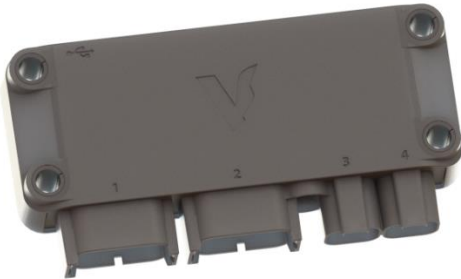


# CPX IOModul

The Vemcon CPX IO Modules are compact and stackable modules for decentralized control systems.



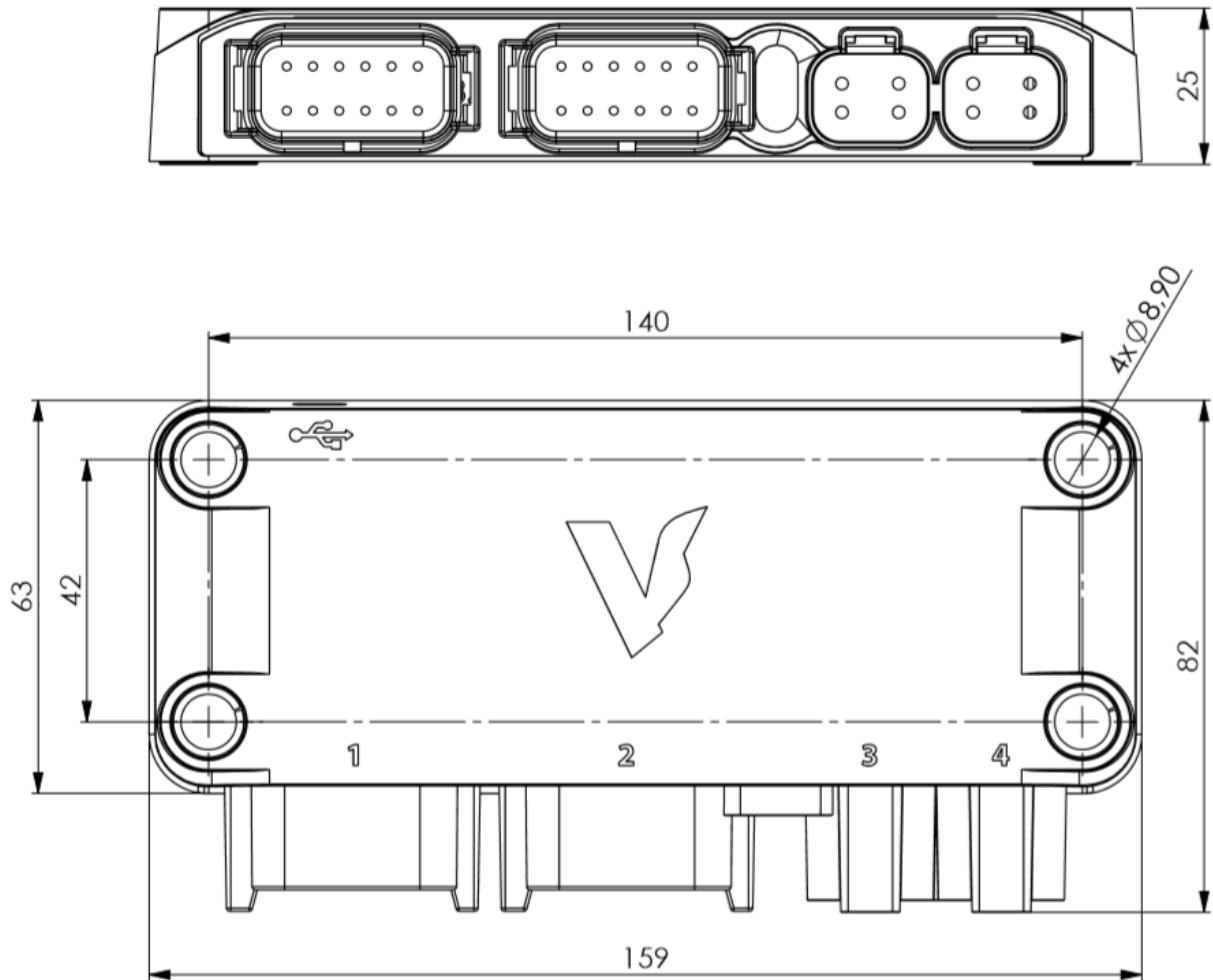
## At a glance

- Compact, robust and very durable
- Suitable for functional safe applications according to DIN EN ISO 13849 CAT. 3 PLc PLd
- Optional with 6-axis IMU
- Up to 20 inputs
- Up to 8 current controlled outputs (3A)
- Up to 4 0-5 V voltage outputs

<b>Technical data - electric</b>		<b>Low side switches</b>	
Supply voltage range	9...35 V	Pulldown	24 kOhm
Effective integrated data processor	2 x 32 bit 48 MHz ARM Cortex-M0	On state resistance	< 100 mOhm
Input voltage range	0 - 6.6 V, partial 35 V	Overtemperature protection	Yes
CAN Bus	Up to 1 MBit/s	<b>Input resistance</b>	
Quadrature encoder input	Up to 100 kHz	Analog	10 / 22 kOhm
Reverse polarity protection	Yes	Quadrature	10 kOhm
Short circuit protection	Yes	<b>Analog Out</b>	
Total current per module (sustained)	13 A	Voltage Range	0-5 V
Self current consumption (typical)	70 mA at 12 V	Output resistance	30 Ohm
Input delay	5 ms	<b>Technical data - mechanical</b>	
Accuracy current regulation	2 %		
Current measurement range	3.3 A		
Current control update rate	5 kHz	Protection class	IP67
<b>High side switches</b>		Temperature range	-35 °C - + 80 °C
Pullup	22 kOhm	Dimensions	159x82x25 mm
Pulldown	24 kOhm	Connections	2x DTM04-12 2x DT04-4
On state resistance	< 100 mOhm	Material	PC + ABS FR3010 PA-GF30
Overtemperature protection	Yes		

Version	In-/Outputs	Part number
Input Module	20 Inputs	100632
Output Module	8 Outputs <sup>1</sup> , 4 Inputs	100880
Analog Output Module	4 Outputs <sup>1</sup> , 4 Analog-Outputs <sup>2</sup> , 8 Inputs	100812

## Dimensions



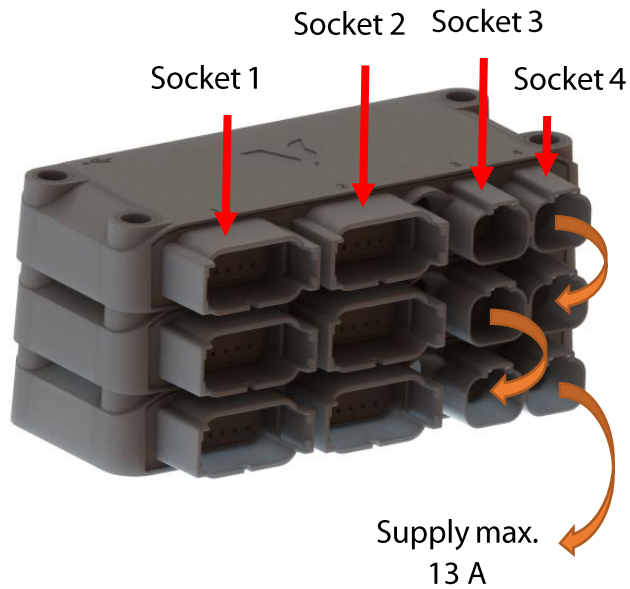
Screw connection: 4 x M8

Max. Tightening torque: 25 Nm

<sup>1</sup> Output: Current regulated up to 3 A

<sup>2</sup> Analog output: 0 - 5 V output

## Stacking and combination with other IO modules

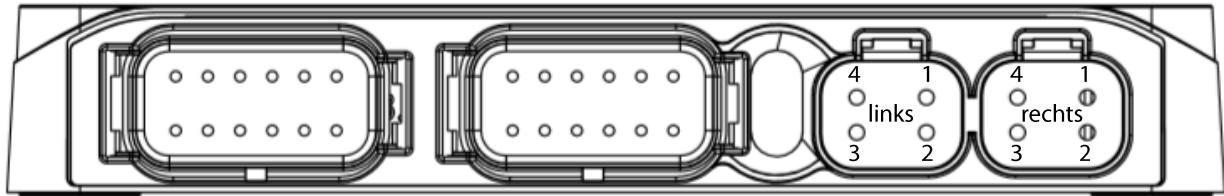


Connecting I/O modules via the DT04-4P bridge (Art.nr. 100248 – CPX IO Bridge Cable 0,25) (supply and CAN)

