ServoOne

Specification

CANopen

+ 2 analog outputs

! This document does not replace the ServoOne Operation Manual. Please be sure to observe the information contained in the "For your safety", "Intended use" and "Responsibility" sections of the Operation Manual (article no.: 1100.00B.1 or higher). For information on installation, setup and commissioning, and details of the warranted technical characteristics of the ServoOne series, refer to the additional documentation (Operation Manual, User Manual, etc.).

ServoOne Specification

CANopen + 2AO for ServoOne

ID no.: 1108.20B.0-00

Date: 03/2008

Applicable as from firmware version: V1.1

We reserve the right to make technical changes.

The content of our Operation Manual was compiled with the greatest care and attention, and based on the latest information available to us. We should nevertheless point out that this document cannot always be updated in line with ongoing technical developments in our products.

Information and specifications may be subject to change at any time. Please visit www.lt-i.com for details of the latest versions.

Note: This specification relates solely to the function of the two analog outputs 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 ServoOne with the CANopen bus system is given in the **"BCANopen User Manual (ID no.: 1100.08B.x-xx).**

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.
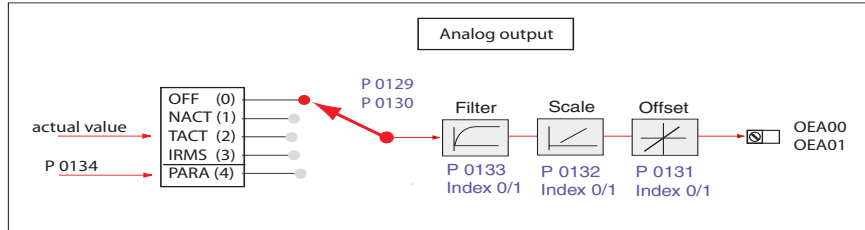
Figure 1.2   The offset function: Shift output by one variable
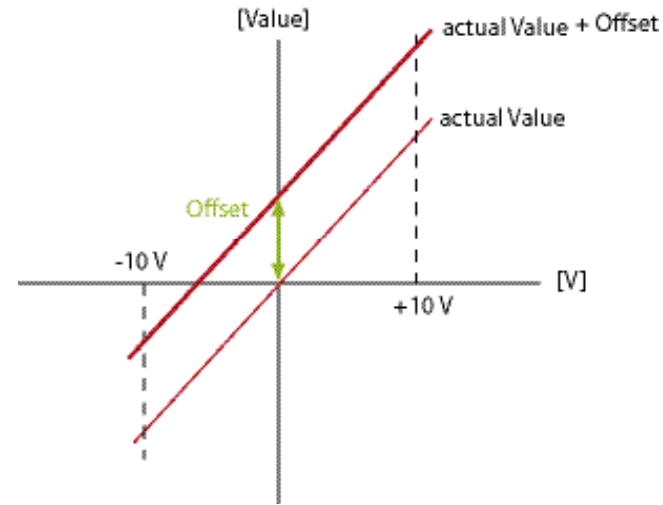
Figure 1.1   Analog outputs schematic

Settings:

Number	Setting	DM5 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
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 max. +/- 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	• 5,0 mA at 10 V, short-circuit-proof [1][2] • Capacitance: max. 5 nF: Cable length max. approx. 25 m
Update cycle	Corresponding to the clock frequency of the power stage (default 8 KHz)

Table 1.2   Technical data

[1] An output is essentially short-circuit-proof. However, both outputs must not be shorted for longer than 60 seconds.

[2] To avoid electromagnetic interference, the connected evaluation electronics should be high-resistance (> 20 kΩ) against PE and DGND (Digital Ground).

1.1   Connections

Terminal X[33]

Pin 4: OEA01 (-)   Pin 2: OEA00 (-)

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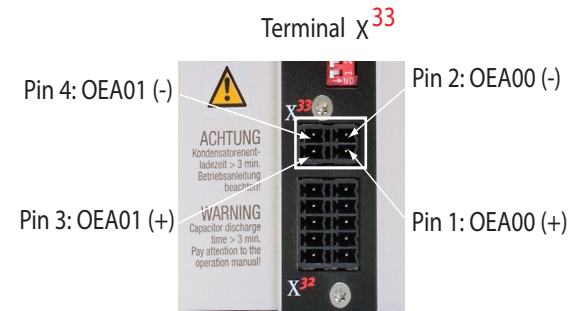
Pin 1	Analog output OEA00 (+)
Pin 2	Analog output OEA00 (-)
Pin 3	Analog output OEA01 (+)
Pin 4	Analog output OEA01 (-)

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	max +10 V / min -10 V	Any variation of the voltage value can be adjusted by an offset.
1 OEA01	max +10 V / min -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. [1]
1 OEA01	Value in V/dim	

Table 1.4   Scaling of the analog output

[1] Formula to determine the scaling value Parameter P 0132 Scale:

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

"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

[analog output]

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