

Overview

Data Logger C 70



- Cutting-edge 667 MHz Dual Core Processor
- Recording on USB flash drive (opt.)
- Supports GPS lap trigger, pre-dated lap time etc.
- High programming flexibility using mathematical functions and conditional channels

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

USB Data Components



- Capacity 32 GB
- Robust brass housing
- High performance push-pull connector
- Compatible with ECUs, VCUs, DDUs, Data Loggers, ...

Data Logger C 70

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Features

- ▶ Cutting-edge 667 MHz Dual Core Processor
- ▶ Recording on USB flash drive (opt.)
- ▶ Supports GPS lap trigger, pre-dated lap time etc.
- ▶ High programming flexibility using mathematical functions and conditional channels

The data logger C 70 integrates a programmable data logging system for motorsport applications for a very competitive price. Additional input devices can be connected via Ethernet and CAN buses. Data Analysis Software WinDarab is available free of charge as “WinDarab V7 free” on our website. The logger can be upgraded to a 2nd logging partition of 4 GB (e.g. for long term recording). For quick data transfer from the car e.g. during pit stop, data copy to a USB stick is available as an option. The stick is connected to the wiring harness for the C 70.

The device comes with 4 analog and 4 speed inputs as standard; further 12 analog inputs are available as optional upgrade.

Application

Processor	667 MHz Dual Core
Converters	10 kHz 12 bit AD converters with digital low pass filter
Internal power source	Li/Ion capacitor
Configurable math channels	
User configurable CAN in/out messages	
Online data compression	

Internal logger

- 4 GB memory on Recording 1 enabled
- 1,500 channels enabled

- 1 ms sampling rate enabled
- FULL_LOG_2 (4 GB memory on Recording 2) optional
- DATA_USB (Data copy to USB flash drive) optional

Logging rates

- Usage of all features: 600 kB/s
- Primary logging use case: >1,200 kB/s
- Logging data download rate: up to 6.2 MB/s

LTE Ethernet telemetry support, GSM telemetry support

Technical Specifications

Mechanical Data

Size	151 x 126 x 25.5 mm
Weight	450 g
Protection Classification	IP54 to DIN 40050, Section 9, Issue 2008
Operating temperature internal	-20 to 85°C
Max. vibration	Vibration profile 1 (see Downloads or www.bosch-motorsport.com)

Electrical Data

Supply voltage	5 to 18 V
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Inputs

4 x analog channels, additional 12 optional
0 to 5 V input range
12 bit resolution
switchable pull up resistor for all ANA_IN
4 x Hall-effect or DF11 wheel speed inputs, switchable

Sensor Supplies and Screens

2 x Sensor supply 5 V ± 1 % (250 mA)
1 x Sensor supply 10 V ± 1 % (250 mA)
1 x Sensor supply U_Bat (250 mA)
4 x Sensor ground

Connectors and Wires

Motorsport connector on logger	AS216-35PN
Mating connector	F02U.000.466-01 AS616-35SN

Pin Configuration

Pin	Name	Comment	Status
1	KL_31		Incl.
2	KL_15		Incl.
3	KL_30		Incl.
4	Rev_In_3	Hall or DF11 switchable	Incl.
5	Rev_In_1	Hall or DF11 switchable	Incl.
6	KL_31		Incl.
7	CAN_2_L	CAN speed selectable	Incl.
8	Ethernet_2_TXP		Incl.
9	Ethernet_2_TXN		Incl.

