

## Data Sheet

# PLUS+1<sup>®</sup> Controllers

## OX024-010

### Mobile Machine Management

The OX024-010 output expansion module is an element of the flexible, powerful and expandable PLUS+1<sup>®</sup> family of mobile machine management products. Expansion modules provide cost-effective additional I/O to mobile machine control systems.

### Product Highlights

Output expansion modules are associated with a PLUS+1<sup>®</sup> controller. PLUS+1<sup>®</sup> GUIDE (Graphical User Integrated Development Environment) applications running in the controller 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<sup>®</sup> 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<sup>®</sup> GUIDE. This Microsoft<sup>®</sup> Windows<sup>®</sup>-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
- 3 mounting alternatives: stack, end, or side
- CE compliant
- 16 outputs
- (10) universal (PWMOUT/DOUT/PVGOUT) that are user-defined as either:

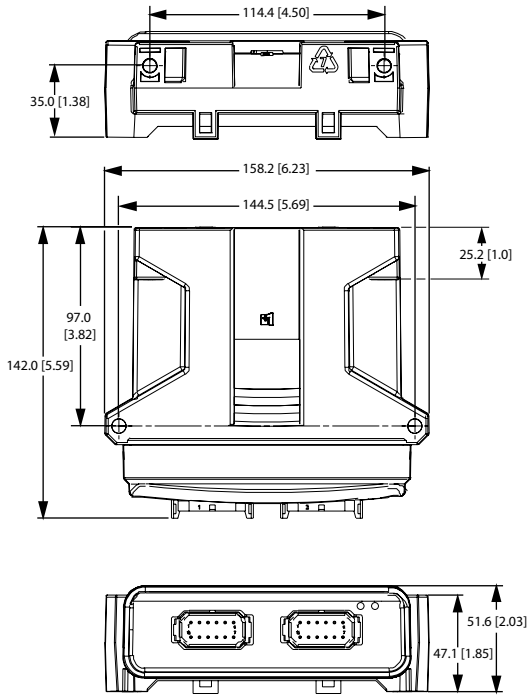
Digital: (3 A), configurable as source or sink;  
PWM: (30 to 4000 Hz), configurable as open or closed loop with current control;  
Analog voltage: open loop PWM at 4000 Hz.

Any PWMOUT/DOUT/PVGOUT can be used to provide reference power to one PVG valve

- (4) digital (DOUT) (3 A)
- (2) digital/PVG power supply (DOUT/PVG power supply) (3 A), user configurable; one DOUT/PVG power supply will power up to three PVG valves



## OX024-010 dimensions and pin assignments



mm [in]

2195A

### Caution

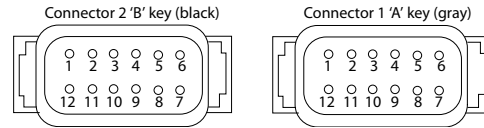
PCB damage may occur. All device power supply + pins must be connected to battery +.

This device is not field serviceable. Opening the device housing will void the warranty.

## Specifications

|  |                                |
|--|--------------------------------|
| Supply voltage                             | 9 to 36 V <sub>DC</sub>        |
| 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                  | 32 A                           |
| Maximum current, sinking                   | 8 A                            |

## Pin connector



| Pin    | Controller function | Pin    | Controller function   |
|--------|---------------------|--------|-----------------------|
| C2-P1  | PWMOUT/DOUT/PVGOUT  | C1-P1  | Power ground -        |
| C2-P2  | PWMOUT/DOUT/PVGOUT  | 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  | CAN shield            |
| C2-P6  | PWMOUT/DOUT/PVGOUT  | C1-P6  | DOUT                  |
| C2-P7  | PWMOUT/DOUT/PVGOUT  | C1-P7  | DOUT                  |
| C2-P8  | PWMOUT/DOUT/PVGOUT  | C1-P8  | DOUT                  |
| C2-P9  | PWMOUT/DOUT/PVGOUT  | C1-P9  | DOUT                  |
| C2-P10 | Power supply +      | C1-P10 | DOUT/PVG power supply |
| C2-P11 | Power supply +      | C1-P11 | DOUT/PVG power supply |
| C2-P12 | Power supply +      | C1-P12 | PWMOUT/DOUT/PVGOUT    |

Use care when wiring mating connector. Pinouts listed are for device pins. Each DOUT/PVG power supply can power up to three PVG sections concurrently. One OX024-010 output expansion module can drive a maximum of six PVG valves concurrently.

## Ordering information

### Product part number

|           |          |
|-----------|----------|
| OX024-010 | 10100999 |
|-----------|----------|

### Related products part numbers

|   |                         |                         |
|---|-------------------------|-------------------------|
| CG150 CAN/USB Gateway                         | 10104136                |                         |
| DEUTSCH mating connector bag assembly         | 10102023 (16 to 20 AWG) | 10100945 (20 to 24 AWG) |
| PLUS+1 <sup>®</sup> GUIDE single user license | 10101000                |                         |