

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	
	• 4 GB memory on Partition 1 enabled • 100 channels enabled • 50 ms Sampling rate enabled • FULL_LOG_1 (1,500 channels/1 kHz sampling rate on Partition 1) optional • FULL_LOG_2 (4 GB memory on Partition 2) 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

Electrical Data

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

Inputs (option)

4 x analog In (5 V/12 bit), Digital In, Wheel Speed HALL, or Wheel Speed 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

Sensor Supplies and Screens

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

1 x Sensor ground

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, Wheel Speed HALL, Wheel Speed DF11, switchable Pull-Up 3.01 k)	Opt. 1*
5	SIG4_IN (Analog In, Digital In, Wheel Speed HALL, Wheel Speed DF11, switchable Pull-Up 3.01 k)	Opt. 1*
6	USB_GND	Opt. 2*
7	USB_PWR	Opt. 2*
8	KL31/GND	Incl.
9	SIG5_IN_LAPTRG (Analog In, Digital In, switchable Pull-Up 3.01 k)	Opt. 1*
10	SIG1_IN (Analog In, Digital In, Wheel Speed HALL, Wheel Speed DF11, switchable Pull-Up 3.01 k)	Opt. 1*
11	SIG3_IN (Analog In, Digital In, Wheel Speed HALL, Wheel Speed DF11, switchable Pull-Up 3.01 k)	Opt. 1*
12	USB_DN	Opt. 2*
13	USB_DP	Opt. 2*
14	CAN_2_H_RS232_TX (switchable CAN or RS232)	Opt. 1*
15	CAN_1_H	Incl.
16	ETH_CHANNEL0_TXN (Ethernet 100BaseTX)	Incl.
17	ETH_CHANNEL0_TXP	Incl.
18	ETH_CHANNEL0_RXN	Incl.
19	ETH_CHANNEL0_RXP	Incl.
20	TIMESTMP_INOUT (Timesync)	Incl.
21	CAN_2_L_RS232_RX (switchable CAN or RS232)	Opt. 1*
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.

Opt. 1*: Requires Software Upgrade IO_EXTENS

Opt. 2*: Requires Software Upgrade DATA_USB

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

Generally blocked are direct and indirect business involving high risk destinations, including Russia, Belarus, Cuba, Iran, North Korea, Syria, Libya, Afghanistan, and certain non-governmental controlled Ukrainian regions. This list may change as geopolitics evolve.

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 via CAN.
(ASAP2 file from ECU manufacturer required)

FULL_LOG_1

1,500 channels/1 kHz sampling rate on Partition 1

FULL_LOG_2

4 GB memory on Partition 2

IO_EXTENS

4 x Analog In (5 V/12 bit), Digital In, Wheel Speed HALL or Wheel Speed 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)

DATA_USB

Data copy to USB flash drive

ABSDIAG

Upgrade Onboard Diagnostic Package ABS M5

- Enables functionality like error memory read and erase, and repair bleed from UIM menu in display

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**

Rugged USB flash drive

Order number **F02U.V03.534-01**

Connector for USB flash drive on car loom side

Order number **F02U.002.996-01**

Adapter cable to PC USB-Port

Order number **F02U.V01.343-01**

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**

ABSDIAG

Activation per device

Order number **F02U.V03.003-01**

DATA_USB

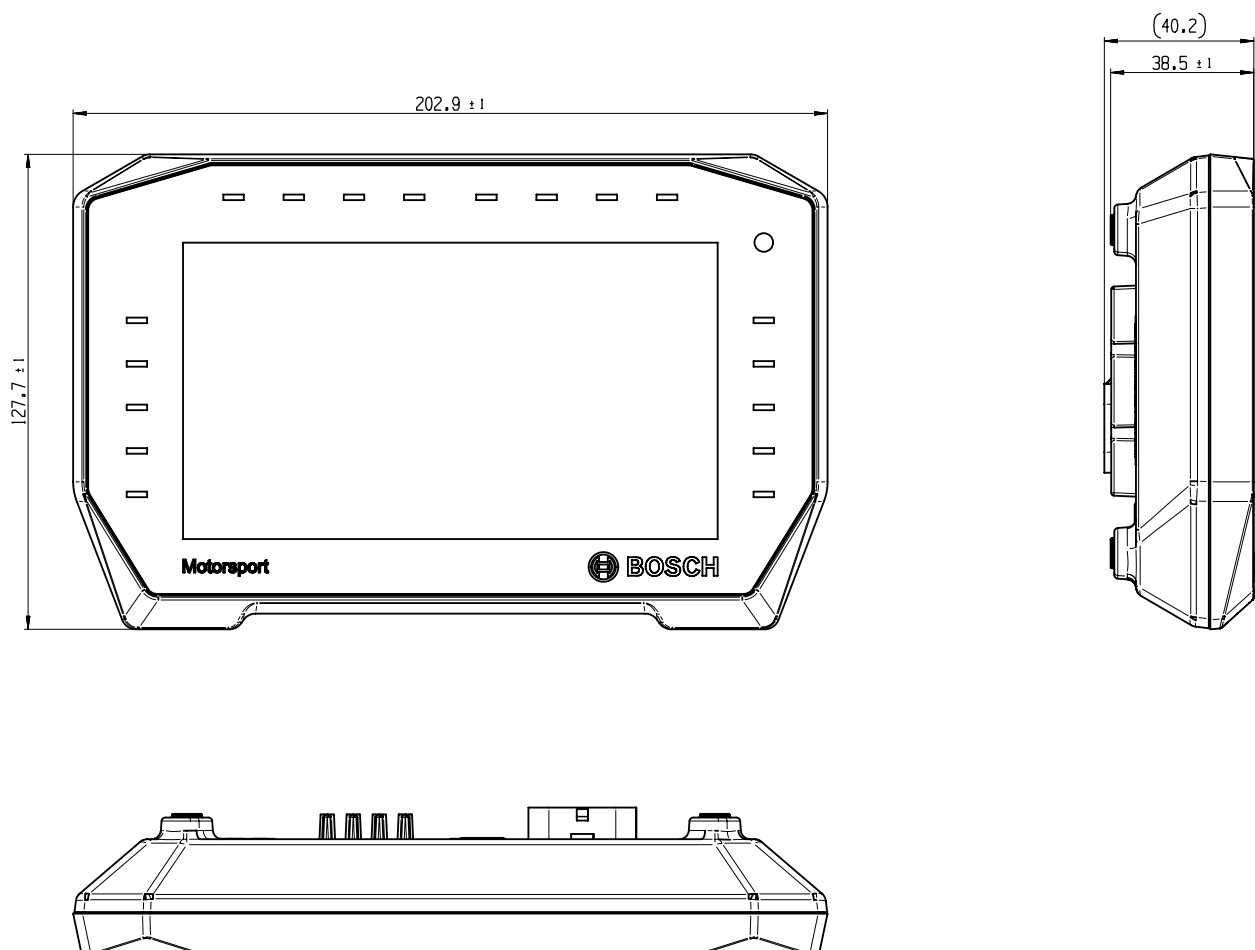
Order number **F02U.V03.476-01**

Accessories

Mating Connector Kit AMP Superseal

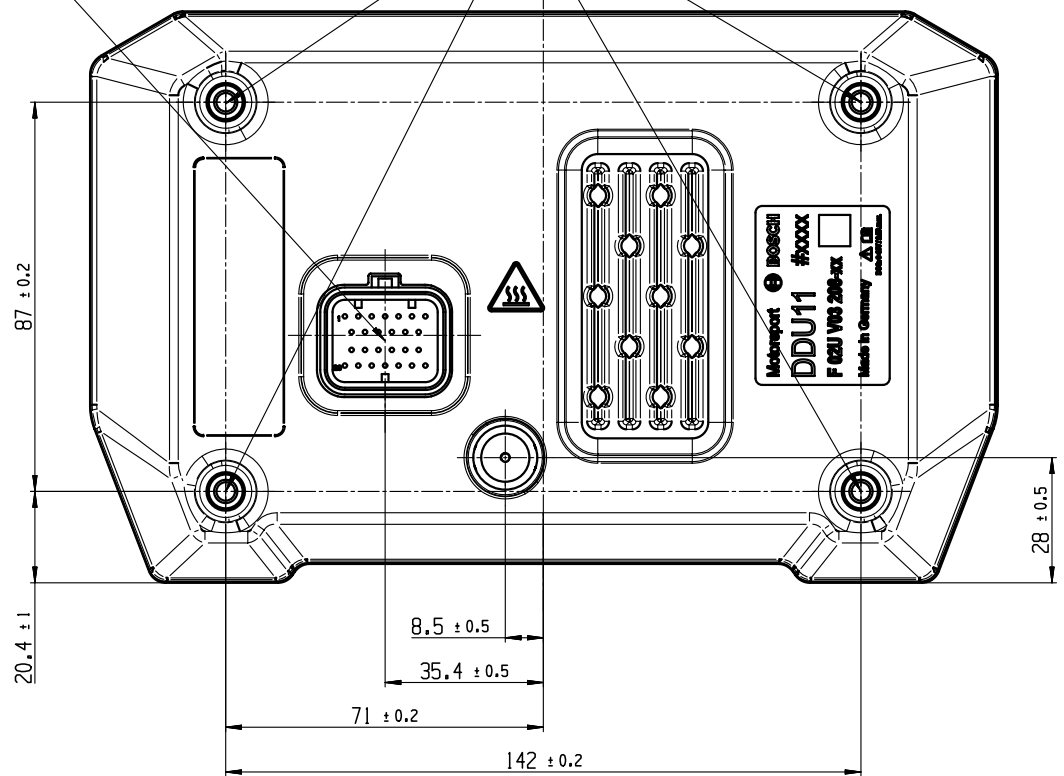
Order number **F02U.B01.201-01**

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
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
motorsport@bosch.com
www.bosch-motorsport.com

Asia-Pacific:
Bosch Engineering Japan K.K.
Motorsports Department
1-9-32 Nakagawachuo, Tsuzuki-ku
Yokohama-shi
Kanagawa, 224-8601
Japan
motorsport@jp.bosch.com
www.bosch-motorsport.jp

Australia, New Zealand and South Africa:
Robert Bosch Pty. Ltd
Motorsport
1555 Centre Road
Clayton, Victoria, 3168
Australia
motor.sport@au.bosch.com
www.bosch-motorsport.com.au