SAUER DANFOSS

PLUS+1™ IOX024-020 Expansion Module

Mobile Machine Management

The IOX024-020 input/output (I/O) expansion module is an element of the flexible, powerful and expandable PLUS+1 family of mobile machine management products. Expansion modules provide cost-effective additional I/O to mobile machine control systems.

Product Highlights

Expansion modules are associated with a PLUS+1 controller. PLUS+1 GUIDE (Graphical User Integrated Development Environment) applications running in the controller read inputs from and write outputs to expansion module pins as if the pins are physically located on the controller. Pin properties are configured in the controller's GUIDE application.

PLUS+1 compliance eliminates need for the system designer to write CAN transmit and receive messages in both the controller and associated expansion modules.

Application Development

Users configure expansion modules using PLUS+1 GUIDE. This Microsoft® Windows®-based development environment features a user-friendly, field proven, icon-based graphical programming tool, application downloader, and service/diagnostic tool.

Local Address:

IOX024-020 Expansion Module

Features

- 24 pins: (2) individually keyed Deutsch® DTM 12 pin connectors

- 8 inputs
  - (5) universal (DIN/AIN/FreqIN) that the user can define as either:
    - *Analog*: with configurable ranges 0 to 5.25 Vdc (with over range protection) or 0 to 36 Vdc;
    - *Digital*: pull up (5 Vdc), pull down (0 Vdc) or pull to center (2.5 Vdc);
    - *Frequency (timing)*: 1 Hz to 10 kHz
  - (2) digital (DIN) configurable as pull up (5 Vdc), pull down (0 Vdc) or pull to center (2.5 Vdc)
  - (1) fixed-range analog (AIN/CAN shield) 0 to 5.25 Vdc or CAN shield pin

- 8 outputs
  - (8) universal (PWMOUT/DOUT/PVGOUT) that the user can define as either:
    - *Digital:* (3 A), configurable as source or sink;
    - *PWM:* (30 to 4000 Hz), configurable as open or closed loop with current control;
    - *Analog voltage:* open loop PWM at 4000 Hz
  - Any PWMOUT/DOUT/PVGOUT can be used to provide reference power to one PVG valve

- 9 to 36 Vdc power supply, monitored internally

- 1 CAN 2.0 B port, the user can configure the fixed-range analog input as the shield pin

- Power supply for external sensors rated at 5 Vdc to 200 mA and regulated internally

- 3 mounting alternatives: stack, end, or side

- CE compliant

IOX024-020 Dimensions and Pin Assignments

mm [in]

2195B
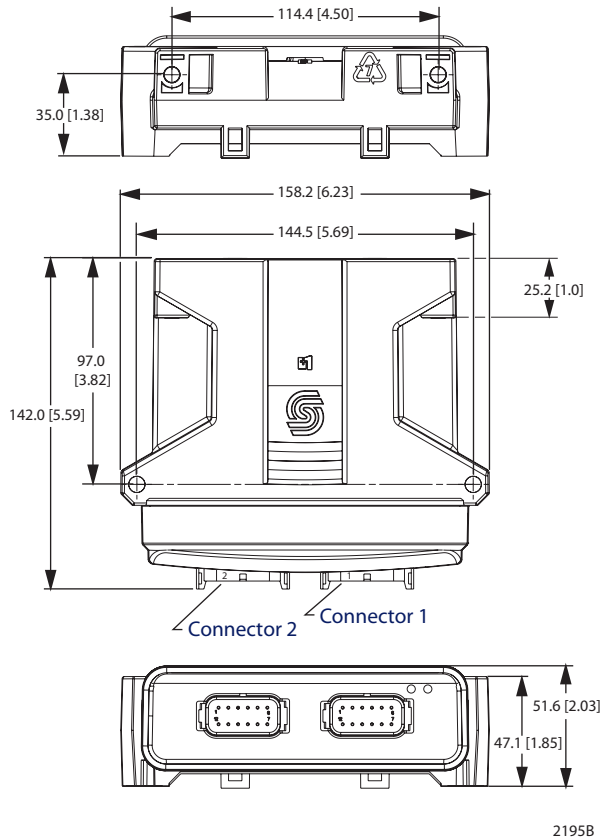
❶ Caution
PCB damage may occur. Connect all device power supply + pins to battery +.

❶ Caution
This device is not field serviceable. Opening the device housing voids the warranty.

24 Pin
Connector 2

Pin	Function
C2-P1	DIN/AIN/FreqIN
C2-P2	DIN/AIN/FreqIN
C2-P3	PWMOUT/DOUT/PVGOUT
C2-P4	PWMOUT/DOUT/PVGOUT
C2-P5	PWMOUT/DOUT/PVGOUT
C2-P6	PWMOUT/DOUT/PVGOUT
C2-P7	PWMOUT/DOUT/PVGOUT
C2-P8	PWMOUT/DOUT/PVGOUT
C2-P9	PWMOUT/DOUT/PVGOUT
C2-P10	PWMOUT/DOUT/PVGOUT
C2-P11	Power supply +
C2-P12	Power supply +

Connector 2
'B' key (black)
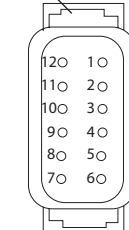
Connector 1

Pin	Function
C1-P1	Power ground -
C1-P2	Power supply +
C1-P3	CAN +
C1-P4	CAN -
C1-P5	AIN/CAN shield
C1-P6	DIN
C1-P7	DIN
C1-P8	5 Vdc sensor power +
C1-P9	Sensor power ground -
C1-P10	DIN/AIN/FreqIN
C1-P11	DIN/AIN/FreqIN
C1-P12	DIN/AIN/FreqIN

Connector 1
'A' key (gray)
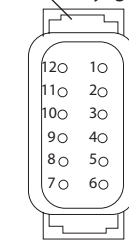
2196B

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

Specifications

Supply voltage	9 to 36 Vdc
Operating temperature (ambient)	-40°C to 70°C [-40°F to 158°F]
Storage temperature	-40°C to 85°C [-40°F to 185°F]
Programming temperature	0°C to 70°C [32°F to 158°F]
IP rating (with mating connector attached)	IP 67
EMI/RFI rating	100 V/m
Weight	0.40 kg [0.88 lb]
Vibration	IEC 60068-2-64
Shock	IEC 60068-2-27 test Ea
Maximum current, sourcing	24 A
Maximum current, sinking	8 A

Ordering Information

IOX024-020	11062251

Related product	Sauer-Danfoss material number	
CG150 CAN/USB Gateway	10104136	
Deutsch® mating connector bag assembly	10102023 (16 to 20 AWG)	10100945 (20 to 24 AWG)
PLUS+1 GUIDE single user license	10101000	

Comprehensive technical information: *PLUS+1 Controller Family Technical Information,* **520L0719**;
PLUS+1 Compliant IOX024-020 Function Block User Manual, **11063393**
Sauer-Danfoss product literature on line at: www.sauer-danfoss.com