

# JXM-IO-E30

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## I/O module



- 12 inputs, and 14 outputs with diagnostic capabilities
  - including high current paths and PWM with current control
- High switching capacity thanks to parallel output connection and high total continuous current
- CAN ID addressing via tri-state inputs allows for integration of up to 9 nodes in one network without software configuration, and testifies to the common part strategy
- Short-circuit-proof sensor supplies
- Rugged potted housing

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### Description

The JXM-IO-E30 expansion module is the universal building block for remote I/Os on mobile machines. Thanks to its fine-tuned I/O configuration, it can take on almost any remote task and this way significantly reduce wiring expenses. It comes with a reference output supporting standard sensors and pre-processing applications.

Communication with the JXM-IO-E30 takes place via SAE J1939. This allows for integration into conventional CAN networks used in mobile machinery.

Featuring a sturdy potted housing, the expansion module is designed to perform reliably even in the harshest operating environments.

## Technical specifications

|                                                                   |                                                                                                                                                                                   |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating voltage range                                           | DC 8 V ... 32 V, with separate ECU power supply                                                                                                                                   |
| Operating/storage temperature                                     | -40 ... +85 °C                                                                                                                                                                    |
| CAN ports                                                         | 1 SAE J1939                                                                                                                                                                       |
| Max. amount of inputs/outputs                                     | 26                                                                                                                                                                                |
| Inputs                                                            |                                                                                                                                                                                   |
| Analog                                                            | 8; 0 ... 5 V/0 ... 20 mA, can be configured individually; resolution: 12 bits, input impedance: 35 kΩ, load resistor: 120 Ω                                                       |
| Digital/frequency                                                 | 4; active-high; input impedance 5.6 kΩ; 0.1 Hz ... 10 kHz                                                                                                                         |
| Digital / CAN coding                                              | 2; Coding of the CAN ID, tri-state                                                                                                                                                |
| Outputs with diagnostic capabilities (short-circuit, cable break) |                                                                                                                                                                                   |
|                                                                   | 4; 3 A, 1.5 kHz max., dithering, current-controlled, diagnostic capabilities, short-circuit-proof                                                                                 |
| PWM, precision current measuring                                  | <p>Alternative usage:</p> <ul style="list-style-type: none"> <li>- Digital input, active-low, input impedance 10 kΩ</li> <li>- Digital output 3 A</li> <li>- PNP input</li> </ul> |
|                                                                   | 6; 7 A, 1.5 kHz max., dithering, diagnostic capabilities, short-circuit-proof                                                                                                     |
| PWM                                                               | <p>Alternative usage:</p> <ul style="list-style-type: none"> <li>- Digital input, active-low, input impedance 10 kΩ</li> <li>- Digital output 7 A</li> <li>- PNP input</li> </ul> |
|                                                                   | 4; 3 A high-side, diagnostic capabilities, short-circuit-proof, (with 50 % ON period)                                                                                             |
| Digital (50 % ON period)                                          | <p>Alternative usage:</p> <ul style="list-style-type: none"> <li>- Digital input, active-low, input impedance 10 kΩ</li> <li>- PNP input</li> </ul>                               |
| Sensor power supply                                               | 3 x VBAT for independent sensor supply                                                                                                                                            |
| Max. permitted total current                                      | 25 A                                                                                                                                                                              |
| Degree of protection                                              | IP65                                                                                                                                                                              |
| Vibration                                                         | ISO 16750-3                                                                                                                                                                       |
| Shock                                                             | ISO 16750-3                                                                                                                                                                       |
| Protection against polarity reversal                              | Yes                                                                                                                                                                               |
| Output diagnostics                                                | Short circuit, no-load                                                                                                                                                            |

