

Data Logger and Sensor Interface C 80



- ▶ Aluminum housing
- ▶ Powerful data logger with up to 20 GB memory
- ▶ Supports Bosch multi-logger configuration
- ▶ USB recording and full telemetry support

We offer the C 80 in two basic versions, on the one hand as a data logger and on the other hand as a sensor interface. Choose between these basic variants and combine or add functionalities now or later.

The data logger C 80 is a professional data logging system for motorsport applications. This allows for synchronized acquisition of engine data from the ECU and chassis data from up to 26 analog and 4 digital input channels. Additional input devices can be connected via Ethernet and CAN buses. Recorded data from the up to 16 GB logger can be downloaded via high speed Ethernet. Software upgrades for the C 80 (field upgradable by entering a key) activate tailored configurations like a second logging partition of 4 GB, USB recording, CCP/XCP-master for simple data access to third party devices, as well as additional input channels.

Application

Converters	10 kHz 12 bit AD converters with digital low pass filter
Configurable math channels	
User configurable CAN in/out messages	
Sampling rate	
Online data compression	

Internal logger

- 4 GB memory on partition 1 (optional; included in C 80 Logger)
- Plus 16 GB memory on partition 1 (optional)
- Plus 4 GB memory on partition 2 (optional)
- Up to 1,500 channels
- Fastest sampling 1,000 Hz for all channels

Logging rates

- Usage of all features: 800 kB/s
- Primary logging use case: >1,500 kB/s
- Logging data download rate: up to 7.5 MB/s

3-port network switch

Telemetry Support via Ethernet (recommended) and RS232

Technical Specifications

Mechanical Data

Size	105 x 34.5 x 137.5 mm
Weight	462 g
Protection Classification	IP67 to DIN 40050, Section 9, Issue 2008
Max. vibration	Vibration profile 1 (see Appendix or www.bosch-motorsport.com)
Operating temperature (internal)	0 to 85°C
Operation outside the temperature limits can be tested on request during the manufacturing tests.	

Electrical Data

Supply voltage	8 to 18 V
Max. power consumption (w/o loads)	10 W at 14 V

Inputs

Analog channels	6
Input range	0 to 5 V
Resolution	12 bit
Switchable pull up resistor	3 kOhm

Outputs

PWM outputs (low side switch 2 A each)	4
Sensor supply 5 V ± 1 % (250 mA)	1

Connectors and Wires

Motorsport connectors double density	2 x 41 pins
Mating connector I ASDD612-41SN	F02U.002.216-01
Mating connector II ASDD612-41SA	F02U.004.180-01

Pin Layout ASDD212-41PN

Pin	Name	Description
1	KL30	
2; 3	KL15	
4; 5	KL31	
6	Ethernet Channel0 Tx plus	Wire Ethernet_0 - TX+
7	Ethernet Channel0 Tx minus	Wire Ethernet_0 - TX-
8	Ethernet Channel0 Rx plus	Wire Ethernet_0 - RX+
9	Ethernet Channel0 Rx minus	Wire Ethernet_0 - RX-
10	Ethernet Schirm	Ethernet Schirm
11	Ethernet Channel1 Tx plus	Wire Ethernet_0 - TX+
12	Ethernet Channel1 Tx minus	Wire Ethernet_0 - TX-
13	Ethernet Channel1 Rx plus	Wire Ethernet_0 - RX+
14	Ethernet Channel1 Rx minus	Wire Ethernet_0 - RX-
15	Ethernet Channel2 Tx plus	Wire Ethernet_0 - TX+
16	Ethernet Channel2 Tx minus	Wire Ethernet_0 - TX-
17	Ethernet Channel2 Rx plus	Wire Ethernet_0 - RX+
18	Ethernet Channel2 Rx minus	Wire Ethernet_0 - RX-
19	CAN_A_H	CAN_A - HIGH
20	CAN_A_L	CAN_A - LOW
21	CAN_B_H	CAN_B - HIGH
22	CAN_B_L	CAN_B - LOW
23	USB Power	500mA USB_Power
24	USB Data Plus	USB_OTG_Plus
25	USB Data Minus	USB_OTG_Minus

Pin	Name	Description
26	USB GND	USB_Ground
27	SENSPWR5_1	
28	SENSGND	
29	Timestamp	
30	LS_GND_1	Low-Side Ground2
31	LS_SWITCH_1	lowside switch 2A
32	LS_SWITCH_2	lowside switch 2A
33	LS_SWITCH_3	lowside switch 2A
34	LS_SWITCH_4	lowside switch 2A
35	LS_GND_2	Low-Side Ground2
36	ANAIN_M1_1	0 to 5V Analog
37	ANAIN_M1_2	0 to 5V Analog
38	ANAIN_M1_3	0 to 5V Analog
39	ANAIN_M1_4	0 to 5V Analog
40	ANAIN_M1_5	0 to 5V Analog
41	ANAIN_M1_6	0 to 5V Analog

Pin Layout ASDD212-41PA

Pin	Name	Description
1	UBATT_FUSE1	
2	SENSPWR10_1	
3	SENSPWR5_2	
4	SENSPWR5_3	
5	SENSPWR5_4	
6; 7	SENSGND	
8	RS232A TX	RS232A - Transmit
9	RS232A RX	RS232A - Receive
10	RS232B TX	RS232B - Transmit
11	RS232B RX	RS232B - Receive
12	RS232_GND	RS232_GND
13	REV1_P	Hall / Inductive
14	REV1_M	Hall / Inductive
15	REV2_P	Hall / Inductive
16	REV2_M	Hall / Inductive
17	REV3_P	Hall / Inductive
18	REV3_M	Hall / Inductive
19	REV4_P	Hall / Inductive
20	REV4_M	Hall / Inductive
21	ANAIN_M1_7	0 to 5V Analog
22	ANAIN_M1_8	0 to 5V Analog
23	ANAIN_M1_9	0 to 5V Analog
24	ANAIN_M1_10	0 to 5V Analog
25	ANAIN_M1_11	0 to 5V Analog
26	ANAIN_M1_12	0 to 5V Analog
27	ANAIN_M1_13	0 to 5V Analog
28	ANAIN_M1_14	0 to 5V Analog

Pin	Name	Description
29	ANAIN_M1_15	0 to 5V Analog
30	ANAIN_M1_16	0 to 5V Analog
31	ANAIN_M2_1	0 to 5V Analog
32	ANAIN_M2_2	0 to 5V Analog
33	ANAIN_M2_3	0 to 5V Analog
34	ANAIN_M2_4	0 to 5V Analog
35	ANAIN_M2_5	0 to 5V Analog
36	ANAIN_M2_6	0 to 5V Analog
37	ANAIN_M2_7	0 to 5V Analog
38	ANAIN_M2_8	0 to 5V Analog
39	ANAIN_M2_9	0 to 5V Analog
40	ANAIN_M2_10	0 to 5V Analog
41	LAPTRIGGER	

Communication

Configuration via RaceCon over Ethernet or MSA-Box II	
CAN interfaces	2
Ethernet 100BaseT	3
Telemetry	Ethernet or RS232
Lap trigger input	1

Installation Notes

Maintenance Interval: 220 h or a maximum of two years

Depending on your experience calibrating Bosch ECUs, we recommend calibration support from Bosch Motorsport.

Please remember that the mating connectors and the programming interface MSA Box II are not included and must be ordered separately.

Not reverse polarity protected on supply or outputs.

Software

The required software (.pst file) for this device is available in the download area of our homepage www.bosch-motorsport.com.

Download data and save configurations before sending device, as it will be reset during service.

Upgrades

CCP_MASTER

Enables CCP/XCP master functionality to request data from foreign devices via CAN/CCP protocol or XCP over Ethernet (UDP). (ASAP2 file from ECU manufacturer required)

PERF_LOG_1

Increase logging partition 1 from 4 GB to 16 GB memory, 800 kB/s (866 MHz)

FULL_LOG_2

Enable logging partition 2 with 4 GB memory. Ideally for protected access by different teams or to use as long-term logger.

