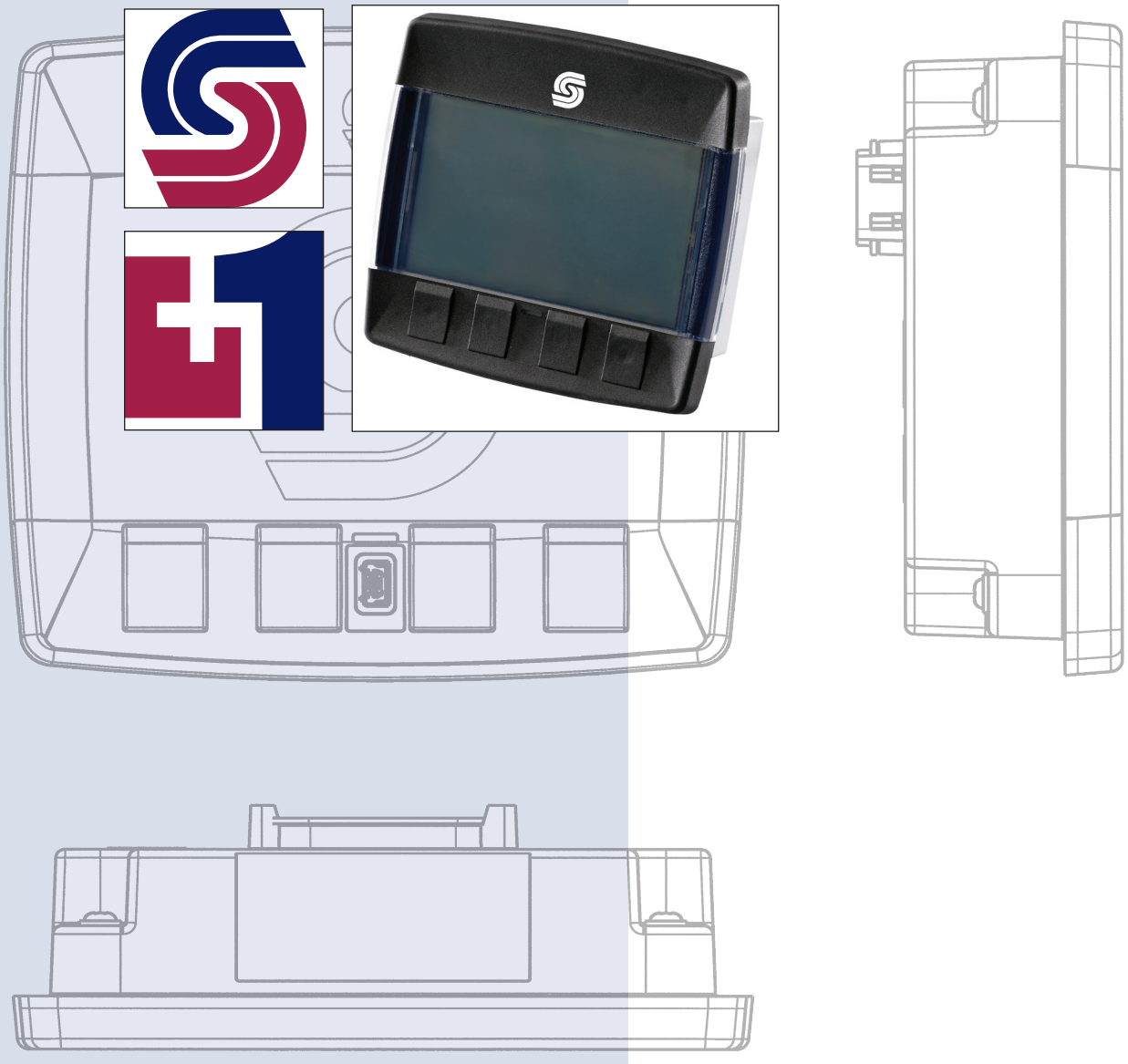
SAUER DANFOSS

PLUS+1 GUIDE

DP200 Series Graphical Terminals Technical Information



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DP200 Features

The DP200 series of PLUS+1 graphical terminals provides a cost effective, high quality solutions to fit the needs of today's mobile machines.

