Data Sheet

PLUS+1 Expansion Module
IOX024-020

Mobile Machine Management

This product 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.
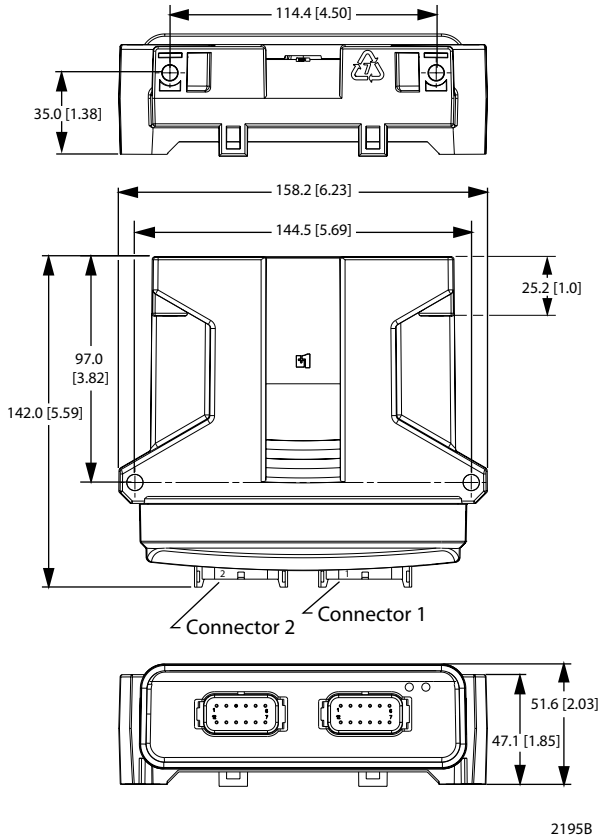
Features

- 24 pins: (2) individually keyed DEUTSCH DTM 12 pin connectors
- 9 to 36 Vdc power supply, monitored internally
- 1 CAN 2.0B port, the fixed range analog input can be configured as the shield pin
- 3 mounting alternatives: stack, end , or side
- CE compliant
- 8 inputs: (5) universal (DIN/AIN/FreqIN) that the user can define as either:

Analog: with configurable ranges 0 to 5.25 Vdc 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)
- (1) fixed-range analog (AIN/CAN shield) 0 to 5.25 Vdc or CANshield 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
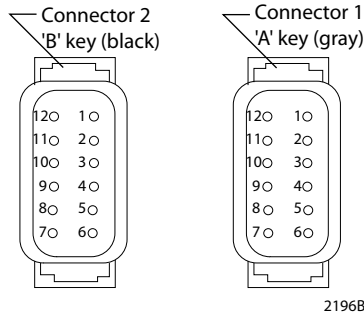- Power supply for external sensors rated at 5 Vdc to 200 mA and regulated internally

IOX024-020 Dimensions and Pin Assignments

mm [in]

2195B

⚠ Caution

PCB damage may occur. Connect all device power supply + pins to battery +. This device is not field serviceable. Opening the device housing voids the warranty.

Specifications

Supply voltage	9 to 36 Vdc
Operating temp. (ambient)	-40°C to 70°C [-40°F to 158°F]
Storage temp.	-40°C to 85°C [-40°F to 185°F]
Programming temp.	0°C to 70°C [32°F to 158°F]
IP rating	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
Max. current, sourcing	24 A
Max. current, sinking	8 A

24 Pin

2196B

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

Pin	Controller function	Pin	Controller function
C2-P1	DIN/AIN/FreqIN	C1-P1	Power ground -
C2-P2	DIN/AIN/FreqIN	C1-P2	Power supply +
C2-P3	PWMOUT/DOUT/PVGOUT	C1-P3	CAN +
C2-P4	PWMOUT/DOUT/PVGOUT	C1-P4	CAN -
C2-P5	PWMOUT/DOUT/PVGOUT	C1-P5	AIN/CAN shield
C2-P6	PWMOUT/DOUT/PVGOUT	C1-P6	DIN
C2-P7	PWMOUT/DOUT/PVGOUT	C1-P7	DIN
C2-P8	PWMOUT/DOUT/PVGOUT	C1-P8	5 Vdc sensor power +
C2-P9	PWMOUT/DOUT/PVGOUT	C1-P9	Sensor power ground -
C2-P10	PWMOUT/DOUT/PVGOUT	C1-P10	DIN/AIN/FreqIN
C2-P11	Power supply +	C1-P11	DIN/AIN/FreqIN
C2-P12	Power supply +	C1-P12	DIN/AIN/FreqIN

Ordering Information and Related Products

Description	Part number	
IOX024-020	11062251	
CG150 CAN/USB Gateway	10104136	
DEUTSCH mating connector bag assembly	10102025 (16 to 20 AWG)	10100944 (20 to 24 AWG)
PLUS+1® GUIDE single user license	10101000	