Installation Procedure: D5/D7 MG MCC
Document number: 47706838
Release date: 06-2015

Installation Overview D5/D7 MG MCC

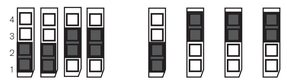
AUX, Emergency and Combined MCC Electrical connection box

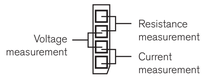
Jumper settings

The jumpers factory setting show below.

If application requires additional sensors then change jumper settings.
Refer to *Installation Manual*

MCU jumper settings*1

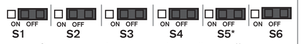




SDU jumper factory settings*2

AUX and combined AUX/EME is set:

EME is set:

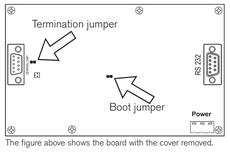


Overspeed shutdown can not be switched off.

* Should be ON if used as emergency stop.

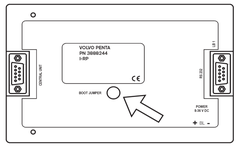
Remote Panel Jumper settings*3

Remove the cover to access termination jumper settings.
Remote panel CAN2 bus is terminated with120 Ohm resistor inside the unit.
If **one** Remote Panel is used, leave the jumper closed (default).
If **more than one** Remote Panel is installed to each driveline, the termination jumper need to have a removed (open) jumper on all units except for the last one in the chain.
This last unit should have a closed jumper setting.



The figure above shows the board with the cover removed.

Remote Panel Software update

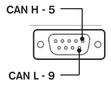


Remote Panel application software is uploaded automatically from MCU during power up. Base software (firmware) do not normally need to be downloaded. If future firmware updates are required, the unit can be reprogrammed.

1. Power off the unit.
2. Remove the rubber plug and temporarily remove the boot jumper.
3. Connect programming cable to RS232 and download firmware (refer to VPPN MCC site for details)
4. Power off the unit.
5. Put back the boot jumper and the rubber plug.

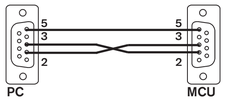
Remote Panel CAN2 Connection

The D-Sub (CENTRAL UNIT interface) uses the following pins:



Cable for DriveConfig/DriveMonitor*4

The Connector used for PC Tool (DriveConfig/DriveMonitor) has the following wiring:

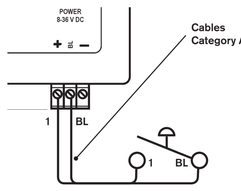


Spare Relay*5

Relays marked with "Spare Relay" are allowed to use as desired. Activate by 0V. Note that it may require special settings to make them operational.

Switch for backlight

To use a switch to alternate between adjusted brightness and 100% brightness connect it as following:

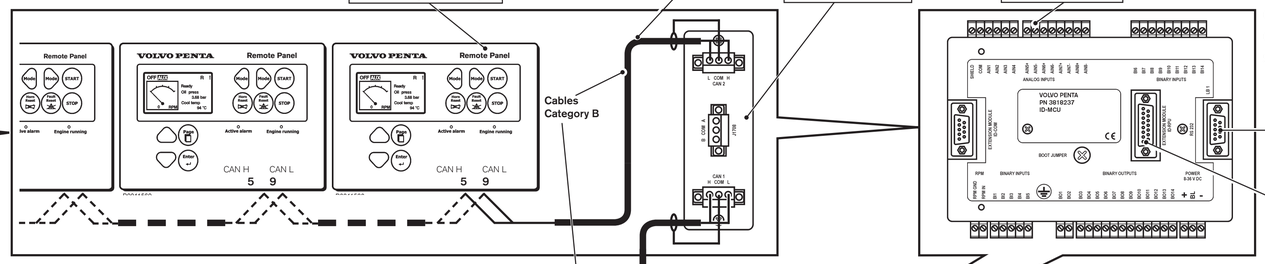


CAN2 speed 32C / 250kBd (<200 meter between units) (default)
CAN2 speed 8C / 50kBd (<900 meter between units) (slower response times)

Remote Panel jumper settings*3

Optional with remote panel

MCU jumper settings*1



Connect to PC Tool DriveConfig*4

Connect to external MODBUS system

Switch between PC tool and MODBUS via MCU menu.