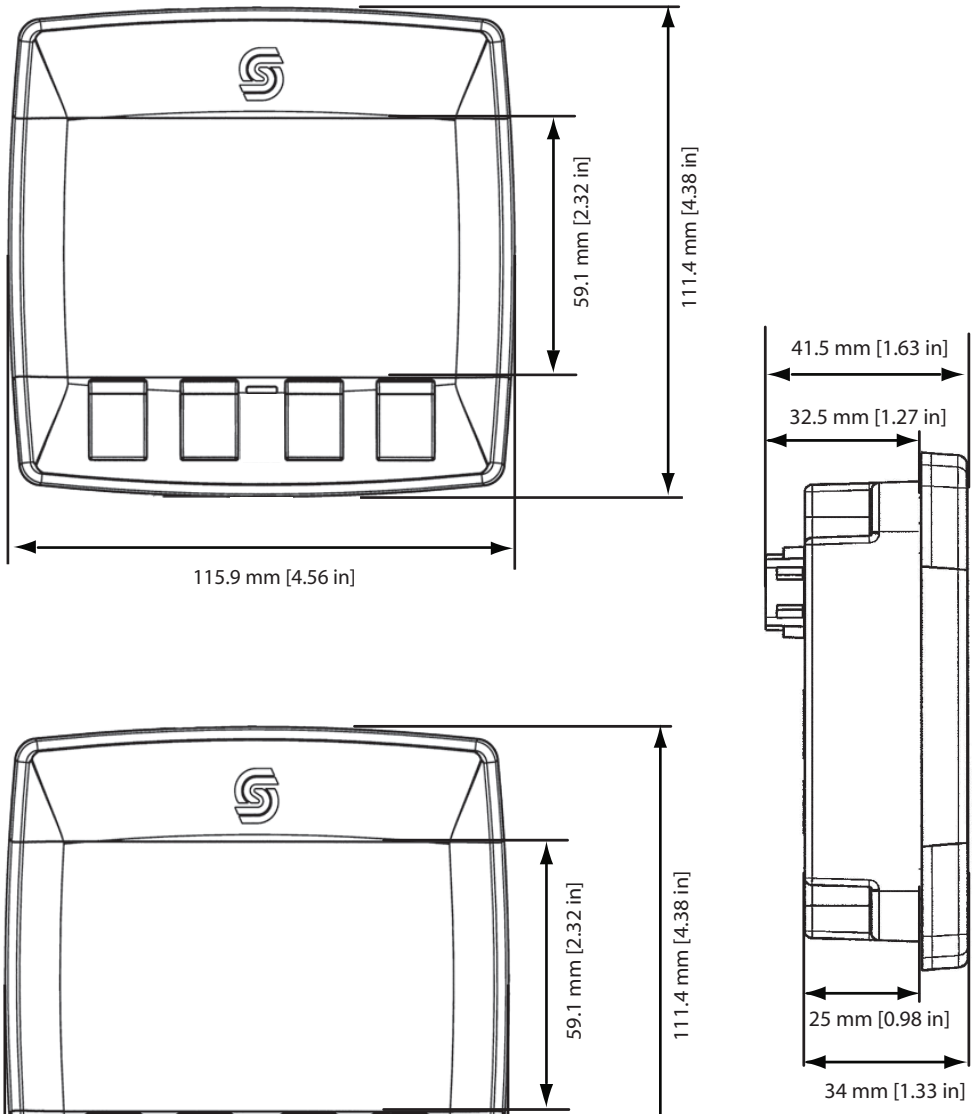
Features (Model Dependent):

- High resolution grayscale LCD display
- 4 programmable soft keys
- 2 red, 2 green software controlled LEDs
- 2 CAN 2.0B ports
- 1 fixed-range analog input
- 4 digital/analog inputs
- 2 digital/analog/frequency/current/ rheostat inputs
- 1 (0.5A) digital output
- Real time clock
- USB 2.0 port with mini-B connector
- PLUS+1™ GUIDE programmable
- J1939 engine monitor software package (requires application key)
- Data logging capability
- Rugged IP 67 rating class housing
- Integrated Deutsch™ connector
- Extended temperature performance range
- CE and E marked

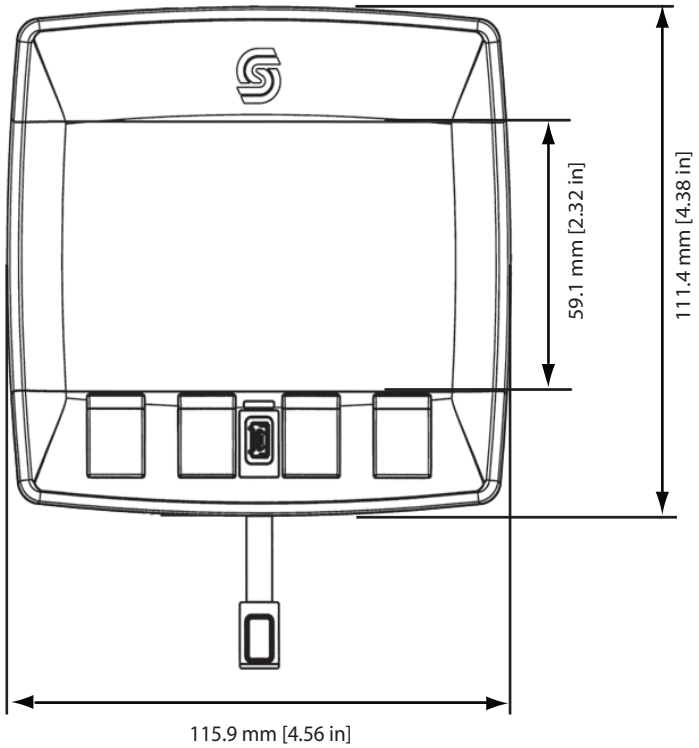
DP200 Model Features

The DP200 Series of graphical terminals are available in two general variants, the DP200 series and the DP210 series

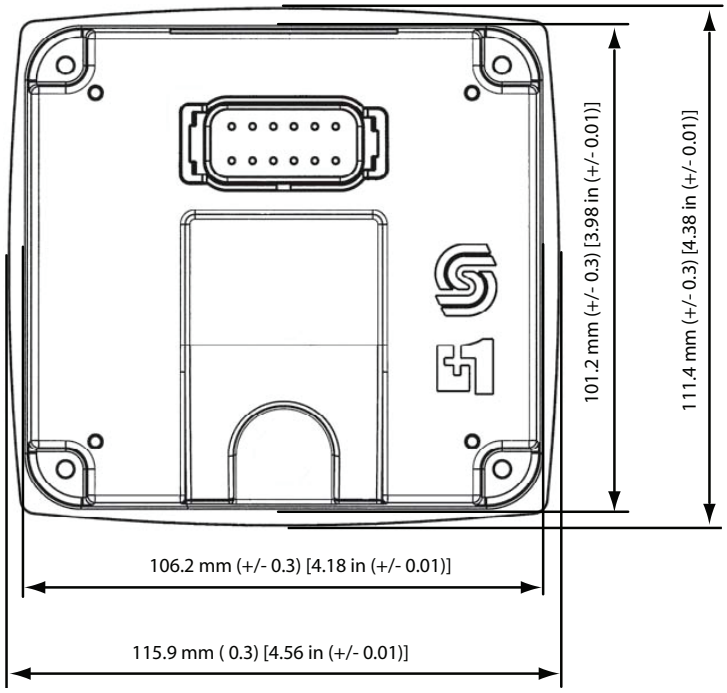
DP200 Dimensions



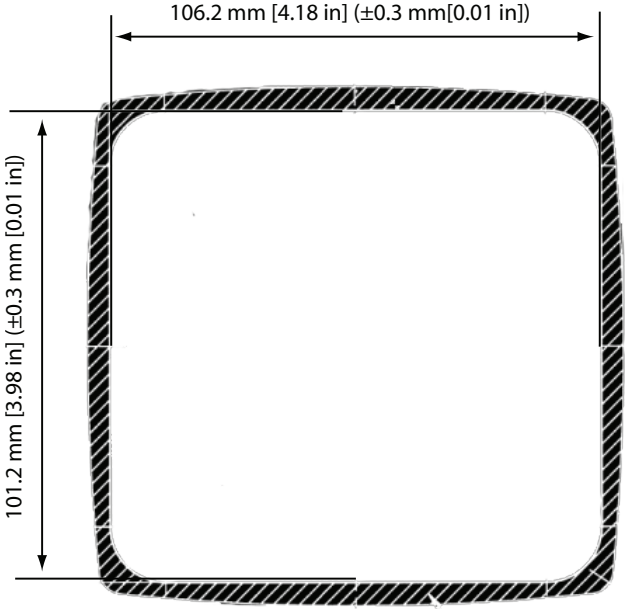
DP210 Dimensions



Installation Tolerances



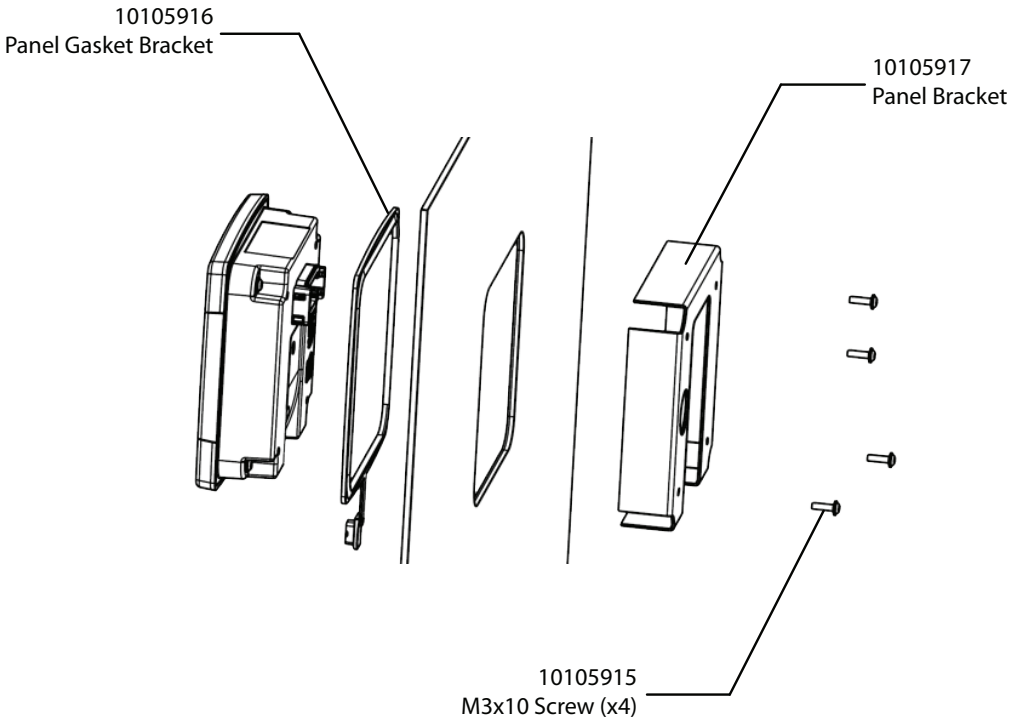
Panel gasket seal



- Gasket seal area crosshatched
- Panel thickness: 2-5 mm
- interior edges chamfered 0.2- 0.5 mm

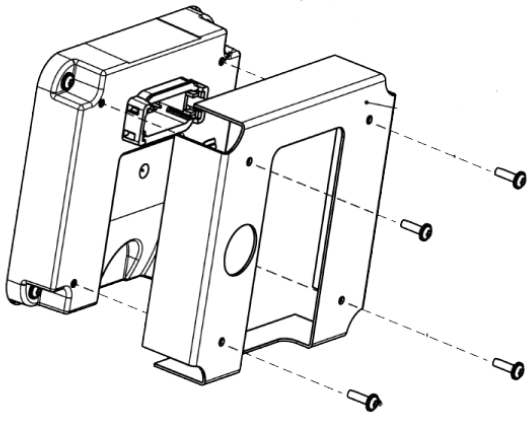
Mounting Installation

Suggested mounting procedure



Fastening Installation

Mounting screw placement



DP200 Series Electrical Connection Kit

10100944	12-pin Deutsch connection Kit
Contents:	
10100738 DTM06-12SA 12-pin Deutsch connector	
10100743 Deutsch terminal	
10100741 WM 12S locking plug	

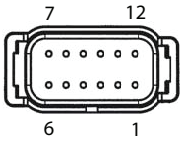
Mounting and fastening Installation

- Fastening hole depth: 11 mm
- May be threaded M3 and used with standard screws. Reassembly with self-tapping screws may damage existing threads in housing.
- Maximum torque: 0.9 Nm. Excessive torque force may cause damage to housing.

DP200 Series Product Parameters

DP200 Series	
Processor	ARM 7 core, 32 bit/ 60 MHz
RAM	64KB on-chip, 512MB on board
FRAM	16 KB
Power Supply	9–63 Vdc/6.5 Watts
Connector	Deutsch DTM-12
Type	LCD with 32 grayscale levels
Resolution	160 x 240 pixels
Viewable Area	80 mm x 55 mm [3.15 x 2.16]
IP Rating	IP67
Operation Temperature	Code C00: –20 °C — +70°C [–4°F — +158°F]
	Code C01: –40 °C — +85°C [–40°F — +176°F]
Storage Temperature	–40 °C — +85°C [–40°F — +176°F]
Weight	250 g [0.5 lb]
Vibration/Shock	5g/ 100g
EMC/ESD	100V/m / 15kV
Digital Output (0.5A)	1

Deutsch DTM-12 Pinout Function



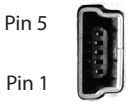
DP200 Series pin assignments

		Code B 00	Code B 01	Code B 04
1	Power ground-			
2	Power supply+			
3	CAN 0+			
4	CAN 0–			
5	AIN/ CAN Shield			
6	See Code B option	NC	DIN/AIN	NC
7	See Code B option	NC	DIN/AIN	NC
8	See Code B option	NC	DIN/AIN	CAN 1+
9	See Code B option	NC	DIN/AIN	CAN1-
10	DIN/AIN/FREQ IN/ CURRENT IN			
11	DIN/AIN/FREQ IN/ CURRENT IN			
12	DOUT (0.5A)			

DP210 Series pin assignments

1	Power ground-	
2	Power supply+	
3	CAN 0+	
4	CAN 0–	
5	AIN/ CAN Shield	
6	See Code B option	NC
7	See Code B option	NC
8	See Code B option	CAN 1+
9	See Code B option	CAN 1-
10	DIN/AIN/FREQ IN/ CURRENT IN	
11	DIN/AIN/FREQ IN/ CURRENT IN	
12	DOUT (0.5A)	

USB Mini-B Pinout Function



DP210 Series USB mini-B connector pin out information

1	VBUS
2	Data -
3	Data +
4	NC
5	Ground

Use care when wiring mating connector. Above pinouts are for device pins.

DP200 Variants and Model Codes

A *Model Name*

DP200	Graphical Display, IP 67 above panel
DP210	Graphical Display with USB

B *Inputs/Outputs*

00	1 CAN port, 2 DIN/AIN
01	1 CAN port, 6 DIN/AIN
04	2 CAN ports, 2 DIN/AIN

C *Real Time Clock/ Low Temperature Functionality*

00	No RTC and LTF
01	RTC and LTF

D *Flash Memory/Application Key*

01	1MB
02	2MB without Application Key
03	2MB with Application Key

E *Application Log*

00	None
04	4 MB

F *USB Port Type*

00	None
01	USB Device

DP200 Series Available Models

DP200-00-00-01-00-00	10107021
DP200-00-01-03-00-00	10107380
DP200-01-01-02-00-00	10106883
DP200-01-01-03-00-00	10107381
DP200-04-01-02-00-00	10107022
DP200-04-01-03-00-00	10107382

DP210 Series Available Models

DP210-04-01-02-04-01	10106884
DP200-04-01-03-04-01	10107383

Accessories

DP200 Series Related Products Part Numbers

10106893	J1939 CAN Engine Monitor Software
10100944	Deutsch Mating Connector Bag Assembly
10107264	DP2XX Mounting Hardware Kit
10101000	PLUS+1 GUIDE Single User License

Electrical Connection Kits

10100944	12-pin Deutsch connection Kit
	Contents: *10100738 DTM06-12SA 12-pin Deutsch connector* *10100743 Deutsch terminal* *10100741 WM 12S locking plug*

Connection Tools

10100744	Deutsch stamped contacts terminal crimp tool, size 20
10100745	Deutsch solid contacts terminal crimp tool

DP200 Mounting Kits

10107264	DP200 Series Mounting Hardware Kit
	Contents: *10105915 Mounting screws (x4), M3x10* *10105916 Panel gasket seal* *10105917 Panel mounting bracket*

Software

10101000	PLUS+1 GUIDE Software Application (including Service & Diagnostic Tool and Screen Editor)

APPLICATION AND OPERATING CONSIDERATIONS

• Disconnect your machine's battery power before connecting power and signal cables to the DP200.

• Before doing any electrical welding on your machine, disconnect all power and signal cable cables connected to the DP200

• Do not exceed the DP200 power supply voltage ratings. Using higher voltages may damage the DP200 and can create a fire or electrical shock hazard.

• Do not use or store the DP200 where flammable gases or chemicals are present. Using or storing the DP200 where flammable gases or chemicals are present may cause an explosion.

• Software configures the keypad buttons on the DP200. Do not use these buttons to implement critical safety features. Use separate mechanical switches to implement critical safety features such as emergency stops.

• Design systems that use the DP200 so that a communication error or failure between the DP200 and other units cannot cause a malfunction that might injure people or damage material.

• The protective glass over the DP200 display screen will break if hit with a hard or heavy object. Install the DP200 to reduce the possibility of it being hit by hard or heavy objects.

• If you break the protective glass of the DP200 screen, remove the DP200 and immediately return it to Sauer-Danfoss for service.

• Storing or operating a DP200 in an environment that exceeds the DP200 specified temperature or humidity rating may damage the DP200.

• Always clean the DP200 with a soft, damp cloth. Use a mild dishwashing detergent as needed. To avoid scratching and discoloring the DP200, do not use abrasive pads, scouring powders, or solvents such as alcohol, benzene, or paint thinner.

• The DP200 is not user serviceable. Return the DP200 to the factory in case of failure.

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