reference voltage 1 (+ref1 / X1_16) provides 5 V during boot and reference voltage 2 (+ref2 / X1_17) provides 12 V.

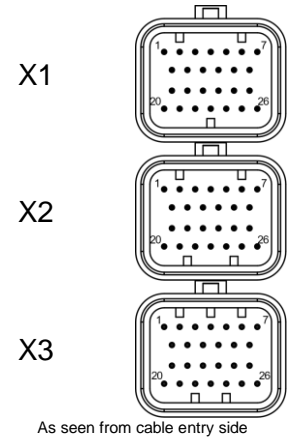
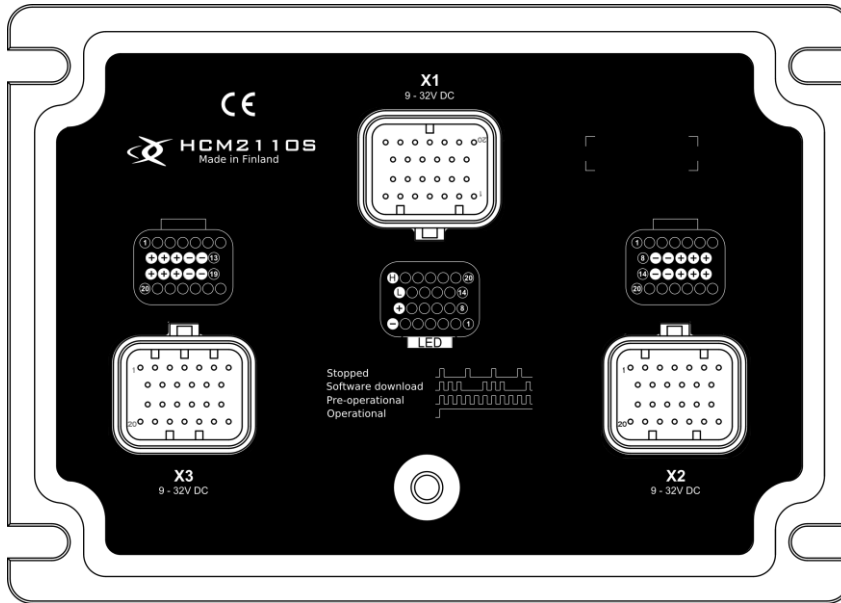
Quadrature encoders

In HCM2110S there are four separate quadrature encoders. Quadrature input signals (pairs) are compared to each other and with that information module is able to know direction.

Available pins are:

Pair	Pin A	Pin B
1	X2_1	X2_8
2	X3_20	X3_21
3	X1_25	X1_18
4	X1_15	X3_5

Connectors



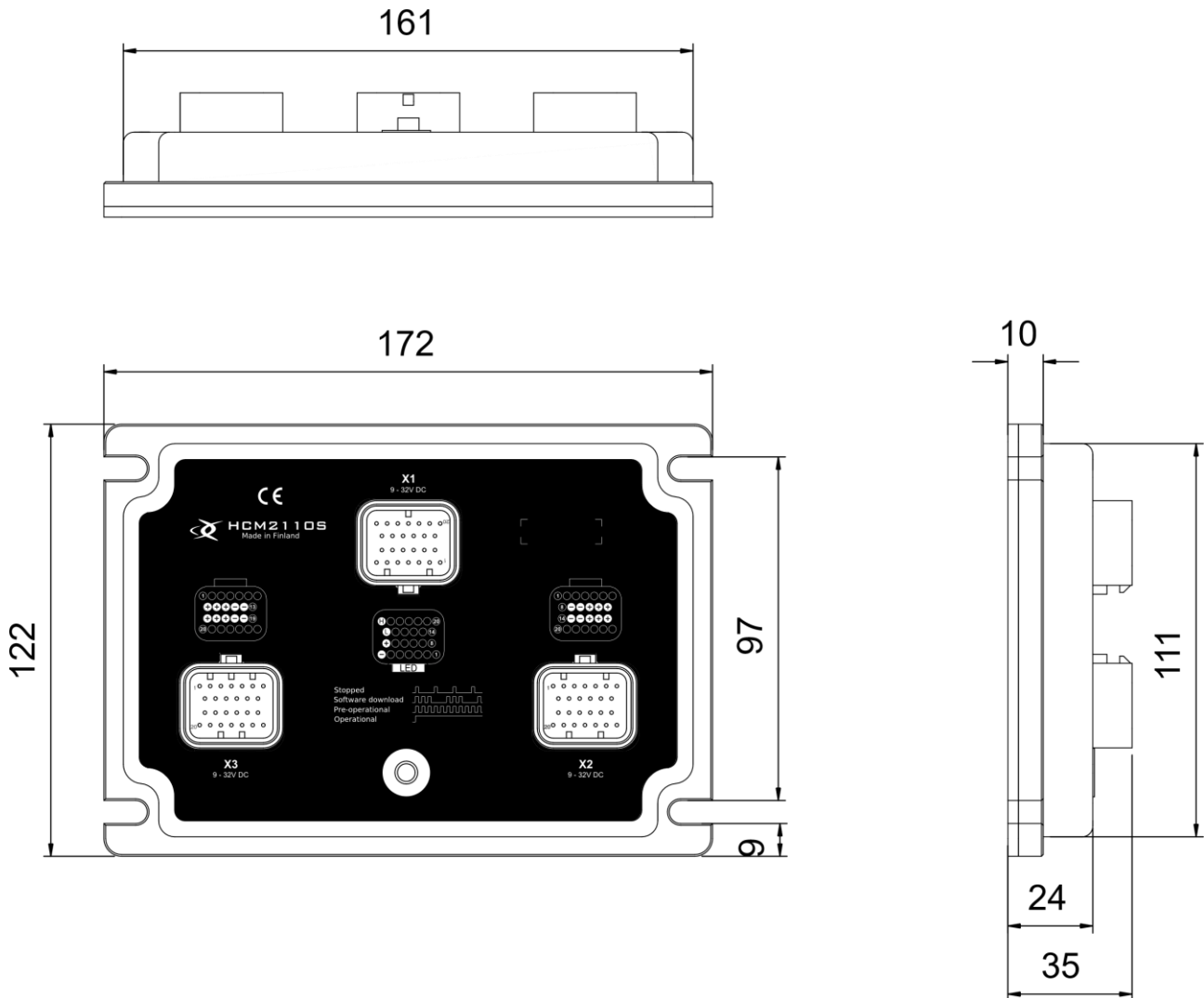
Superseal connectors

Superseal connector needed:

X1 : Super Seal Connector Plug Housing	Ø1.6 - 2.2 mm - AMP 3-1437290-7
X2 : Super Seal Connector Plug Housing	Ø1.6 - 2.2 mm - AMP 3-1437290-8
X3 : Super Seal Connector Plug Housing	Ø1.6 - 2.2 mm - AMP 1473416-1
Receptacle Contact (0.75 – 1.25mm ²)	AMP 3-1447221-3
Filler Plug *)	AMP 4-1437284-3 Deutsch 0413-204-2005

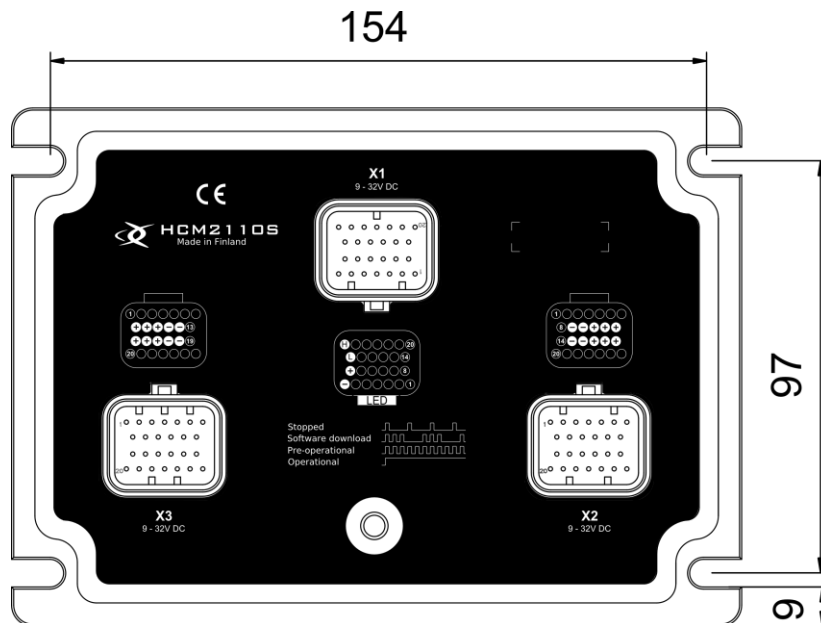
*) Filler plugs must be used on empty cavities to reach waterproofness

Dimensions



Mounting

HCM2110S is mounted on a flat surface with four M5 screws.



Note! Extra care should be paid on grounding of HCM2100S. It is recommended to use star lock washer under fastening bolt. Also, extra attention should be paid that lock washer goes through the paint layer.

The preferred mounting position is connectors pointing downwards. If the unit is mounted connectors pointing to the side, then it is vital to leave some loose cable with a downward cue to prevent the ingress of moisture through connector.

