

# Output Module

Preliminary



The Vemcon output modules are compact and stackable modules for distributed control systems

### At a glance / USP

- Compact dimensions and robust construction especially for heavy-duty use
- Suitable for safety critical application (ISO13849: PL\_c and PL\_d)
- 4 analog inputs
- 2 quadrature inputs
- Robust, wide-range power supply
- Optional 6 axis IMU
- 8 current regulated outputs up to 5 A
  - 8 high side switches
  - 4 low side switches

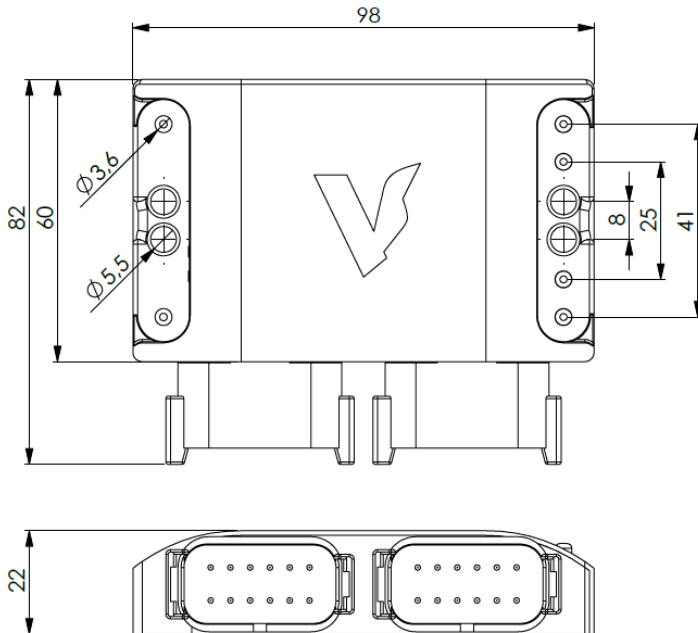
| Technical data – electrical ratings  |                             |
|--------------------------------------|-----------------------------|
| General data                         |                             |
| Supply voltage range                 | 9...35 V                    |
| Effective integrated data processor  | 32 bit 48 MHz ARM Cortex-M0 |
| Input voltage range                  | 0 - 6.6 V                   |
| CAN Bus                              | Up to 1 MBit/s              |
| Quadrature input                     | 100 kHz                     |
| Inverse polarity protection          | Yes                         |
| Short circuit protection             | Yes                         |
| Total current per module (sustained) | 20 A                        |
| Maximum current per stack            | 40 A                        |
| Self current consumption (typical)   | 70 mA at 12 V               |
| Input delay                          | 5 ms                        |
| Accuracy current regulation          | 2 %                         |
| Current measurement range            | 3.3 A                       |
| Current control update rate          | 5 kHz                       |

| High side switches                  |                  |
|-------------------------------------|------------------|
| Pullup                              | 22 kOhm          |
| Pulldown                            | 24 kOhm          |
| On state resistance                 | < 100 mOhm       |
| Overtemperature protection          | Yes              |
| Low side switches                   |                  |
| Pulldown                            | 24 kOhm          |
| On state resistance                 | < 100 mOhm       |
| Overtemperature protection          | Yes              |
| Input resistance                    |                  |
| Analog                              | 10 kOhm          |
| Quadrature                          | 10 kOhm          |
| Technical data – mechanical ratings |                  |
| Temperature range                   | -35 °C - + 80 °C |
| Dimensions                          | 96x82x23 mm      |
| Weight                              |                  |
| Hermetically sealed (IP67)          |                  |
| Connector                           | 2x DTM04-12      |

Design is subject to modifications. Errors and omissions may occur.

