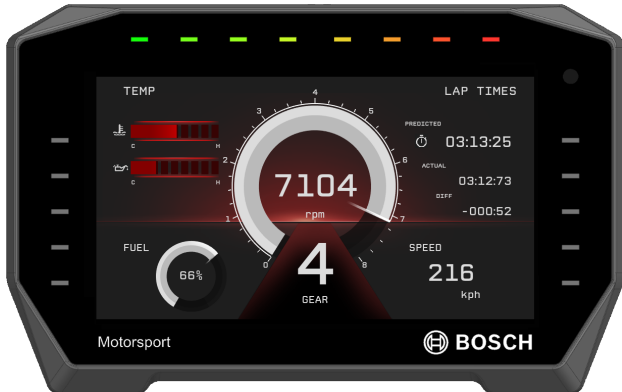


Display DDU 11



- ▶ Features user interface menu
- ▶ Features display element design generator
- ▶ 8 top-LEDs and 5 side-LEDs on both sides
- ▶ Supports GPS laptrigger, pre-dated lap time etc.
- ▶ Page change based on events possible

The display DDU 11 integrates a programmable full colour dashboard display with a data logging system for motorsport applications. Additional input devices can be connected via Ethernet, CAN buses, and RS 232.

A basic logging function of 100 channels with recording rate of 20 Hz (50 ms) (4 GB) is always included. The logger can be upgraded to full logging performance (max. 1 kHz (1 ms)). In addition, a 2nd logging partition of 4 GB can be activated. An optional external GPS Sensor keeps track of position on the racetrack.

With the DDU 11, a library of graphical elements for the individual design of display pages and a state-of-the-art user interface menu is available. For quick data transfer from the car, e.g., during pit stop, data logging to a USB stick is available as an option.

Application

Display

6.5" graphic color display

48 user configurable pages (12 pages organized in 4 switchable page sets)

Resolution 800 x 480 pixel

Supported image file formats PNG, BMP, JPG, GIF

Processor 667 MHz Dual Core

AD-Converters 10 kHz sampling rate with digital downsampling filter

Real time clock supply Ultracap™, sustains realtime for 2 weeks

Configurable math channels

User configurable CAN in/out messages	Up to 256 IDs (128 in and out)
Sampling rate	20 Hz (50 ms) standard, max. 1 kHz (1 ms) as optional upgrade (FULL_LOG_1/ FULL_LOG_2)
Online data compression	
Internal logger	
• 100 channels (standard)	
• Up to 1,500 channels (optional)	
• 4 GB memory (standard)	
• Plus 4 GB memory (optional)	
Logging rates	
• Usage of all features: 600 kB/s	
• Primary logging use case: >800 kB/s	
• Logging data download rate: up to 6.2 MB/s	
Ambient light sensor	

Technical Specifications

Mechanical Data

Size	203 x 128 x 38.5 mm
Weight	649 g
Protection classification	IP67
Operating temperature internal	-20 to 85°C
Max. vibration	Vibration profile 1 (see bosch-motorsport.com)

Electrical Data

Supply voltage	6 to 18 V
Current consumption (w/o sensor supply)	<2 A (at 12 V)

Outputs

1 x Sensor supply 5 V +/-1 % or UBAT switched (max. 250 mA)
1 x Sensor ground

Inputs (option)

