



# MSD Servo Drive

## Specification

**CAN**open

+ 2 analog outputs





This document does not replace the MSD Servo Drive Operation Manual. Please be sure to observe the information contained in the “For your safety”, “Intended use” and “Responsibility” sections of the Operation Manual (ID no.: CA65642-001). For information on installation, setup and commissioning, and details of the warranted technical characteristics of the MSD Servo Drive series, refer to the additional documentation (Operation Manual, User Manual, etc.).



**Note:** This specification relates solely to the function of the two analog out-puts OEA00 and OEA01.

The interconnection concept for the CANopen bus system is not detailed in this document. A detailed description of the interconnection of a MSD Servo Drive with the CANopen bus system is given in the “User Manual CANopen (ID no.: CA65647-001).

## MSD Servo Drive Specification

**CANopen** + 2AO

ID no.: CA79904-001

Date: 05/2018, Rev. 1.2

Applicable as from firmware version: V1.1

### Technical alterations reserved.

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Nevertheless we would like to point out that this document cannot always be updated parallel to the technical further development of our products.

Information and specifications may be changed at any time. For information on the latest version please refer to [drives-support@moog.com](mailto:drives-support@moog.com).

# 1. Analog outputs

This document specifies the functions and features of the analog outputs communication option (Opt 1). The two analog outputs enable a selectable actual value (see table 1.1) to be obtained from the controller. The analog value can be transmitted to a display unit, or be made available for further processing.

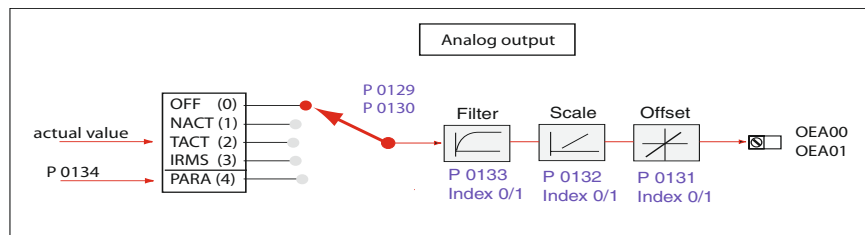


Figure 1.1 Analog outputs schematic

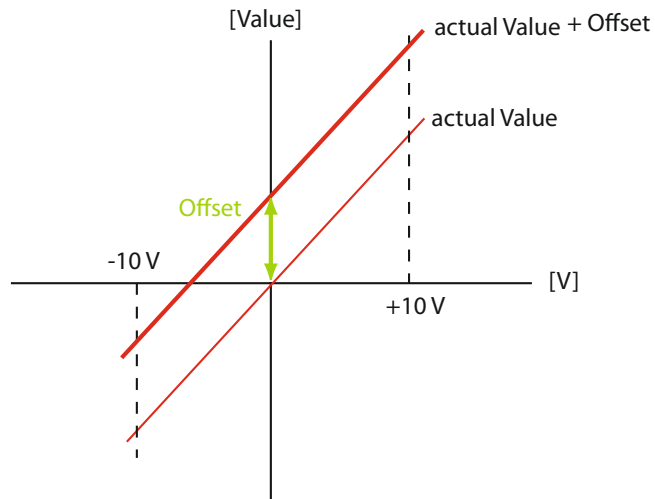


Figure 1.2 Offset function: Shift output by one variable

Settings:

Number	Setting	MDA 5 display	Function
P 0129 P 0130	(0) OFF	No function	No function
	(1) NACT	Actual speed	Output of actual speed
	(2) TACT	Actual torque/force	Output of torque/force
	(3) IRMS	RMS current	Output of mean current
	(4) PARA	PARA	PARA delivers a defined value (see P 0134) at the analog output
	(5) ACTPOS	Actual position	Output of actual position
	(6) VDC	DC link voltage	Output of DC link voltage
	(7) ACTPOS_MODULO	Actual modulo position	Output of modulo position
	(8) ACT_POWER	Actual power	Output of actual power
	(9) APP_POWER	Apparent power	Output of actual apparent power
P 0134	-10 V to +10 V	Value of analog outputs by parameter	Setting to test the analog output

Table 1.1 Selection of actual value variable for output

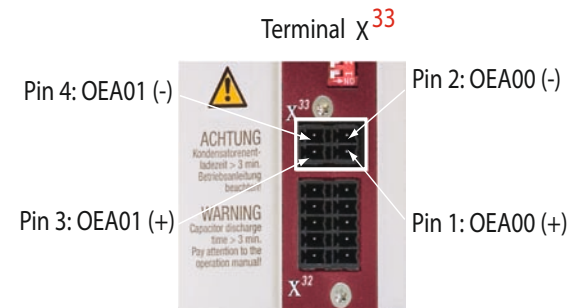
## Technical data:

Technical data	Analog outputs OAE00 / OAE01
Number of channels	2 channels
Resolution Accuracy	12 Bit maximum +/- 2 % referred to 10 V offset error: < +/- 0,1 V
Specified output voltage Max. voltage	+/- 10 V, differential $U_{max}$ : +/- 12,5 V
Max. output current Capacitive load	<ul style="list-style-type: none"> <li>5,0 mA at 10 V, short-circuit-proof <sup>(1) (2)</sup></li> <li>Capacitance: maximum 5 nF; Cable length max. approx. 25 m</li> </ul>
Update cycle	Corresponding to the clock frequency of the power stage (default 8 KHz)

Table 1.2 Technical data

- <sup>(1)</sup> An output is essentially short-circuit-proof. However, both outputs must not be shorted for longer than 60 seconds.
- <sup>(2)</sup> To avoid electromagnetic interference, the connected evaluation electronics should be high-resistance ( > 20 k $\Omega$ ) against PE and DGND (Digital Ground).

## 1.1 Connections



Pin 1	Analog output OEA00 (+)
Pin 2	Analog output OEA00 (-)
Pin 3	Analog output OEA01 (+)
Pin 4	Analog output OEA01 (-)

Figure 1.3 Terminal assignment

## 1.2 Operator control and parameter setting

The output variables are selected, offset, scaled and filtered by the following parameters. They are to be found in the subject area: "I/O configuration - analog outputs".

## "Offset"

P0131	Setting	Description
0 OEA00	maximum +10 V / minimum -10 V	Any variation of the voltage value can be adjusted by an offset.
1 OEA01	maximum +10 V / minimum -10 V	

Table 1.3 Setting of the voltage offset

## "Scale"

P0132	Setting	Description
0 OEA00	Value in V/dim	Scaling of the analog output. The output can be adjusted to the dimension currently being applied. <sup>(1)</sup>
1 OEA01	Value in V/dim	

Table 1.4 Scaling of the analog output

<sup>(1)</sup> Formula to determine the scaling value Parameter P 0132 Scale:

Formula:	Example:
$\text{Scale} = \frac{10 \text{ V}}{\text{Output value}_{\text{maximum}}}$	$\text{Scale} = \frac{10 \text{ V}}{3000 \text{ rpm}}$ $\text{Scale} = 0,0033 \frac{\text{V}}{\text{rpm}}$

## "Filter"

P01333	Setting	Description
0 OEA00	Value in ms	Setting of filter time for noise suppression.
1 OEA01	Value in ms	

Table 1.5 Filter of output value

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