IO_EXTENS (included in C 80 Sensor Interface)

Additional analog channels	20
Rotational channels (input Hall/inductive)	4
Additional sensor supply 5 V (250 mA each)	3
Sensor supply 10 V (250 mA)	1
Sensor supply 12 V (1 A), non-regulated	1
RS232	GPS

USB Kit

Rugged USB flash drive Bosch File System (BFS) format included, works with BFS preformatted USB flash drive only

Adapter cable to USB-Port

Adapter for wiring harness

SW license USB-Port unlocked

Ordering Information

Data Logger C 80

FULL_LOG_1 included
Order number **F02U.V03.083-01**

Sensor Interface C 80

IO_EXTENS included
Order number **F02U.V03.082-01**

Software Options

CCP_MASTER

Order number **F02U.V02.213-01**

FULL_LOG_1

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

PERF_LOG_1

Order number **F02U.V03.054-01**

FULL_LOG_2

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

IO_EXTENS

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

ADV_TELEM

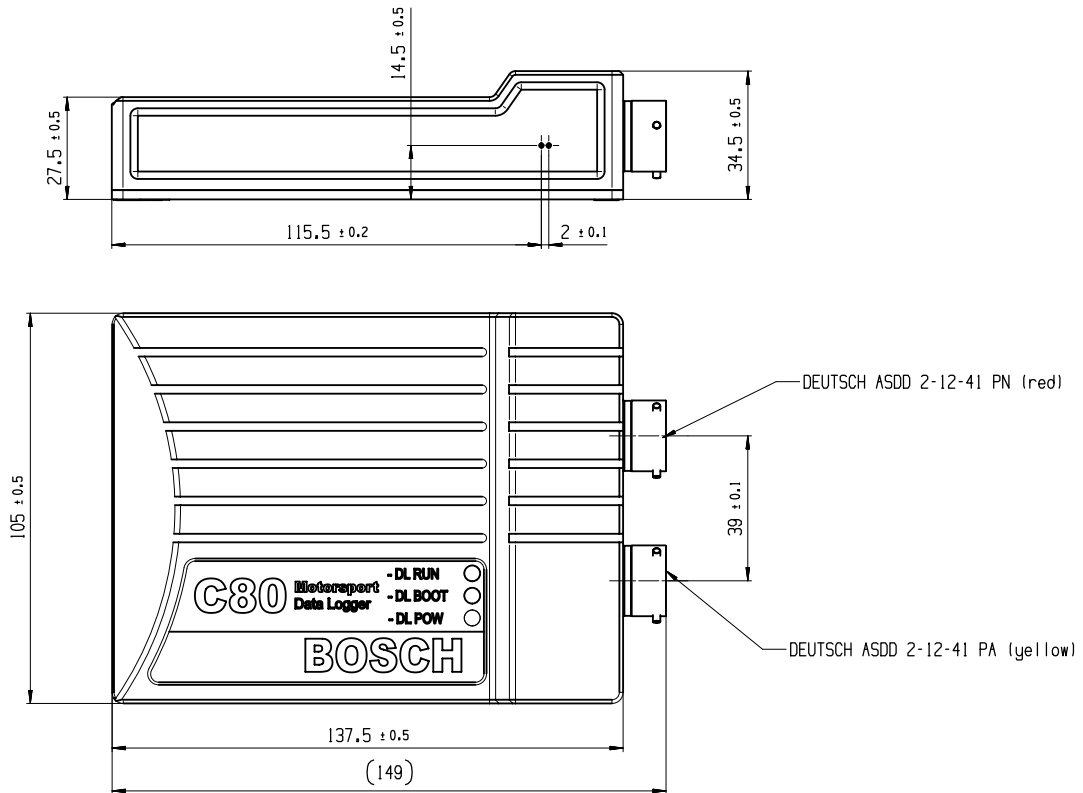
Order number **tbd.**

Accessories

USB_DATA

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

Dimensions



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