Communication is connected here.
Standard RS232 max length 10 m.
Use a RS232 to RS485/422 converter to extend length to 200 or 900 (set in MCU menu)
Use cables Category E

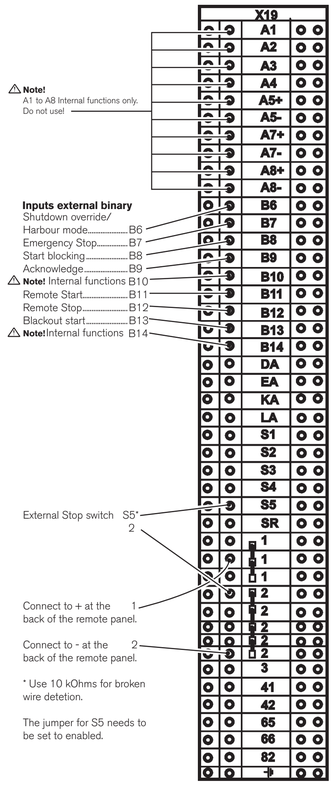
Aux. I/O equipment

Comap RPU connection
(Redundant Protection Unit)
Refer to InteliDrive user guide

Aux. I/O equipment

Input Connections (24 V only)

Use cables Category A



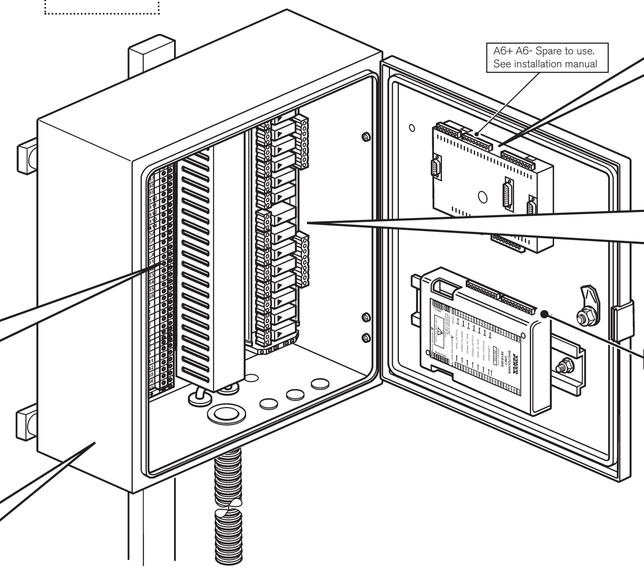
Note! A1 to A8 Internal functions only. Do not use!

Inputs external binary
Shutdown override/
Harbour mode..... B6
Emergency Stop..... B7
Start blocking..... B8
Acknowledge..... B9
Note! Internal functions B10
Remote Start..... B11
Remote Stop..... B12
Blackout start..... B13
Note! Internal functions B14

External Stop switch S5*
2
Connect to + at the back of the remote panel. 1
Connect to - at the back of the remote panel. 2

* Use 10 kOhms for broken wire detetion.

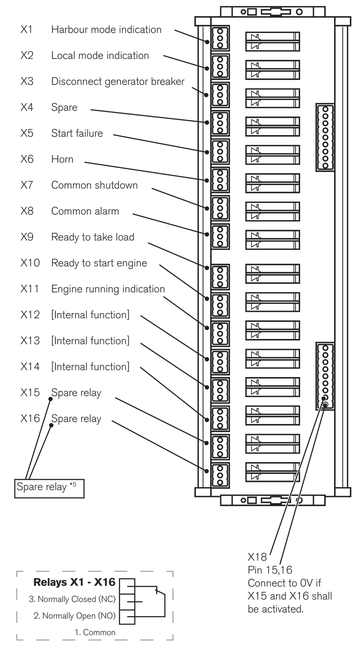
The jumper for S5 needs to be set to enabled.



Ground should be applied by the shortest cable possible with a diameter of equal to or greater than 2.5 mm²

Relay connection (24 V Only)

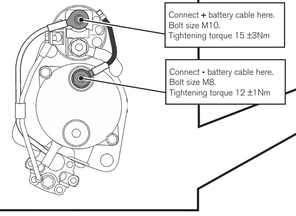
Use cables Category A to all relay contact connections