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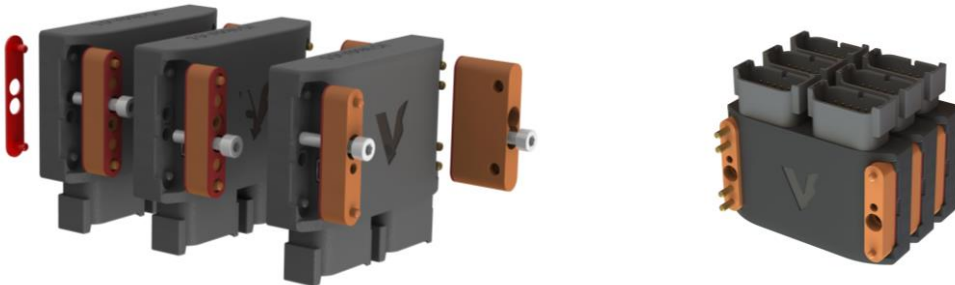
## CAN-Protocol – J1939

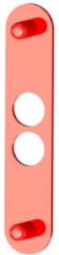
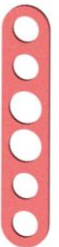



|                         |              |
|-------------------------|--------------|
| CAN-Baudrate            | 250<br>kBaud |
| Interval Between Cycles | 50ms         |
| Default source address: | 0xE2         |

See also: IMU J1939 Specification document.

**More/Customer-specific CAN protocols on request.**

Can be stacked and combined with more I/O modules.



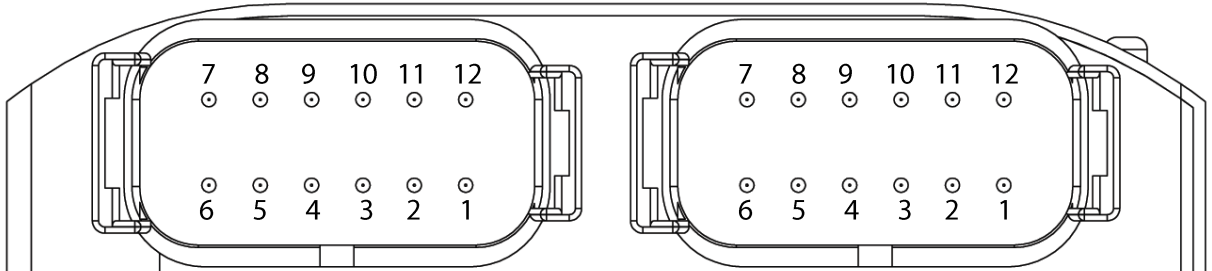
|   |   |   |   |   |
|---|---|---|---|---|
|  |  |  |  |  |
| Blind seal 80467  | Seal 80466  | Assembly - end element 80461  | Assembly – connection element 80464   | Connction element 80465   |

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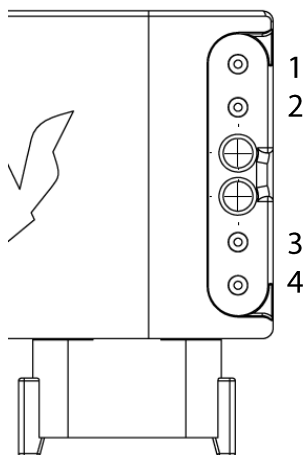
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## Key DTM04-12 PB



| PIN | Function                |
|-----|-------------------------|
| 1   | 5 V Out max. 200 mA     |
| 2   | Analog IN1.1 /Quad. 1 A |
| 3   | Out High 1.1            |
| 4   | Out High 1.2            |
| 5   | Out High 2.1            |
| 6   | Out High 2.2            |
| 7   | Out Low 2               |
| 8   | Out Low 2               |
| 9   | Out Low 1               |
| 10  | Out Low 1               |
| 11  | Analog IN 1.2 /Quad. 1B |
| 12  | GND                     |

| PIN | Function                |
|-----|-------------------------|
| 1   | 5V Out max. 200 mA      |
| 2   | Analog IN6.1 /Quad. 3 A |
| 3   | Out High 3.1            |
| 4   | Out High 3.2            |
| 5   | Out High 4.1            |
| 6   | Out High 4.2            |
| 7   | Out Low 4               |
| 8   | Out Low 4               |
| 9   | Out Low 3               |
| 10  | Out Low 3               |
| 11  | Analog IN 6.2 /Quad. 3B |
| 12  | GND                     |



| PIN | Function |
|-----|----------|
| 1   | + 9-36 V |
| 2   | GND      |
| 3   | CAN-Low  |
| 4   | CAN-High |

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