## Pinout

## JXM-IO-E30

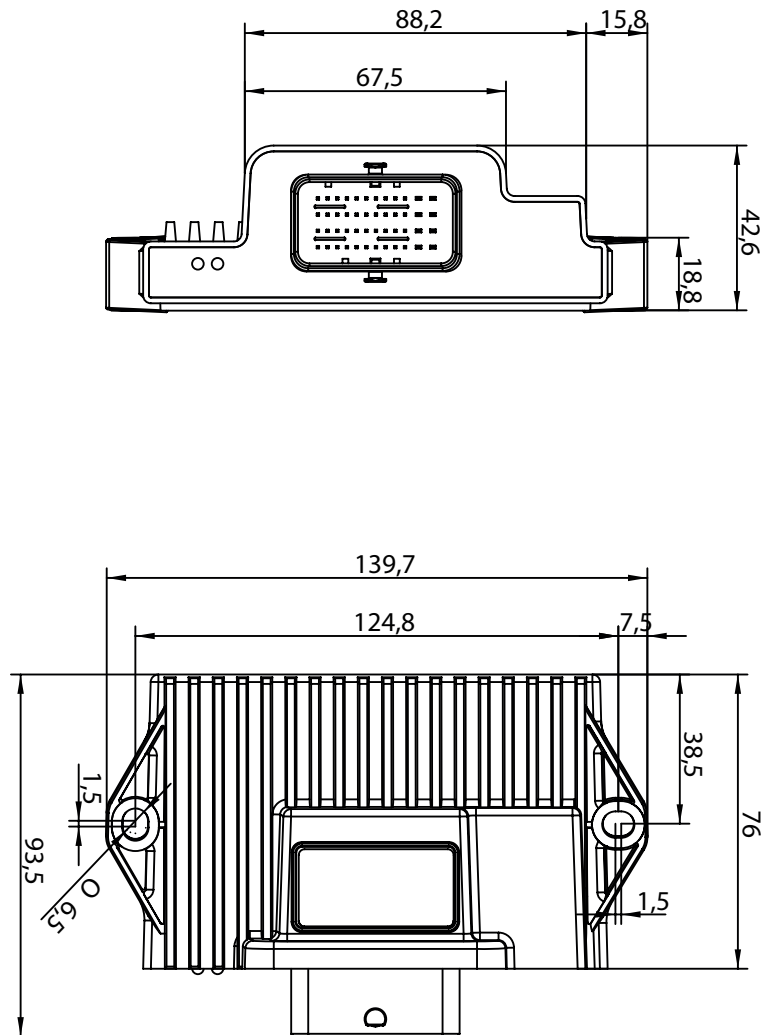
|                                      |    |
|--------------------------------------|----|
| CAN high signal                      | A1 |
| CAN low signal                       | B1 |
| PWMi_H3_4 – high-side PWM output     | C1 |
| PWMi_H3_3 – high-side PWM output     | D1 |
| PWMi_H3_2 – high-side PWM output     | E1 |
| PWMi_H3_1 – high-side PWM output     | F1 |
| DO_H3_4 – Digital high-side output   | G1 |
| DO_H3_3 – Digital high-side output   | H1 |
| DO_H3_2 – Digital high-side output   | J1 |
| DO_H3_1 – Digital high-side output   | K1 |
| VBAT PWR – power supply              | L1 |
| VBAT PWR – power supply              | M1 |
| CAN_TERM2 – CAN termination          | A2 |
| CAN_TERM1 – CAN termination          | B2 |
| DI_P_1 – Digital and frequency input | C2 |
| DI_P_2 – Digital and frequency input | D2 |
| DI_P_3 – Digital and frequency input | E2 |
| DI_P_4 – Digital and frequency input | F2 |
| GND_SEN – ground for sensor supply   | G2 |
| VEXT_SEN_3 – sensor supply           | H2 |
| VEXT_SEN_2 – sensor supply           | J2 |
| VEXT_SEN_1 – sensor supply           | K2 |
| VBAT PWR – power supply              | L2 |
| PWM_H7_1 – high-side PWM output      | M2 |
| n.c.                                 | A3 |
| AI_1 – analog input, current/voltage | B3 |
| AI_2 – analog input, current/voltage | C3 |
| AI_3 – analog input, current/voltage | D3 |
| AI_4 – analog input, current/voltage | E3 |
| AI_5 – analog input, current/voltage | F3 |
| AI_6 – analog input, current/voltage | G3 |
| AI_7 – analog input, current/voltage | H3 |
| AI_8 – analog input, current/voltage | J3 |
| VBAT ECU – logic circuit supply      | K3 |
| GND_PWR – ground for power outputs   | L3 |
| PWM_H7_2 – high-side PWM output      | M3 |
| PWM_H7_5 – high-side PWM output      | A4 |
| PWM_H7_5 – high-side PWM output      | B4 |
| PWM_H7_6 – high-side PWM output      | C4 |
| PWM_H7_6 – high-side PWM output      | D4 |
| PWM_H7_4 – high-side PWM output      | E4 |
| PWM_H7_4 – high-side PWM output      | F4 |
| PWM_H7_3 – high-side PWM output      | G4 |
| PWM_H7_3 – high-side PWM output      | H4 |
| CFG1_IN                              | J4 |
| CFG2_OUT                             | K4 |
| GND_PWR – ground for power outputs   | L4 |
| GND_PWR – ground for power outputs   | M4 |