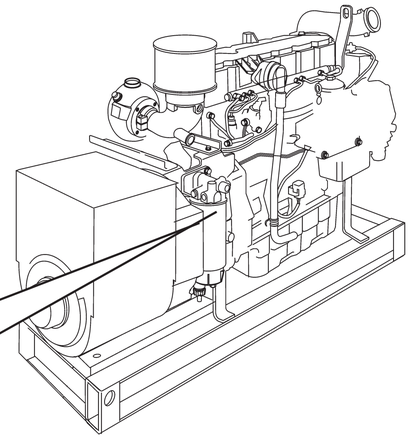


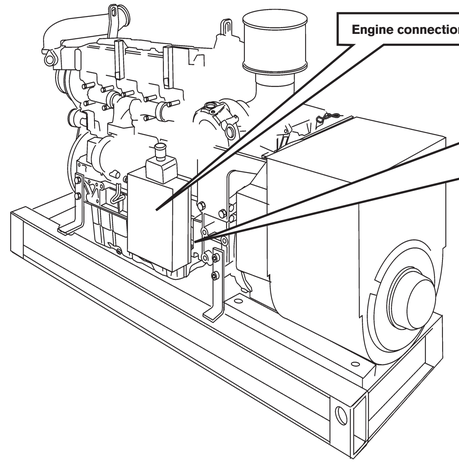
Primary battery connection

Electrical and combined Electrical /Air starter

Use cables Category D

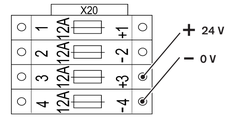






Secondary Battery (Backup)

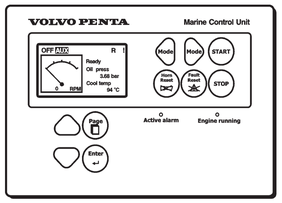
Use cables Category C



VOLVO PENTA

Components and Cables

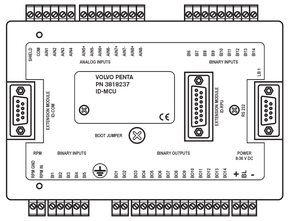
Components



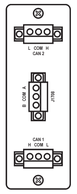
MCU Marine Control Unit Front View

Part no.

3818237



Rear View

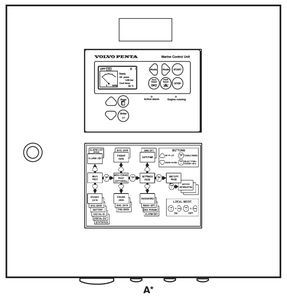


ID-COM

Part no.

3818364

ID-COM is only used with Remote Panel

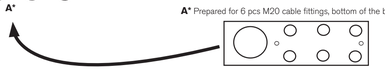


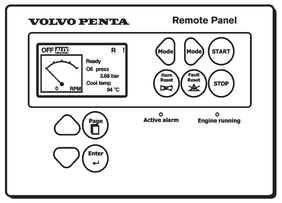
Steel box MCC

Part no.

3843541

A* Prepared for 6 pcs M20 cable fittings, bottom of the box:

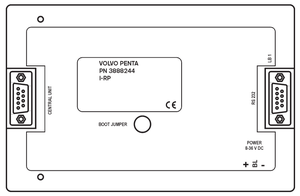




Remote Panel Front View

Part no.

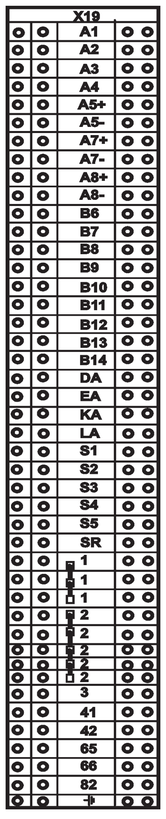
3888244



Rear View

MCU / Remote Panel Engine Data

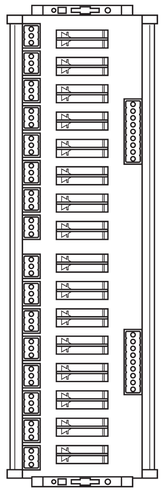
Indicator	AUX	EME	Combined
Engine Speed	X	X	X
Oil Press	X	X	X
Oil Temp	X	X	X
Coolant Press.	X	X	X
Coolant Temp	X	X	X
Fuel Press.	X	X	X
Primary battery voltage	X	X	X
Sec. battery voltage	X	X	X



Input Connection

Part no.

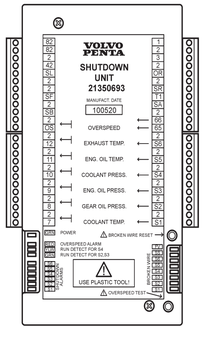
3842883



Relay Connection

Part no.