Advantages:

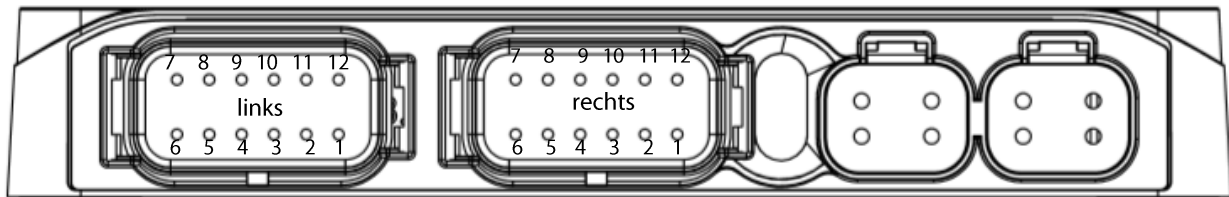
- Linking of IO modules to extend input and output capabilities
- Combination of different variants of the IO Modul possible

## PIN-assignment DT04-4P (socket 3+4)



PIN	Function	PIN	Function
1	Vbat	3	CAN Low
2	CAN High	4	GND

## PIN-assignment DTM04-12P (socket 1+2)



## Input module DTM04-12PA (socket 1+2 with coding=grey)

PIN left	Function	PIN right	Function
1	5 V Out max. 200 mA	1	5 V Out max. 200 mA
2	Analog IN6.1 /Quad. 3 A	2	Analog IN1.1 /Quad. 1 A
3	Analog IN 7.1	3	Analog IN 2.1
4	Analog IN 8.1	4	Analog IN 3.1
5	Analog IN 9.1	5	Analog IN 4.1
6	Analog IN 10.1	6	Analog IN 5.1
7	Analog IN 10.2	7	Analog IN 5.2
8	Analog IN 9.2	8	Analog IN 4.2
9	Analog IN 8.2/Quad. 4A	9	Analog IN 3.2/Quad. 2A
10	Analog IN 7.2/Quad. 4B	10	Analog IN 2.2/Quad. 2B
11	Analog IN 6.2 /Quad. 3B	11	Analog IN 1.2 /Quad. 1B
12	GND	12	GND