Pin	Name	Comment	Status
10	Sens_Power_12V	over current protected	Incl.
11	Rev_In_4	Hall or DF11 switchable	Incl.
12	Rev_In_2	Hall or DF11 switchable	Incl.
13	Laptrigger_In		Incl.
14	CAN_2_H	CAN speed selectable	Incl.
15	CAN_1_H	CAN speed selectable	Incl.
16	Ethernet_2_RXP		Incl.
17	Sens_Gnd_4	fused	Incl.
18	Sens_Power_5V	over current protected	Incl.
19	ANA_IN_3	3.01 kOhm switchable	Incl.
20	ANA_IN_4	3.01 kOhm switchable	Incl.
21	Time_Sync	connection to Bosch ECU	Incl.
22	CAN_1_L	CAN speed selectable	Incl.
23	Com_screen	Ethernet and USB screen	Incl.
24	Ethernet_2_RXN		Incl.
25	Sens_Gnd_3	fused	Incl.
26	Sens_Power_5V	over current protected	Incl.
27	ANA_IN_7	3.01 kOhm switchable	Opt.
28	ANA_IN_1	3.01 kOhm switchable	Incl.
29	USB_Device_DP	to Bosch USB stick	Opt.
30	RS232_TX_Telemetry	Transmit Telemetry data	Incl.
31	Ethernet_1_TXP		Incl.
32	Sens_Gnd_2	fused	Incl.
33	Sens_Power_10V	over current protected	Incl.
34	ANA_IN_8	3.01 kOhm switchable	Opt.
35	ANA_IN_10	3.01 kOhm switchable	Opt.
36	USB_Device_Gnd	to Bosch USB stick	Opt.
37	USB_Device_DN	to Bosch USB stick	Opt.
38	RS232_RX_Telemetry	Receive Telemetry data	Incl.
39	Ethernet_1_TXN		Incl.
40	Sens_Gnd_1	fused	Incl.
41	ANA_IN_11	3.01 kOhm switchable	Opt.
42	ANA_IN_9	3.01 kOhm switchable	Opt.
43	RS232_TX_GPS	Transmit GPS data	Incl.
44	ANA_IN_16	3.01 kOhm switchable	Opt.
45	USB_Device_Power	to Bosch USB stick	Opt.
46	Ethernet_1_RXP		Incl.
47	ANA_IN_12	3.01 kOhm switchable	Opt.
48	ANA_IN_6	3.01 kOhm switchable	Opt.
49	ANA_IN_2	3.01 kOhm switchable	Incl.
50	ANA_IN_13	3.01 kOhm switchable	Opt.
51	ANA_IN_15	3.01 kOhm switchable	Opt.

Pin	Name	Comment	Status
52	Ethernet_1_RXN		Incl.
53	ANA_IN_5	3.01 kOhm switchable	Opt.
54	RS232_RX_GPS	Receive GPS data	Incl.
55	ANA_IN_14	3.01 kOhm switchable	Opt.

Communication

CAN interfaces	2
Ethernet 100BaseT	2
Laptrigger input	1
RS232	Telemetry, GPS
Configuration via RaceCon	Over Ethernet or MSA-Box II

Installation Notes

Maintenance Interval: 220 h or a maximum of two years

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 or XCP over Ethernet (UDP). (ASAP2 file from ECU manufacturer required)

FULL_LOG_2

4 GB memory on Recording 2

IO_EXTENS

Additional 12 analog input channels

DATA_USB

Data copy to USB flash drive

Ordering Information**Data Logger C 70**

Order number F02U.V02.302-02

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_2

Order number F02U.V02.305-01

IO_EXTENS

Order number F02U.V02.205-01

DATA_USB

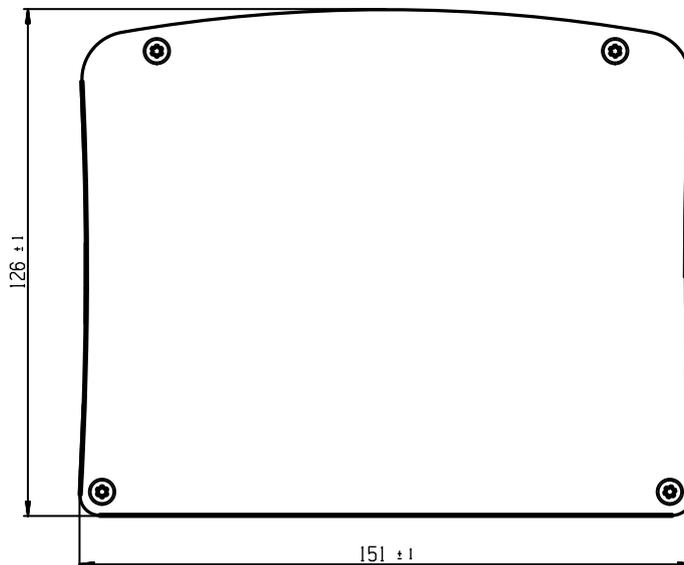
Order number F02U.V03.476-01

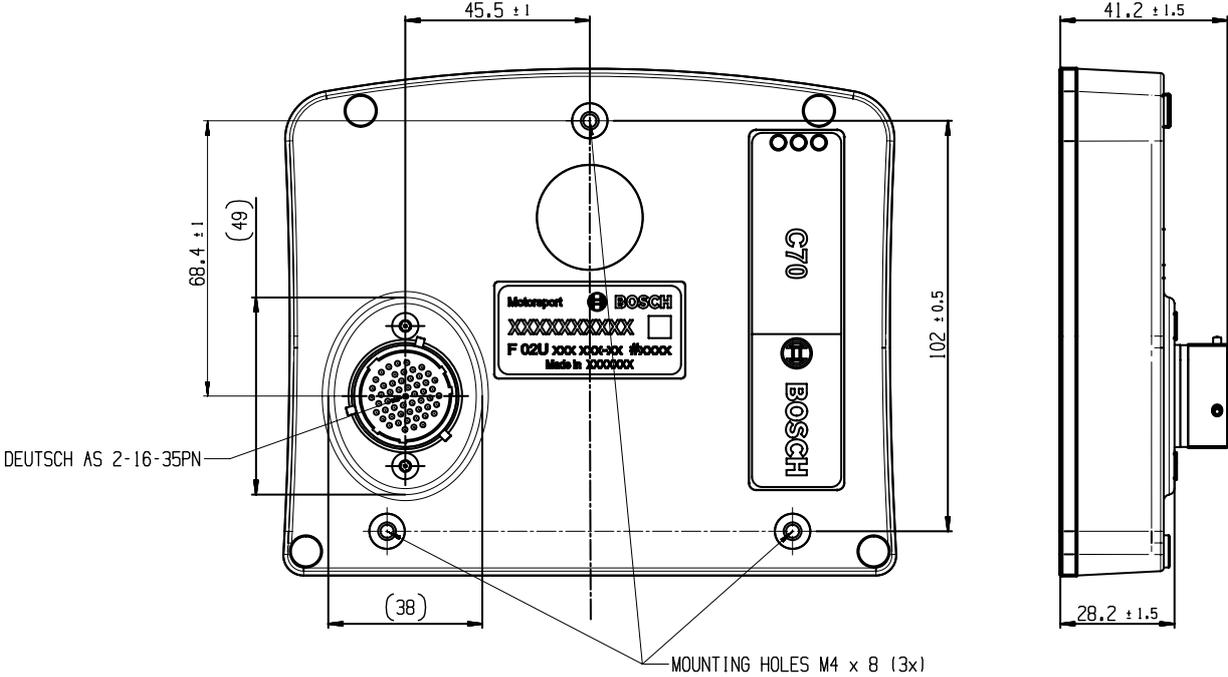
Accessories**Vehicle Loom Basic**

Order number F02U.V02.735-01

Bench Loom

Order number F02U.V02.349-01

Dimensions



Data Logger and Sensor Interface C 80

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Features

- ▶ 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
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Configurable math channels	
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User configurable CAN in/out messages	
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Sampling rate	
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Online data compression	
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Internal logger

- FULL_LOG_1 (4 GB memory on Recording 1) enabled, optional in C80 Sensor Interface
- PERF_LOG_1 (16 GB memory on Partition 1) optional
- FULL_LOG_2 (4 GB memory on Recording 2) optional
- 1,500 channels enabled
- 1 ms sampling rate enabled
- DATA_USB (Data copy to USB flash drive) optional

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 Downloads 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

6 x analog channels
0 to 5 V input range
12 bit resolution
1 x 3 kOhm switchable pull up resistor

Sensor Supplies and Screens

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

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

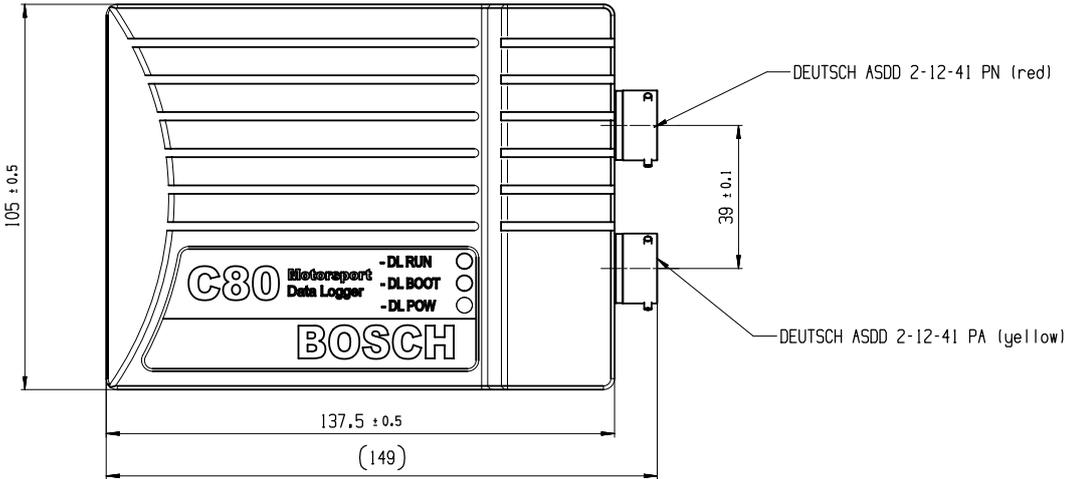
Pin	Name	Description
1	KL30	

Pin	Name	Description
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
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

Pin	Name	Description
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	Transmit Telemetry data
9	RS232A RX	Receive Telemetry data
10	RS232B TX	Transmit GPS data
11	RS232B RX	Receive GPS data
12	RS232_GND	RS232 Ground
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
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	



USB Data Components

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Features

- ▶ Capacity 32 GB
- ▶ Robust brass housing
- ▶ High performance push-pull connector
- ▶ Compatible with ECUs, VCUs, DDUs, Data Loggers, ...

Our USB Data Components enable your Bosch device to store data on a USB flash drive. We offer a rugged USB flash drive, a mating connector to the car loom side and an adapter cable to USB-port. The rugged USB flash drive is securely mounted within a rugged brass housing designed to provide full protection against extreme environmental conditions. It is IP68 protected and resistant to extreme operating temperatures (-30 to 85°C). The USB flash drive is equipped with a rugged protection cap.

Application

Operating temperature range	-30 to 85°C
Protection class	IP68
Tightening torque of Backnut for connection socket	1.5 to 2.0 Nm
Max. vibration	Vibration Profile 3 (see Downloads or www.bosch-motorsport.com)

Technical Specifications

Mechanical Data USB flash drive

Housing material	Brass
Weight	42 g
Length	72 mm
Bore diameter	15.5 mm

Electrical Data

Capacity	32 GB
Specification	USB 1.1/2.0
Data rate	USB 2.0 up to 480 MBit/s

Connectors and Wires

Pin layout for connection to vehicle loom (see also Dimensions)

Pin 1	Data -
Pin 2	+5 V
Pin 3	GND
Pin 4	Data +

USB Data Components

- Rugged USB flash drive
- Mating connector for USB flash drive on car loom side
- Adapter cable to PC USB-Port

Installation Notes

The USB flash drive should be fixed on a soft surface to reduce stress.

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.

Ordering Information

Rugged USB flash drive

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

Adapter cable to PC USB-Port

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

Connector for USB flash drive on car loom side

Order number **F02U.002.996-01**

Dimensions