4 x Analog In (5 V/12 bit), Digital In, Wheelspeed HALL, or
Wheelspeed DF11

1 x Analog In (5 V/12 bit), Digital In or Laptrigger In

Switchable 3.01 kOhm pull-up resistors for all analog inputs

Connectors and Wires

Mating Connector: TE Connectivity 3-1437290-7

Connector Pins: TE Connectivity 3-1447221-4

Pin Configuration

Pin	Name	Status
1	KL30_KL15/UBAT	Incl.
2	SENSGND	Incl.
3	SENSPWR (5 V or UBAT switched)	Incl.
4	SIG2_IN (Analog In, Digital In, Wheelspeed HALL, Wheelspeed DF11, switchable Pull-Up 3.01 k)	Opt.
5	SIG4_IN (Analog In, Digital In, Wheelspeed HALL, Wheelspeed DF11, switchable Pull-Up 3.01 k)	Opt.
6	USB_GND	Opt.
7	USB_PWR	Opt.
8	KL31/GND	Incl.
9	SIG5_IN_LAPTRG (Analog In, Digital In, switchable Pull-Up 3.01 k)	Opt.
10	SIG1_IN (Analog In, Digital In, Wheelspeed HALL, Wheelspeed DF11, switchable Pull-Up 3.01 k)	Opt.
11	SIG3_IN (Analog In, Digital In, Wheelspeed HALL, Wheelspeed DF11, switchable Pull-Up 3.01 k)	Opt.
12	USB_DN	Opt.
13	USB_DP	Opt.
14	CAN_2_H_RS232_TX (switchable CAN or RS232)	Opt.
15	CAN_1_H	Incl.
16	ETH_CHANNELO_TXN (Ethernet 100BaseTX)	Incl.
17	ETH_CHANNELO_TXP	Incl.
18	ETH_CHANNELO_RXN	Incl.
19	ETH_CHANNELO_RXP	Incl.
20	TIMESTMP_INOUT (Timesync)	Incl.
21	CAN_2_L_RS232_RX (switchable CAN or RS232)	Opt.
22	CAN_1_L	Incl.

23	ETH_CHANNEL1_TXN (Ethernet 100BaseTX)	Incl.
24	ETH_CHANNEL1_TXP	Incl.
25	ETH_CHANNEL1_RXN	Incl.
26	ETH_CHANNEL1_RXP	Incl.

Communication

CAN interfaces	1
2 nd CAN interface or RS232 with IO_EXTENS	e.g., Telemetry or GPS
Ethernet 100BaseTX	2
Laptrigger input	1
Configuration via RaceCon	Over Ethernet or MSA-Box II
CCP-Master, data acquisition from ECU that support CAN Calibration Protocol (CCP_MASTER option)	
XCP-Master, data acquisition from ECU that support eXtended Calibration Protocol over UDP or CAN (CCP_MASTER option)	

Installation Notes

Inspection services recommended after 220 h or 2 years, no components to replace.

This product may contain open source software. Information about license terms and other obligations is given in the manual.

Legal Restrictions

The sale of this product in Mexico is prohibited. Due to embargo restrictions, sale of this product in Russia, Belarus, Iran, Syria, and North Korea is prohibited.

Upgrades**CCP/XCP_MASTER**

Enables CCP/XCP master functionality to request data from foreign devices via CAN/CCP protocol, XCP over Ethernet (UDP) or XCP over CAN.

(ASAP2 file from ECU manufacturer required)

FULL_LOG_1

Enable full logging performance with sampling rate of max. 1 kHz (1 ms) and 1,500 channels for partition 1

FULL_LOG_2

Enable logging partition 2 with 4 GB

IO_EXTENS

4 x Analog In (5 V/12 bit), Digital In, Wheelspeed HALL or
Wheelspeed DF11

1 x Analog In (5 V/12 bit), Digital In or Laptrigger In

Switchable 3.01 kOhm pull-up resistors for all analog inputs

1 x CAN or RS232 (switchable via RaceCon)

USB_DATA includes

- Rugged USB flash drive Bosch File System (BFS) format included, works with Bosch File System (BFS) preformatted USB Flash drive only
- Adapter cable to PC USB-Port
- Mating connector for USB flash drive on car loom side
- Software license for USB-Logging
- External switch for page selection, 12 steps B261.209.658-01
- External switch for brightness adjustment or page selection, 6 steps B261.209.659-01

Ordering Information

Display DDU 11

Order number **F02U.V03.208-03**

Software Options

CCP/XCP_MASTER
Order number **F02U.V02.213-01**

FULL_LOG_1
Order number **F02U.V02.304-01**

FULL_LOG_2
Order number **F02U.V02.305-01**

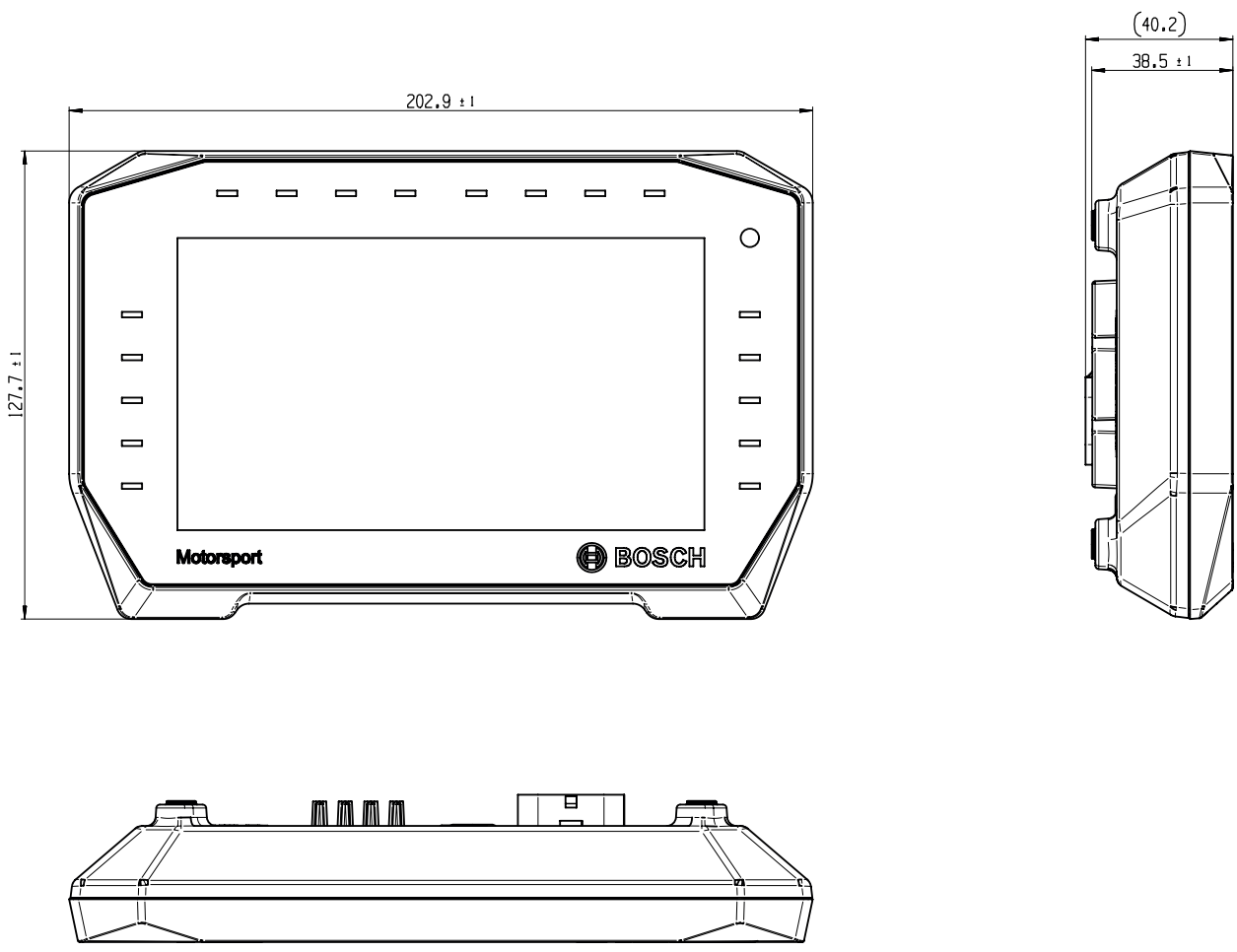
IO_EXTENS
Order number **F02U.V02.205-01**

Accessories

USB_DATA
Order number **F02U.V02.214-01**

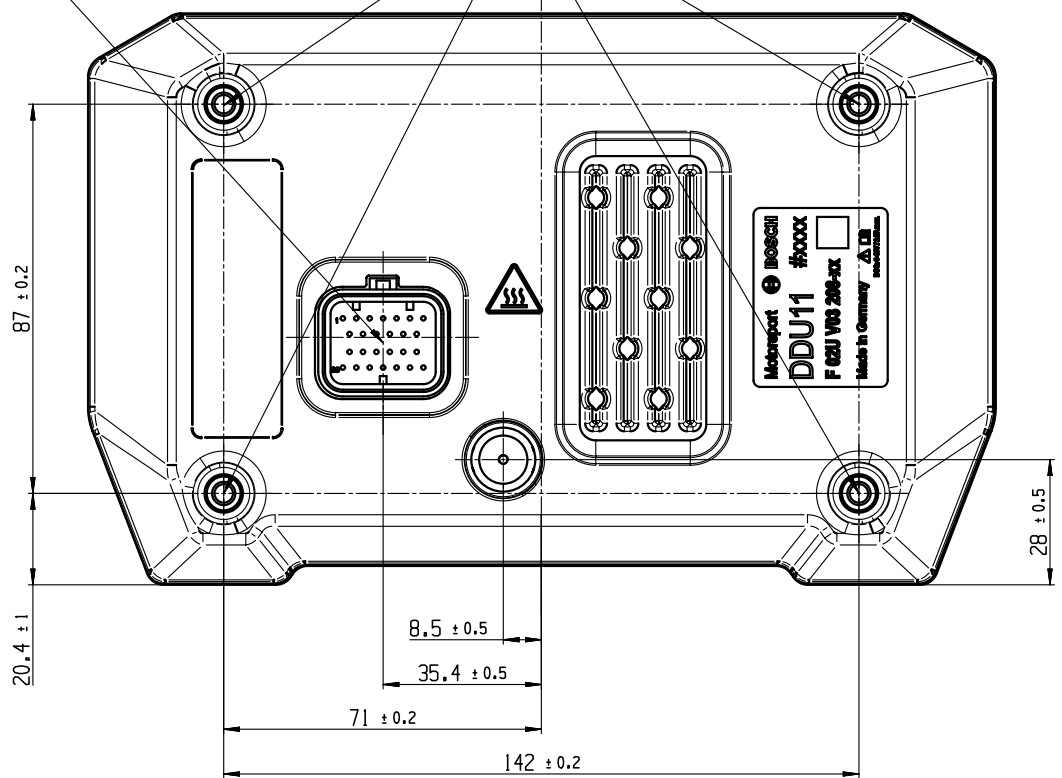
Mating Connector Kit AMP Superseal
Order number **F02U.B01.201-01**

Dimensions



MATING CONNECTOR
PLEASE REFER TO DATASHEET

MOUNTING SCREW
4 x M5 (length 10 mm max.)



Represented by:

Europe:
Bosch Engineering GmbH
Motorsport
Robert-Bosch-Allee 1
74232 Abstatt
Germany
Tel.: +49 7062 911 9101
Fax: +49 7062 911 79104
motorsport@bosch.com
www.bosch-motorsport.de

North America:
Bosch Engineering North America
Motorsport
38000 Hills Tech Drive
Farmington Hills, MI 48331-3417
United States of America
Tel.: +1 248 876 2977
Fax: +1 248 876 7373
motorsport@bosch.com
www.bosch-motorsport.com

Asia-Pacific:
Bosch Engineering Japan K.K.
Motorsport
18F Queen's Tower C, 2-3-5 Minato
Mirai Nishi-ku, Yokohama-shi
Kanagawa 220-6218
Japan
Tel.: +81 45 650 5610
Fax: +81 45 650 5611
www.bosch-motorsport.jp

Australia, New Zealand and South Africa:
Robert Bosch Pty. Ltd
Motorsport
1555 Centre Road
Clayton, Victoria, 3168
Australia
Tel.: +61 (3) 9541 3901
motor.sport@au.bosch.com