## Pinout

## JXM-IO-E30-G20-K00-O01

|                                      |    |
|--------------------------------------|----|
| CAN high signal                      | A1 |
| CAN low signal                       | B1 |
| PWMi_H3_4 – high-side PWM output     | C1 |
| PWMi_H3_3 – high-side PWM output     | D1 |
| PWMi_H3_2 – high-side PWM output     | E1 |
| PWMi_H3_1 – high-side PWM output     | F1 |
| DO_H3_4 – Digital high-side output   | G1 |
| DO_H3_3 – Digital high-side output   | H1 |
| DO_H3_2 – Digital high-side output   | J1 |
| DO_H3_1 – Digital high-side output   | K1 |
| VBAT PWR – power supply              | L1 |
| VBAT PWR – power supply              | M1 |
| CAN_H_OUT                            | A2 |
| CAN_L_OUT                            | B2 |
| DI_P_1 – Digital and frequency input | C2 |
| DI_P_2 – Digital and frequency input | D2 |
| DI_P_3 – Digital and frequency input | E2 |
| DI_P_4 – Digital and frequency input | F2 |
| GND_SEN – ground for sensor supply   | G2 |
| VEXT_SEN_3 – sensor supply           | H2 |
| VEXT_SEN_2 – sensor supply           | J2 |
| VEXT_SEN_1 – sensor supply           | K2 |
| VBAT PWR – power supply              | L2 |
| PWM_H7_1 – high-side PWM output      | M2 |
| n.c.                                 | A3 |
| AI_1 – analog input, current/voltage | B3 |
| AI_2 – analog input, current/voltage | C3 |
| AI_3 – analog input, current/voltage | D3 |
| AI_4 – analog input, current/voltage | E3 |
| AI_5 – analog input, current/voltage | F3 |
| AI_6 – analog input, current/voltage | G3 |
| AI_7 – analog input, current/voltage | H3 |
| AI_8 – analog input, current/voltage | J3 |
| VBAT ECU – logic circuit supply      | K3 |
| GND_PWR – ground for power outputs   | L3 |
| PWM_H7_2 – high-side PWM output      | M3 |
| PWM_H7_5 – high-side PWM output      | A4 |
| PWM_H7_5 – high-side PWM output      | B4 |
| PWM_H7_6 – high-side PWM output      | C4 |
| PWM_H7_6 – high-side PWM output      | D4 |
| PWM_H7_4 – high-side PWM output      | E4 |
| PWM_H7_4 – high-side PWM output      | F4 |
| PWM_H7_3 – high-side PWM output      | G4 |
| PWM_H7_3 – high-side PWM output      | H4 |
| CFG1_IN                              | J4 |
| CFG2_OUT                             | K4 |
| GND_PWR – ground for power outputs   | L4 |
| GND_PWR – ground for power outputs   | M4 |

## Dimensional drawing



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