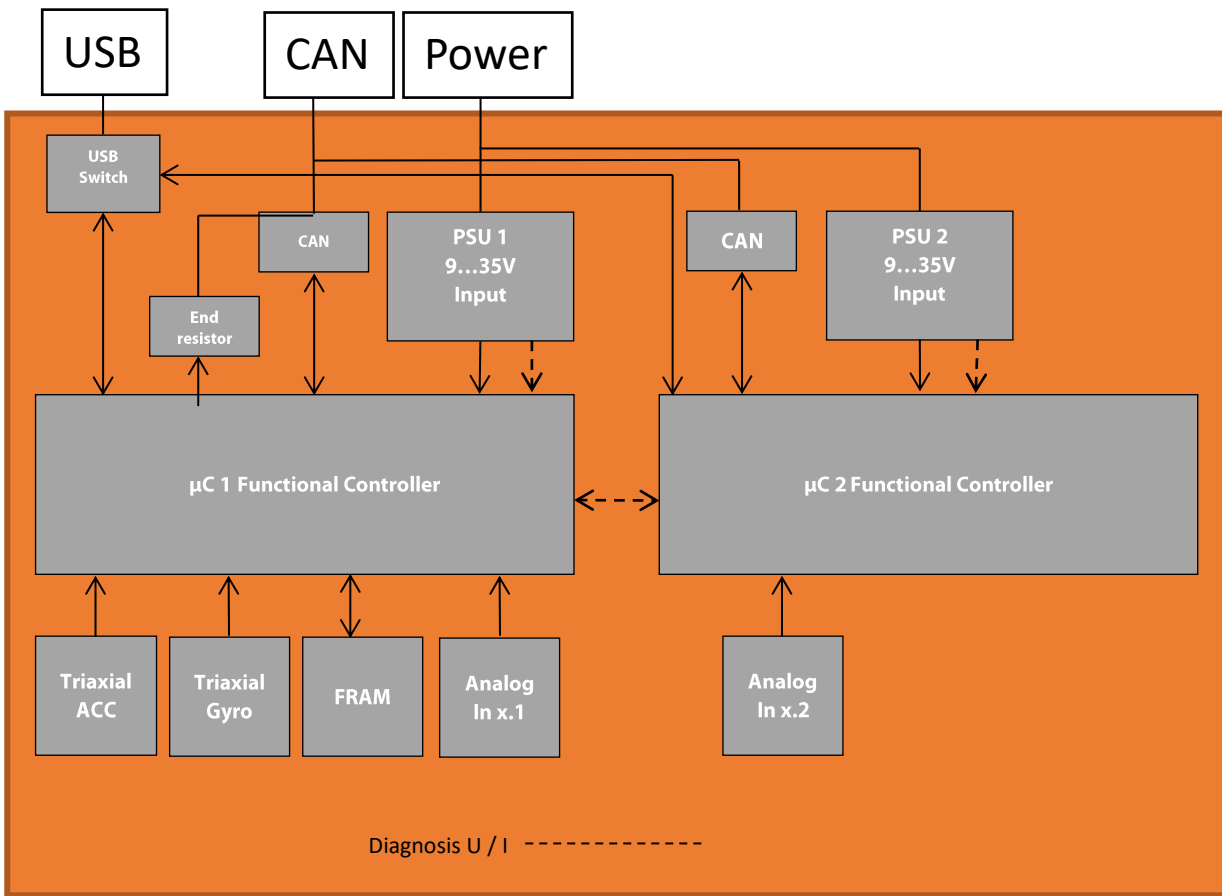
**PIN-assignment output module DTM04-12PB (Socket 1+2 with coding=black)**

<b>PIN left</b>	<b>Function</b>	<b>PIN right</b>	<b>Function</b>
1	5V Out max. 200 mA	1	5 V Out max. 200 mA
2	Analog IN6.1 /Quad. 3 A	2	Analog IN1.1 /Quad. 1 A
3	Out High 3.1	3	Out High 1.1
4	Out High 3.2	4	Out High 1.2
5	Out High 4.1	5	Out High 2.1
6	Out High 4.2	6	Out High 2.2
7	Out Low 4	7	Out Low 2
8	Out Low 4	8	Out Low 2
9	Out Low 3	9	Out Low 1
10	Out Low 3	10	Out Low 1
11	Analog IN 6.2 /Quad. 3B	11	Analog IN 1.2 /Quad. 1B
12	GND	12	GND

**PIN-assignment Analog Output Module DTM04-12PD  
(Socket 1+2 with coding=brown)**

<b>PIN left</b>	<b>Function</b>	<b>PIN right</b>	<b>Function</b>
1	5V Out max. 200 mA	1	5 V Out max. 200 mA
2	Analog IN6.1 /Quad. 3 A	2	Analog IN1.1 /Quad. 1 A
3	Analog Out 3.1	3	Analog Out 1.1
4	Analog Out 3.2	4	Analog Out 1.2
5	Out High 4.1	5	Out High 2.1
6	Out High 4.2	6	Out High 2.2
7	Out Low 4	7	Out Low 2
8	Out Low 4	8	Out Low 2
9	Analog IN 8.2/Quad. 4A	9	Analog IN 3.2/Quad. 2A
10	Analog IN 7.2/Quad. 4B	10	Analog IN 2.2/Quad. 2B
11	Analog IN 6.2 /Quad. 3B	11	Analog IN 1.2 /Quad. 1B
12	GND	12	GND

## Architecture input module



## Architecture output module

Like input module and additional:

