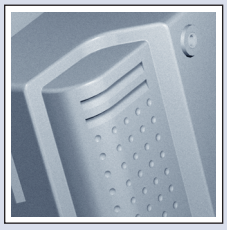
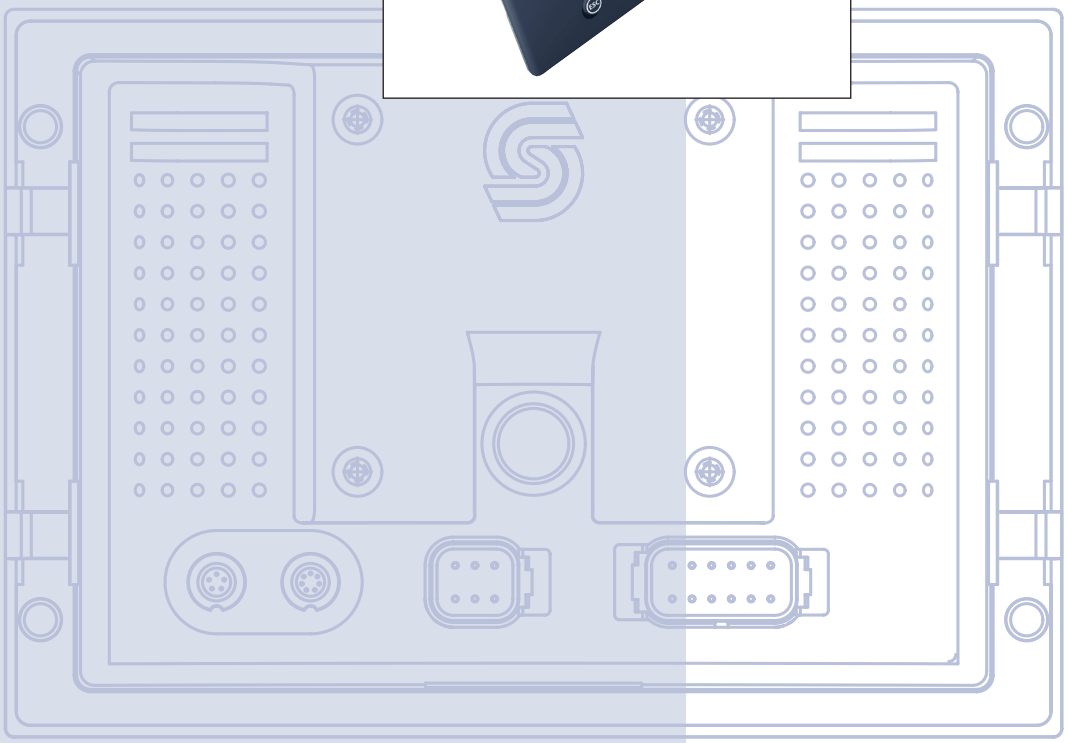
SAUER DANFOSS

DP6XX Series
Graphical Terminals

Technical Information





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DP2XX Graphical Display Family Technical Information

This manual is designed to be a comprehensive DP6XX graphical display reference tool for engineering and service personnel. It is one of the five primary sources of PLUS+1 product technical information. The other sources are individual graphical display data sheets, the PLUS+1 GUIDE User Manual, the PLUS+1 GUIDE Service Tool User Manual and relevant API documents.

What information is in this manual?

This manual describes common and variant information for all DP2XX graphical displays. This information contains general specifications, display connector assignments, input and output parameters, environmental ratings and installation details.

What information is in product data sheets?

Parameters that are unique to an individual PLUS+1 graphical display are contained in the graphical display product data sheet. Data sheets contain the following information:

- Numbers and types of inputs and outputs
- Display maximum current capacity
- Display installation drawings
- Display weights
- Product ordering information

What information is in the DP6XX API specification?

This document provides specific information regarding the programming capabilities of the DP6XX display family. Topics include programming variable settings, screen character use, supported PLUS+1 GUIDE components and other helpful information.

What information is in the PLUS+1 GUIDE Software User Manual

Detailed information regarding the PLUS+1 GUIDE software program that is used to build PLUS+1 graphical display applications is contained in the user manual. This technical information manual covers the following broad topics:

- How to use the GUIDE graphical application development tool to create graphical display applications
- How to configure module input and output parameters
- How to download GUIDE applications to target PLUS+1 hardware and display modules

What information is in the PLUS+1 GUIDE Service Tool User Manual?

Detailed information regarding the PLUS+1 GUIDE software program that is used to build PLUS+1 machine management solutions is contained in the user manual. This technical information manual covers the following broad topics:

- How to download GUIDE applications to target PLUS+1 hardware and display modules
- How to upload and download tuning parameters

PLUS+1 literature is available at: www.sauer-danfoss.com

User Liability and Safety Statements

The OEM of a machine or vehicle in which PLUS+1 electronic controls are installed has the full responsibility for all consequences that may occur. Sauer-Danfoss has no responsibility for any consequences (direct or indirect) caused by failures or malfunctions.

- Sauer-Danfoss has no responsibility for any accidents caused by incorrectly mounted or maintained equipment.
- Sauer-Danfoss does not assume any responsibility for PLUS+1 products being incorrectly applied or the system being programmed in a manner that jeopardizes safety.
- All safety critical systems shall include an emergency stop to switch off the main supply voltage for the outputs of the electronic control system. All safety critical components shall be installed in such a way that the main supply voltage can be switched off at any time. The emergency stop must be easily accessible to the operator.

- A system FMEA should be performed on all applications created for the DP6XX series of graphical displays.

DP6XX Family of Graphical Displays Features

- The external NAV button allows navigation through all DP600 functions. You determine where the NAV button is mounted so that the driver can navigate securely in all situations during work and travel.
- The DP6XX's built-in real-time clock enables machine use time tracking as well as data logging.
- The DP6XX's CAN, RedCAN™, RS-232, and USB interfaces can make it the gateway for updating and diagnosing all machine control systems.
- The DP6XX's powerful 32-bit microprocessor produces smooth, flicker-free movements of gauges and readouts in the DP6XX's display screen.
- The DP6XX's anti-glare display screen and sensor-controlled backlight levels provide superior legibility under all operating conditions, whether freestanding or dash-mounted.
- The DP6XX's video input option allows it to display the inputs from two standard composite video observation cameras.
- The DP6XX's rugged, shock-resistant construction protects against dust and resists the effects of moisture by fresh water.
- The DP6XX's GORE-TEX® membrane vent keeps moisture from fogging its display screen.
- The DP6XX's high brightness LED and digital alarm output alert the operator to alarm states under all operating conditions.

DP6XX Family of Graphical Displays Features

- The RS-232/USB interfaces provide a gateway function from the CAN network to PC. Complete system software updates are possible through the CAN network.
- Environmental and EMC standards are met according to Sauer-Danfoss standards defined for mobile applications.
- High performance 32 bit microcontroller for real-time screen updates. Smooth and flicker-free/accurate movement of virtual gauges and needles.
- Ample onboard flash/RAM memory
- On board real-time clock
- Data logging capabilities
- USB port for fast software download and uploads.
- Same outside dimensions for both screen variants
  – Color: advanced TFT 400 x 240 pixels, transflective, 256 colors
  – Monochrome: LED 320 x 240 pixels, transflective, B&W
- Two mounting options:
  – Flush mount in dashboard
  – Stand alone on post according to VESA standard 75mm x 75mm [2.953 in x 2.953 in]
- Fully integrated connectors and silicone keypad provide water and dust protection from all sides.
- Designed to withstand high-levels of shock/vibration.
- Extremely wide storage and operating temperature range.
- GORE-TEX® membrane prevents moisture ingress and fogging up of screen.
- Keypad with 14 buttons (8 soft-keys + 6 buttons for navigation).
- All buttons have green backlight design for low light and night use.
- Ultra-bright red/amber/green alarm LED.
- 2 shielded Binder connectors for USB, RS-232 & camera inputs.
- 2 CAN ports, one fully compatible to Sauer-Danfoss RedCAN™, for enhanced safety and reliability in mobile control systems.
- Integrated light sensor for automatic backlight adjustment.
- 2 Deutsch DTM connectors.
- Works with either 12 VDC or 24 VDC power supplies.

DP6XX Graphical Displays Naming Conventions

A	B	C	D	E	F
DP601	SA	CA	V2	KS	0001

A *Model Name*

DP600	10100890 SA CA V2 KS
DP610	10100889 SA CB V0 KS
DP620	10100888 SB CB V0 KS
DP601	10101912 SA CA V2 KS 0001

B

	Screen Variant
SA	400 x 240 color advanced TFT transflective
SB	320 x 240 monochrome transflective

C *Connector*

CA	C1 + C2 + C3 + C4 (only with video option D = V2)
CB	C1 + C2 + C3 (without video option D = V0)

D *Video Inputs*

V0	No video inputs
V2	Two video inputs

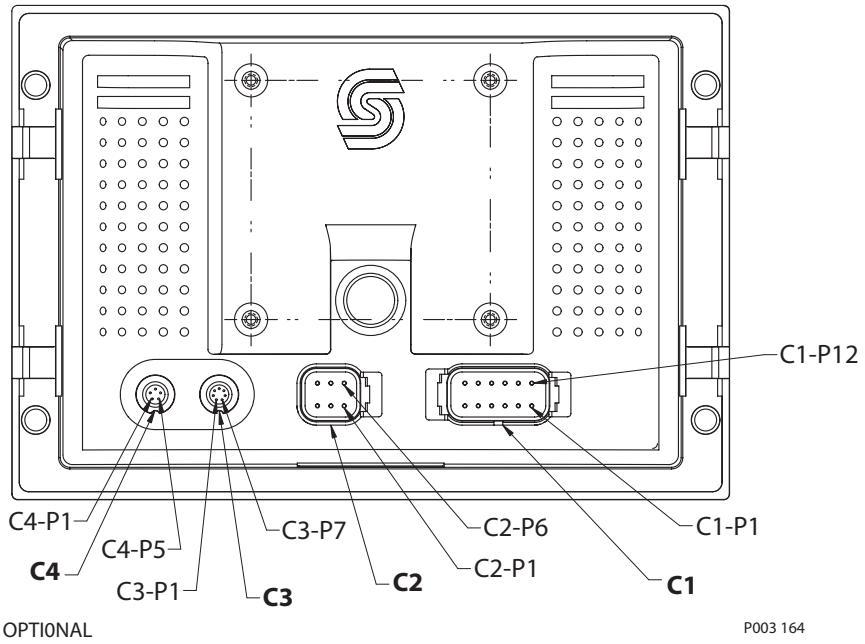
E *Keypad*

KS	Standard keypads with 8 soft- and 6 function-keys

F *Options/Special Hardware or Software*

0001	Isobus

DP6XX Series Pin Out Overview



Connector C1

Pin	Function
C1-P1	Main power ground
C1-P2	Main power supply
C1-P3	CAN bus – CAN1 +
C1-P4	CAN bus – CAN1 -
C1-P5	CAN shield
C1-P6	RedCAN right bus – CAN0 +
C1-P7	RedCAN right bus – CAN0 -
C1-P8	Encoder supply
C1-P9	Encoder pulse A input
C1-P10	Encoder pulse B input
C1-P11	Encoder enter input
C1-P12	Buzzer – ground

Connector C3

Pin	Function
C3-P1	USB power bus
C3-P2	USB data –
C3-P3	USB data +
C3-P4	USB ground
C3-P5	ground
C3-P6	RS-232 RxD
C3-P7	RS-232 TxD

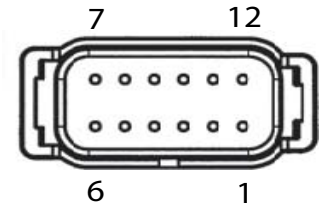
Connector C2

Pin	Function
C2-P1	Redundant power ground
C2-P2	Redundant power supply
C2-P3	RedCAN left bus – CAN0 +
C2-P4	RedCAN left bus – CAN0 -
C2-P5	CAN shield
C2-P6	Analog in

Connector C4

Pin	Function
C4-P1	Video power ground
C4-P2	Video power 12/24 VDC out
C4-P3	Video input 1
C4-P4	Video ground
C4-P5	Video input 2

DP6XX Series Pin Out Overview



Deutsch DTM06-12 connector

DP Deutsch DTM06-12 Pin Assignments

Model Name	DP600	DP610	DP620
Model Num.	11092496	11092495	11092494
Pin 1	Pwr Ground (-)	Pwr Ground (-)	Pwr Ground (-)
Pin 2	Pwr Supply (+)	Pwr Supply (+)	Pwr Supply(+)
Pin 3	CAN 1High	CAN 0 High	CAN 0 High
Pin 4	CAN 0 Low	CAN 0 Low	CAN 0 Low
Pin 5	AIN/CAN Shield	AIN/CAN Shield	AIN/CAN Shield
Pin 6	CAN0 Hi	CAN0 Hi	CAN0 Hi
Pin 7	CAN0 Lo	CAN0 Lo	CAN0 Lo
Pin 8	Sensor Supply	Sensor Supply	Sensor Supply
Pin 9	Multi Input*	Multi Input*	Multi Input*
Pin 10	Multi Input*	Multi Input*	Multi Input*
Pin 11	Digital/Analog In	Digital/Analog In	Digital/Analog In
Pin 12	Digital Out	Digital Out	Digital Out

* Multifunction inputs include the following software configurable inputs: Din/AIN/FreqIN, Rheo, 4–20 mAIN

DP600 Binder Series 702 USB Connector 3 pin out information

1	Vbus
2	Data -
3	Data +
4	N/C
5	Ground
6	N/C
7	N/C
8	N/C

DP600 Binder Series Connector 4 pin out information

1	Video Ground
2	Video Power
3	Video In
4	Video Ground
5	video Input

USB functionality is intended only for use with the PLUS+1 GUIDE Service Tool application. USB use is supported in PLUS+1 GUIDE Service Tool versions 4.0 and later.

DP6XX Series General Technical Specifications

Operating voltage range	9 to 36 VDC, protected against reverse polarity and load-dump
Power consumption	15 W max
Digital Inputs (3)	U_{in} < 1.5 VDC logical low U_{in} > 1.5 VDC logical high 2 inputs designed for 90° A/B encoder signals, menu NAV button
Option: Video inputs (2)	Standard composite PAL video signal input.
Output for buzzer (1)	low side, max 0.5 A
Camera power output	12V, Max. output current: 400 mA
Camera video input	Composite video, 1V peak-peak
CAN interface for external NAV	2 CAN ports according to CAN specification 2.0 B (active). 250 kbit standard setting (recommended) Baud rates: 111kbit, 250 kbit, 500kbit, 1 Mbit 2 pins for CAN shield according to J1939. One CAN port, fully compatible to Sauer-Danfoss RedCAN™ standard.
Encoder inputs	Logical inputs: 5V Logical 0: U_{in} < 1.5V Logical 1: U_{in} > 3.5V Input impedance: 100kΩ Max. frequency input: 100 Hz
Encoder supply	5V, Max. output current 400 mA
Communication	USB RS-232: Baud rates: 1200, 2400, 9600, 19200, 28800,38400, 115200 baud. No handshake available.
Memory	8MB RAM 8K FRAM parameter memory (256 byte available for application data storage).
Electrical connections	1 Deutsch DTM 12-pin connector, Code A 1 Deutsch DTM 6-pin connector 1 Binder 7-pin connector for USB/RS-232 1 Binder 5-pin connector for video-signals
Operating temperature	color screen -30 °C to + 70 °C [-22 °F to + 158 °F] monochrome -20 °C to + 70 °C [-4 °F to + 158 °F]
Storage temperature	color screen -30 °C to + 80 °C [-22 °F to + 176 °F] monochrome -30 °C to + 80 °C [-22 °F to + 176 °F]
Moisture Ingression	IP67, in accordance with SS-EN 60 529 **Note**: unused connections must have sealing plugs for IP rating to be valid.
Vibration	IEC 60068-2-64-Fh with severity according to IEC TR 60721-4-5 environmental class 5M3
Shock	IEC 60068-2-27-Ea with severity according to IEC TR 60721-4-5 environmental class 5M3; free fall according to IEC 68-2-32Ed
Electrical	Automotive transients ISO 7637/1-2 Automotive transients ISO 7637/3
EMC emission	EN 61000-6-3
EMC immunity	EN 61000-6-2
Membrane switches	14 keys 1 million cycles endurance Pressure force: 300 gram (+/- 30 grams)
Real time clock	Date & Time Backup time: minimum 1 month Accuracy: 1 sec/24 hours
Programmable ambient light sensor	OSRAM SFH3410
Ultra bright faceplate-integrated red LED alarm	

DP6XX Series Pin Out Overview

DP6XX Series Displays support the following pin types:

Digital or Analog (DIN/AIN)
Multifunction (Din/AIN/FreqIN, Rheo, 4–20 maIN)
Analog or Temperature or Rheostat (AIN/Temp/Rheo)
Fixed Range Analog or CAN shield (AIN/CAN shield)

Each input pin allows one of the above functional types. For pins with multiple functions, input configurations are user programmable using PLUS+1 GUIDE templates.

For all input types, the following specification is applicable.

Digital/Analog Inputs

High Level Digital Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0—69.3	0—84.7	—	—
Input Resistance	kΩ	—	—	105 no pull up/down 13 With pull-up to 5V 13 Pull-down to ground 7 With pull-up and down to 5V	
Programmable Low Threshold Voltage	V	0	?	—	—
Programmable High Threshold Voltage	V	0	?	—	—
Rise time	µs	—	—	20	—
Fall Time	µs	—	—	20	—

High Level Analog Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0	70	—	—
Input Resistance	kΩ	—	—	105 no pull up/down 13 With pull-up to 5V 13 Pull-down to ground 7 With pull-up and down to 5V	
Analog Voltage Error (± 300mV+ U_{in} x 3.4%)	mV	—	—	± 260 U_{in} = 0V ± 2920 U_{in} = 70V	
Bandwidth	kHz	—	—	6	—

Multifunction Inputs

Low Level Digital Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0	63	—	—
Input Resistance	kΩ	—	—	233 no pull up/down 14 With pull-up to 5V 14 Pull-down to ground 7.3 With pull-up and down to 5V	
Programmable Low Threshold Voltage	V	0	?	—	—
Programmable High Threshold Voltage	V	0	?	—	—
Rise Time	µs	—	—	20	—

Low Level Analog Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0	63	—	—
Input Resistance	kΩ	—	—	233 no pull up/down 14 With pull-up to 5V 14 Pull-down to ground 7.3 With pull-up and down to 5V	
Analog Voltage Error	mV	—	—	± 0.5 U_{in} = 0V ± 19 U_{in} = 5V	
Bandwidth	kHz		—	6.8	—

Multifunction Inputs

High Level Digital Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0	70	—	—
Input Resistance	kΩ	—	—	105 no pull up/down 13 With pull-up to 5V 13 Pull-down to ground 7 With pull-up and down to 5V	
Programmable Low Threshold Voltage	V	0	?	—	—
Programmable High Threshold Voltage	V	0	?	—	—
Rise time	µs	—	—	20	—
Fall Time	µs	—	—	20	—

High Level Analog Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0	70	—	—
Input Resistance	kΩ	—	—	105 no pull up/down 13 With pull-up to 5V 13 Pull-down to ground 7 With pull-up and down to 5V	
Analog Voltage Error (± 300mV+ U_{in} x 3.4%)	mV	—	—	± 100 U_{in} = 0V ± 2760 U_{in} = 70V	
Bandwidth	kHz	—	—	7.1	—

Multifunction Inputs

Resistance Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Resistance Range	k Ω	0	10	—	—
Input Resistance		—	1.33	—	Pull up to 5V
Resistance Error	Ω	—	±5 ±19	—	R = 0kΩ R = 10kΩ

Current Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Current Range	—	0—53	0—65	—	Shut off at 50 mA
Input Resistance	Ω	—	—	100	2.0V at 20 mA Input current
Current Error (± 3.5%)	mA	—	± 0.08 ± 0.7	—	I_{in} = 0 mA I_{in} = 20 mA

Frequency Input

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Frequency Range	kHz	0	10	—	—

CAN Shield-Analog Inputs (5V only)

CAN Shield

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Input Impedance	—	—	—	1µF+1Ω	—

Analog Input (5V only)

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Voltage Range	V	0	5.4		—
Input resistance	kΩ	—	—	233	—
Analog Voltage Error ± (20mV+U_{in} x 1.6 %)	mV	—	± 20 ± 120	—	Uin = 0V Uin = 5V
Bandwidth	kHz	—	—	2	—

CAN/RedCAN Communication

CAN-RedCAN

Description	*Unit*	*Minimum*	*Maximum*	*Typical*	*Comment*
Available Baud Rates	kbps	0.01	100	50 100 125 250 500 1000	With 120 Ω termination
Maximum Input Voltage Range	V	0	70	—	—

Power

Supply Voltage/Maximum Current Ratings

DP6XX graphical displays are designed to operate with a nominal 9–63 Vdc power supply with reverse polarity protection.

Supply Voltage

Description	*Unit*	*Min*	*Maximum*	*Comment*
DC Supply Voltage	Volt	9	70	With reverse polarity protection
DC Supply Current (circuit board only)	mA	—	2.5 30 70 40	Ubat = 8V UBat =14V UBat = 28V Ubat = 70V
Power Supply Interruption (without rebooting)	ms	34 36 46 100	N/C	
Load dump protection, 12V systems, % pulses, Cycle time 100 s, Criteria C	V Ω ms ms	87 1 200 5	—	According to ISO 7637-2
Load dump protection, 28V systems, % pulses, Cycle time 100 s, Criteria C	V Ω ms ms	183 3 200 10		According to ISO 7637-2
Load dump protection, 36V systems, % pulses, Cycle time 100 s, Criteria C	V Ω ms ms	200 4.3 200 10		According to ISO 7637-2
Load dump protection, 48V systems, % pulses, Cycle time 100 s, Criteria C	V Ω ms ms	200 6.3 200 10		According to ISO 7637-2

5V Reference Output

Description	*Unit*	*Minimum*	*Maximum*
Output Voltage	V	4.8	5.2
Output Current	A	0.5	—
Output Short Circuit	A	—	.9
Short circuit Protection	V	0	70

USB Input/Output Parameters

USB Input/Output Parameters

Description	*Unit*	*Minimum*	*Typical*		*Comment*
2.0 Full Speed	Mbit/s	—	12	—	—
Vbus Input Voltage	Volt	—	>4.4	—	—
Vbus Input Resistance	k Ω	—	70	—	Vbus<5.25V—
Short Circuit Protection (No Damage)	V	0	—	70	—
Vbus Output Voltage	V	4.75	—	5.25	—
VbusOutput Current	A	—	0.5	—	—
Vbus Short Current	A	—	—	1.1	—

Video Parameters

Video Parameters

Description	*Unit*	*Minimum*	*Typical*	*Maximum*	*Comment*
Short Circuit Protection	V	0	—	70	—
12V Output Voltage (9V<Ubat<70V)	V	11.5	12	12.7	—
12V Output Current	A	—	0.5	—	Vbus<5.25V—
24V Output Voltage (9V<Ubat<70V)	V	23	24	26	—
24V Output Current	A	—	—	0.25	—
Video Formats	NTSC, PAL, SECAM	—	—	—	Composite video

Environmental and Testing Specifications

Climatic

Condition	Rating
Cold, heat storage and operation	IEC 60068-2-1, IEC 60068-2-2
Fogging	IEC 60068-
Temperature change	IEC 60068-2-30
Moisture ingress	IEC 60529
Sunlight visibility	IEC 68-2-5

Chemical

Condition	Rating
Chemical resistance	ISO 16750-5

Mechanical

Condition	Rating
Vibration, resonance	IEC 60068-2-6
Vibration, operation	IEC 60068-2-64
Bump	IEC 60068-2-29
Shock	IEC 60068-2-27
Free fall	IEC60068-2-32

Connecting the DP6XX Display

Mating Connectors

PLUS+1 graphical displays use Deutsch connectors. Sauer Danfoss has assembled a mating connector kit, referred to as a bag assembly. Mating connector bag assembly ordering information is found in the product data sheet for each module.

Product Installation

Recommended Machine Wiring Guidelines

1. All wires must be protected from mechanical abuse. Wires should be run in flexible metal or plastic conduits.
2. Use 85° C [185° F] wire with abrasion resistant insulation. 105°C [221°F] wire should be considered near hot surfaces.
3. Use a wire size that is appropriate for the module connector.
4. Separate high current wires such as solenoids, lights, alternators, or fuel pumps from sensor and other noise-sensitive input wires.
5. Run wires along the inside of, or close to, metal machine surfaces where possible. This simulates a shield which will minimize the effects of EMI/RFI radiation.
6. Do not run wires near sharp metal corners. Consider running wires through a grommet when rounding a corner.
7. Do not run wires neat hot machine members.
8. Provide strain relief for all wires.
9. Avoid running wires near moving or vibrating components.
10. Avoid long, unsupported wire spans.
11. All analog sensors should be powered by the sensor power source from the graphical display and ground returned to the sensor ground pin on the display.
12. Sensor lines should be twisted about one turn every 10 cm [4 in].
13. It is better to use wire harness anchors that will allow wires to float with respect to the machine rather than rigid anchors.

Welding on a machine equipped with a PLUS+1 graphical display

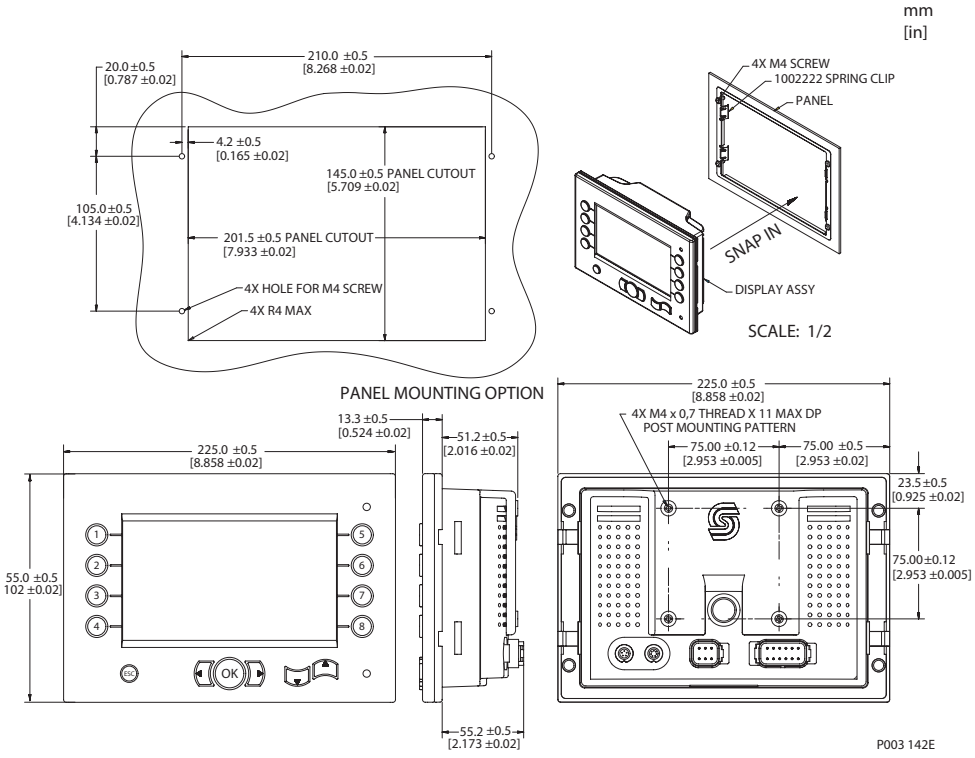
The following procedures are recommended when welding on a machine equipped with a PLUS+1 graphical display:

- The engine should be off.
- Disconnect the negative battery cable from the battery.
- Do not use electrical components to ground the welder. Clamp the ground cable for the welder to the component that will be welded as close to possible to the weld.

DP6XX Mounting and Panel Dimensions

Two mounting options:

- Flush mounted into dashboard using Sauer-Danfoss spring clip frame.
- Stand-alone on post, according to VESA standard 75 mm x 75 mm [2.953 in x 2.953 in].



DP6XX Operation Considerations

- Disconnect your machine's battery power before connecting power and signal cables to the DP6XX.
- Before doing any electrical welding on your machine, disconnect all power and signal cable cables connected to the DP6XX.
- Do not exceed the DP6XX's power supply voltage ratings. Using higher voltages may damage the DP6XX and can create a fire or electrical shock hazard.
- Do not use or store the DP6XX where flammable gases or chemicals are present. Using or storing the DP6XX where flammable gases or chemicals are present may cause an explosion.
- Software configures the keypad buttons on the DP6XX. 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 DP6XX so that a communication error or failure between the DP600 and other units cannot cause a malfunction that might injure people or damage material.
- The protective glass over the DP6XX's display screen will break if hit with a hard or heavy object. Install the DP6XX to reduce the possibility of it being hit by hard or heavy objects.
- If you break the protective glass of the DP6XX screen, remove the DP600 and immediately return it to Sauer-Danfoss for service.
- Storing or operating a DP6XX in an environment that exceeds the DP6XX's specified temperature or humidity rating may damage the DP6XX.
- Always clean the DP6XX with a soft, damp cloth. Use a mild dishwashing detergent as needed. To avoid scratching and discoloring the DP6XX, do not use abrasive pads, scouring powders, or solvents such as alcohol, benzene, or paint thinner.
- The DP6XX is not user serviceable. Return the DP6XX to the factory in case of failure.

DP6XX Part Numbers

Electrical Parts

10100728	5-pin male Binder connector (includes 2m cable)
10100729	7-pin male Binder connector (includes 2m cable)
10100738	DTM06-12SA, 12-pin Deutsch connector
10100739	DTM06-6S 6-pin Deutsch connector
10100741	WM 12S locking plug for 10100738 Deutsch connector
10100742	WM6S locking plug for 10100739 Deutsch connector
10100743	0462-201-20141, Deutsch terminal for DTM06-xS
10103497	USB cable

Electrical Connection Kits

10100868	DP600 Connection Kit *Contents:* *10100728 5-pin male Binder connector* *10100729 7-pin male Binder connector* *10100944 12-pin Deutsch connection kit* *10103494 6-pin Deutsch connection kit*
10100944	12-pin Deutch connection Kit *Contents:* *10100738 DTM06-12SA 12-pin Deutsch connector* *10100743 Deutsch terminal* *10100741 WM 12S locking plug*
10103494	6-pin Deutsch connection kit *Contents:* *10100739 DTM06-6S 6-pin Deutsch connector* *10100743 Deutsch terminal* *10100742 WM 6S locking plug*
10103495	Deutch IP67 Seal Kit
10103496	Binder IP67 Seal Kit

Connection Tools

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

Camera

10100831	Compact Color Camera, 12V

DP600 Series Accessory Information

Model	Part Num.
DP6XX Panel Mounting Kit	11079236
Deutsch 12-pin Connector Kit (DTM06-12SA)	10100944
Binder Connector and Cable Kit (Series 702)	10103497

Software

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

Index

SAUER DANFOSS

OUR PRODUCTS

Hydrostatic transmissions

Hydraulic power steering

Electric power steering

Electrohydraulic power steering

Closed and open circuit axial piston pumps and motors

Gear pumps and motors

Bent axis motors

Orbital motors

Transit mixer drives

Planetary compact gears

Proportional valves

Directional spool valves

Cartridge valves

Hydraulic integrated circuits

Hydrostatic transaxles

Integrated systems

Fan drive systems

Electrohydraulics

Microcontrollers and software

Electric motors and inverters

Joysticks and control handles

Displays

Sensors

Sauer-Danfoss Mobile Power and Control Systems – Market Leaders Worldwide

Sauer-Danfoss is a comprehensive supplier providing complete systems to the global mobile market.

Sauer-Danfoss serves markets such as agriculture, construction, road building, material handling, municipal, forestry, turf care, and many others.

We offer our customers optimum solutions for their needs and develop new products and systems in close cooperation and partnership with them.

Sauer-Danfoss specializes in integrating a full range of system components to provide vehicle designers with the most advanced total system design.

Sauer-Danfoss provides comprehensive worldwide service for its products through an extensive network of Authorized Service Centers strategically located in all parts of the world.

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