3818362



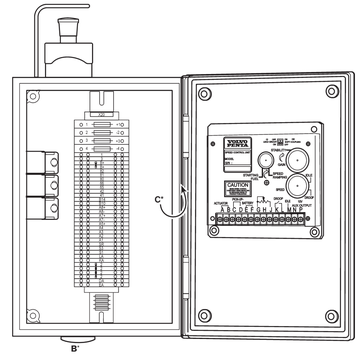
SDU - Shutdown Unit

Part no.

21350693

Spare part no. (includes reference to calibration document)

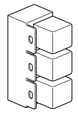
3819845



Engine connection steel box. See figure to the right.

Part no.

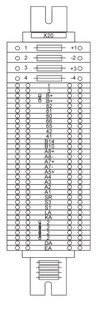
3841323



Relay kit

Part no.

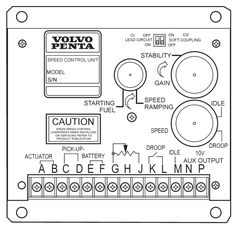
3885261



Input connection

Part no.

22451011



ESD 5500 GAC Speed Control unit (Optional)

Part no.

881616

Cables

MCC Connection cable

Feet	Meter	Part no.
19	5,8	3818484

Category A Terminal block / relay connections

Crosscut area minimum 1,5 mm2 (16 AWG) type approved low voltage (30 V or more) ship cable, Max 50 meters (164 ft)

Category B CAN communication. Shielded, pairtwisted

Crosscut area min. 0,25 mm2 (23 AWG) 120 Ohm nominal impedance, Maximal attenuation (at 1 MHz) 2 dB / 100 m (328 ft), Max 900 meters (2953 ft) Nominal Velocity of Propagation min. 75% (max. 4,4 ns/m)

Category C Secondary Battery

Crosscut area 2,5 mm2 (13 AWG) type approved low voltage (30 V or more) ship cable, Max 30 meters (98 ft)

Category D Battery cables

Refer to Installation manual D5-D16 Publ. no: 47704151 for dimensions.

Category E RS232 / MODBUS. Shielded, pairtwisted

RS232: Use signal RS - TS twisted cable (Max. 10 meter / 32.8 ft)

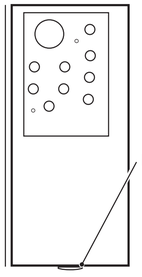
RS485/422: Less than 40 meters (131 ft): Crosscut min. 0,75 mm2, (18 AWG) 120 Ohm impedance, Max. attenuation (at 1 MHz) 1,7 dB / 100 m (328 ft)

RS485/422: Longer than 40 meters (131 ft): Drain wired, crosscut min. 0,75 mm2 (18 AWG) 120 Ohm impedance, Max. attenuation (at 1 MHz) 1,7 dB / 100 m (328 ft)

B* & C* M20 Cable fittings

Prepared for M20 cable fittings

Engine connection steel box



C: Prepared for 9 pcs M20 cable fittings on the right side of the box.

B: Prepared for 1pcs M20 cable fitting underneath the box.

Input Connection Tool

Tool Included in Steel boxes

Input Connections Bobtail (none MCC installations)

External monitoring system interface

Use cables Category A

⚠ **NOTE!** SD and alarm system must be configured according to engine Technical Data.

Sender	External monitoring system interface	Terminal	AUX	EME
Oil pressure	4-20 mA, 0-10 Bar	A1	x	x
Coolant pressure	4-20 mA, 0-10 Bar	A2	x	x
Primary battery	0-1 V DC **	A3, 2	x	x
Secondary battery	0-1 V DC **	A4, 2	x	x
Fuel feed pressure	4-20 mA, 0-10 Bar	A5+	x	x
Coolant temperature	PT 100	A7+	x	x
Coolant temperature	PT 100	A7-	x	x
Oil temperature	PT 100	A8+	x	x
Oil temperature	PT 100	A8-	x	x
Coolant level	Digital on/off	B10	x	x
Fuel pipe leakage	Digital on/off	B14	x	x
Speed pickup	VAC, 129 pulses/rev.	KA	x	x
Speed pickup	VAC, 129 pulses/rev.	LA	x	x
Coolant temperature	Digital on/off, 10 kOhm *	S1	x	-
Oil pressure	Digital on/off, 10 kOhm *	S3	x	-

* Prepared for broken wire detection. (S1 & S3)

⚠ **NOTE!** No shutdown unit or MCU included

** A3, A4 See figure below: