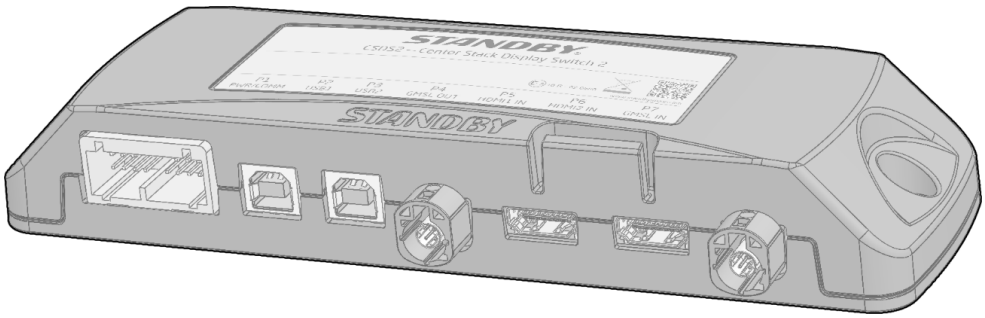
CSDS2 – Center Stack Display Switch 2

For optimal system performance, we recommend installing and operating CSDS2 exclusively in emergency-response-prepared Volvo XC60 and XC90 vehicles from model year 2025. Compatibility with other vehicle platforms has not been verified and is therefore not advised.

CSDS2 is a unique product that makes it possible to operate Standby's or other external computers via the vehicle's original screen.

CSDS2 integrates with the vehicle's infotainment system, providing a clean and safe driver environment and control of vehicle and emergency functions or common PC functions.



Contents

The ► symbols in this manual are references to other manual sections.
(►2.2) for example, refers to section 2.2.

Running modes

CSDS2 can be run in two modes –

Standalone mode (default)

see section ►5

or

Standby System mode

see section ►6

Acronyms

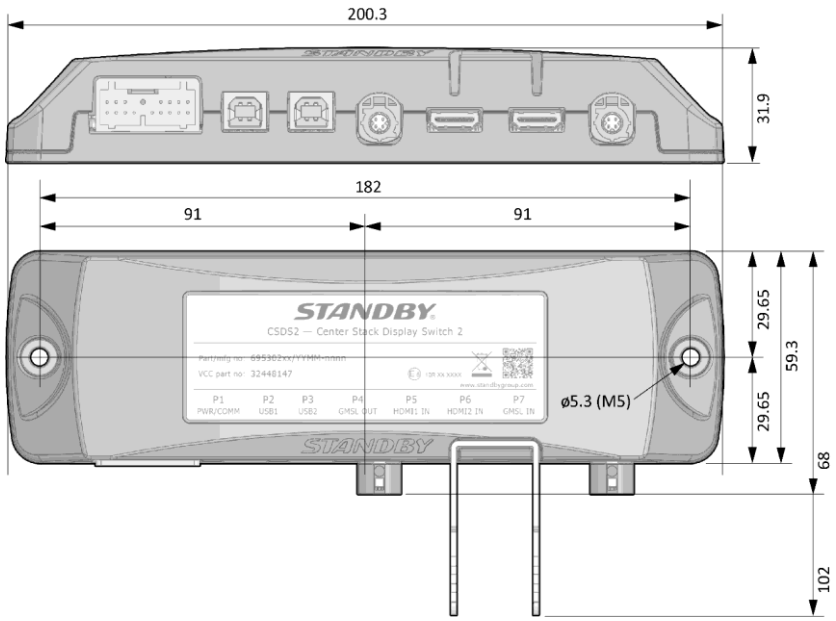
CSD	Center Stack Display
IHU	Infotainment Head Unit
HDMI	High-Definition Multimedia Interface
GMSL	Gigabit Multimedia Serial Link
USB	Universal Serial Bus
CAN	Controller Area Network

1 Technical data

Supply voltage	+10–30 VDC
Current consumption	200 mA / 12V
Recommended fuse	1 A
Housing material	PC/ABS

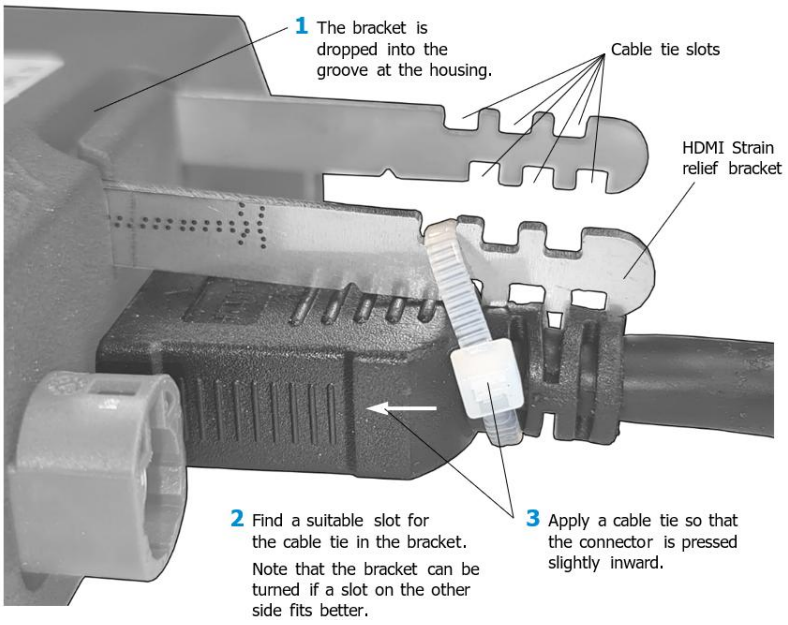
Dimensions	201x32x68mm
Mounting	Surface mounting
Approvals	ECE R10 (EMC)
Ambient temperature	-40°C to +85°C

2 Dimensions and mounting

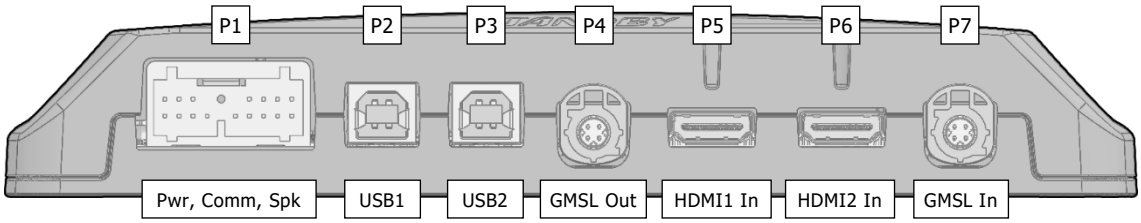


3 Strain Relief Bracket

Below is an example on how to use the optional strain relief bracket for the HDMI connectors.

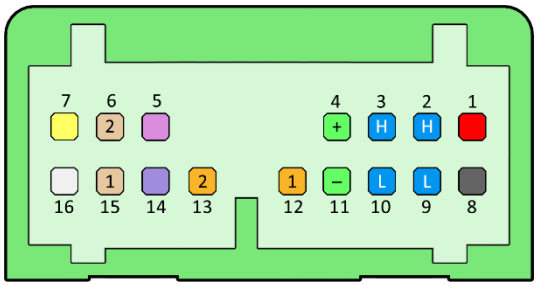


4 Connections



DESIGN.	NAME	FUNCTION
P1	Pwr, Comm, Spk	Power, Communication & Control, Speakers
P2	USB1	Touch screen data to Display source 1
P3	USB2	Touch screen data to Display source 2
P4	GMSL Out	Image data to CSD
P5	HDMI1 In	Display source HDMI1 input (image and sound)
P6	HDMI2 In	Display source HDMI2 input (image and sound)
P7	GMSL In	Display source IHU input (image)

4.1 The P1 Connector

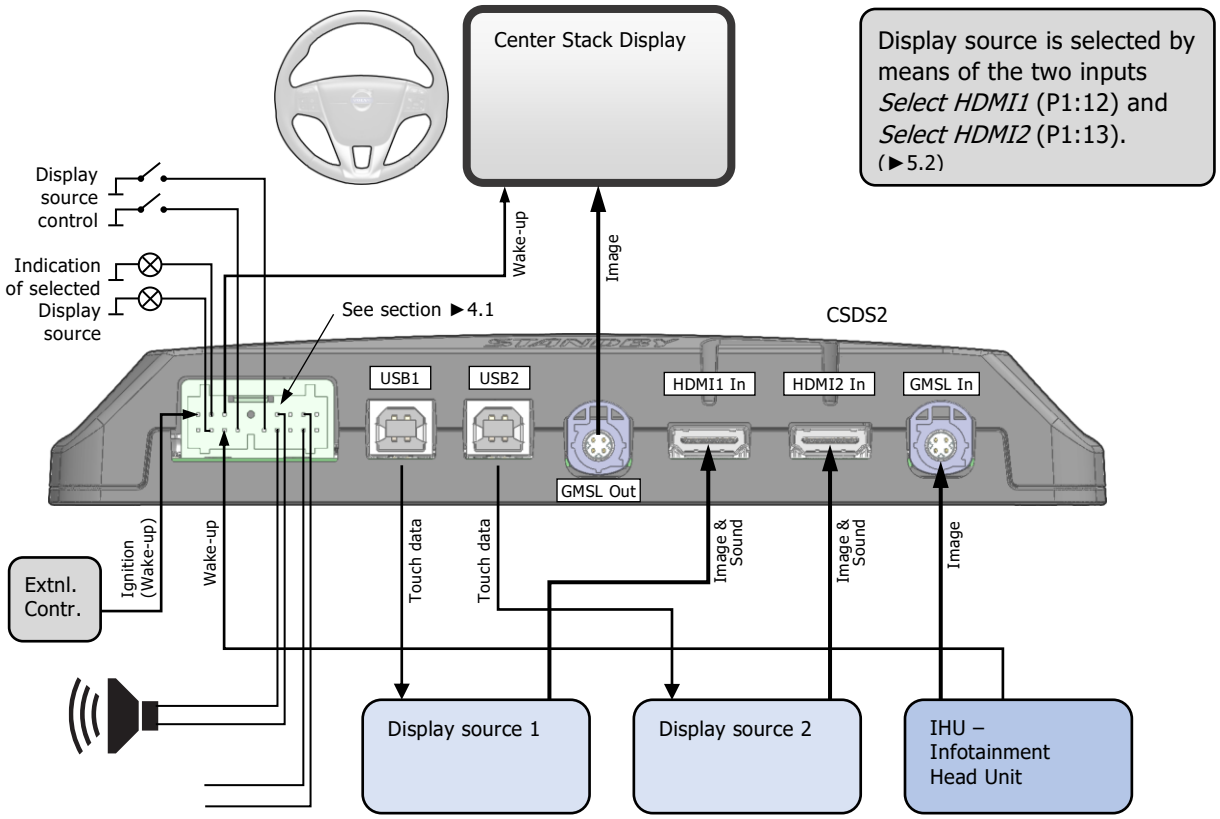


Pinout

PIN	SYMB	DIR	SIGNAL
1		--	+12V Supply
2	H	--	CANH In (►5.1) (►6.1) Pins 2 and 3 are internally connected.
3	H	--	CANH Out (►6.1) Not used in Standalone mode. Pins 2 and 3 are internally connected.
4	+	Out	Speaker + Impedance 4-8 ohm. Output power 1W.
5		Out	Wake-up to pin 9 CSD
6	2	Out	HDMI2 Selected (►5.3) Active HIGH (12V)
7		In	Ignition (Wake-up) System Wake-up from external controller. Active HIGH (12V). Triggered on positive edge. If Active the System can't go to sleep.
8		--	GND (0V)
9	L	--	CANL In (►5.1) (►6.1) Pins 9 and 10 are internally connected.

PIN	SYMB	DIR	SIGNAL
10	L	--	CANL Out (►6.1) Not used in Standalone mode. Pins 9 and 10 are internally connected.
11	–	Out	Speaker – Impedance 4-8 ohm. Output power 1W.
12	1	In	Select HDMI1 (►5.2) Not used in Standby System mode. Active LOW (0V). Function triggered on negative edge. If Active the System can't go to sleep.
13	2	In	Select HDMI2 (►5.2) Not used in Standby System mode. Active LOW (0V). Function triggered on negative edge. If Active the System can't go to sleep.
14		In	Wake-up from pin 9 IHU System Wake-up from IHU. Active HIGH (3-5V). Triggered on positive edge. If Active the System can't go to sleep.
15	1	Out	HDMI1 Selected (►5.3) Active HIGH (12V)
16		--	Spare (not used)

5 Standalone mode

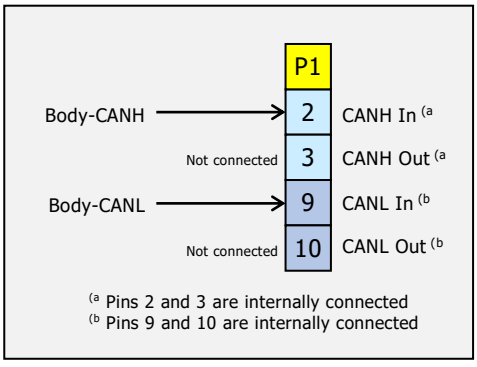


5.1 CAN bus connection

CAN-bus (Volvo Body-CAN) is connected to P1:2 (CANH In) and P1:9 (CANL In).

Note - This CAN connection is optional.

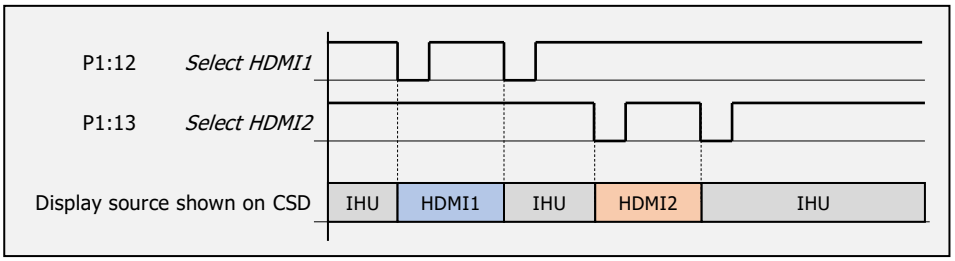
It is used with Volvo Body-CAN to make the automatically image switching to the reversing camera work.



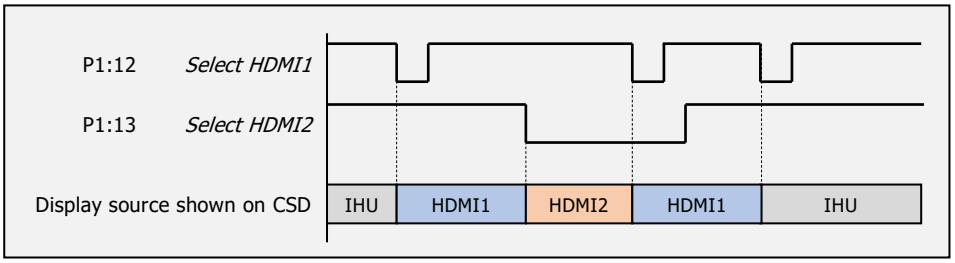
5.2 INPUT signals *Select HDMI1/2*

The Display control inputs on P1:12 and P1:13 (*Select HDMI1/2*) determine which display source will be shown on the Center Stack Display (IHU, HDMI1 or HDMI2).
(Note that these signals only work in Standalone mode.)

- The input signals are active LOW (0V) and the selection is triggered on negative edge.
- It is a toggling function – the first call selects; the second one deselects.
  See the timing diagram below.



- However, if the other HDMI input is selected before the first one is deselected, the other HDMI input will show. The "latest" signal of the two will always take effect (see below, where HDMI1 will show even if HDMI2 hasn't been deselected).

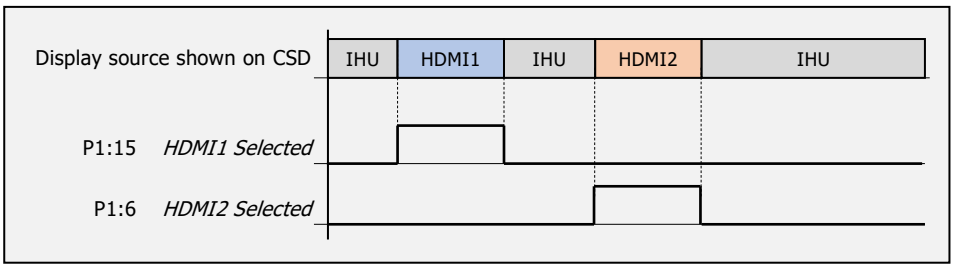


5.3 OUTPUT signals *HDMI1/2 Selected*

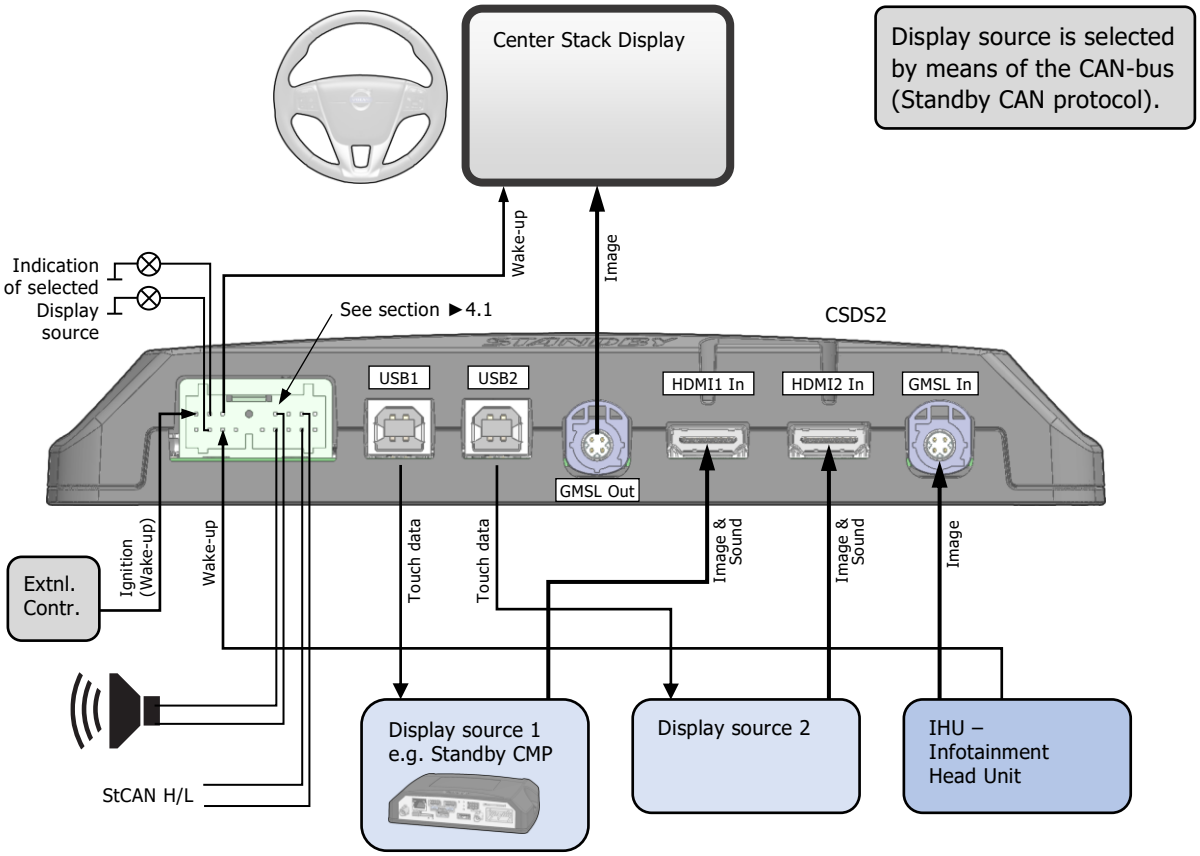
The Display state outputs on P1:15 and P1:6 (*HDMI1/2 Selected*) show which display source is selected for the Center Stack Display (IHU, HDMI1 or HDMI2).

- The outputs are active HIGH (12V) and show whether HDMI1 or HDMI2 is selected.
  If both outputs are LOW (0V) the IHU image is displayed.

  See the timing diagram below.



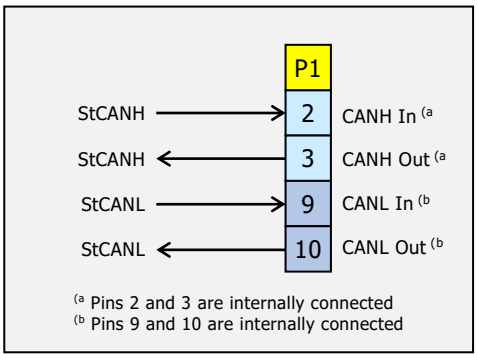
6 Standby System mode



6.1 CAN bus connection

A Standby system's CAN-bus (Standby CAN protocol) is connected to P1:2 (CANH In) and P1:9 (CANL In).

The default mode in which CSDS2 starts up is Standalone. If the unit after start-up detects Standby CAN traffic on the CAN bus it will change to Standby System mode (otherwise, it will remain in Standalone mode).



6.2 OUTPUT signals *HDMI1/2 Selected*

The Display state outputs on P1:15 and P1:6 (*HDMI1/2 Selected*) show which display source is selected for the Center Stack Display (IHU, HDMI1 or HDMI2).

See section ►5.3 for more information.

Below is an example on how to use the optional strain relief bracket for the HDMI connectors.