6-channel measuring amplifier GSV-61T6 EC

Operating instructions

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Measuring amplifier GSV-61T6 EC/SubD44HD

6-channel measuring amplifier in a flange housing
1x SubD44HD for connecting single-axis, 3-axis, and 6-axis sensors
Configurable inputs: 0.1 to 4 mV/V, full bridge 350 ohms
Data acquisition with 24-bit ADC
Measurement frequency up to 1000 Hz
Interfaces: 1x USB, 1x EtherCAT-P
Independent calculation of the three forces and torques for 6-axis sensors

Description

The GSV-61EC is a compact 6-channel digital measurement amplifier with USB and EtherCAT interfaces. It can be powered either via USB-C or EtherCAT-P.

Interfaces

The USB interface protocol is proprietary and ME-specific, but published. It is described in a separate documentation (ba-gsvcom.pdf). The EtherCAT fieldbus protocol is standardized across all protocol layers, and at the application layer, it corresponds to the CANopen over EtherCAT protocol. It is also described in detail in a separate documentation (ba-gsv61ec).

Software

The Windows program GSVmultichannel with its graphical user interface can be used via the USB interface. A documented Windows function library (MEGSV8w32.dll) is available for self-programming users, as well as a library with wrapper VIs for this DLL for programming with LabView ©. The EtherCAT fieldbus can be used with suitable EtherCAT master programs or PLC controllers from Beckhoff.

Sensor connection

Six analog inputs are available. The input sensitivity is adjustable for all channels from 0.1 to 4 mV/V, and the strain gauge excitation voltage is 4 V.
To ensure the amplifier accurately displays and records physical values, it must be configured based on the connected sensor.

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Technical data

Analog input

Accuracy class	0,1%
Number of analog inputs	6
Strain gauge bridge input	Full bridge
Strain gauge bridge supply	4 Volt
max. Current per channel at 4 V supply	25 mA (min. strain gauge Resistance 120 Ohm)
Input sensitivity	0,1 mV/V to 4 mV/V

Supply

Supply voltage EtherCAT-P	20 to 28 V DC
Power consumption EtherCAT-P	50 to 80 mA
Supply voltage USB-C	4,5 to 5,5 V DC
Power consumption USB-C	200 to 450 mA

Environmental data

Operating temperature	0 °C ... +60 °C
Protection class	IP20
Dimensions	104 x 84 x 35 mm x mm x mm

Interfaces

USB	2.0 Full Speed
USB connection	USB-C socket
EtherCAT	CoE 404, 100 MBit/s
EtherCAT connection	M8 socket, pin, 4-pole, P-coded

Switches and displays

green LED	ON = Power supply USB on
green LED	EtherCAT Run
red LED	EtherCAT Error

Pin assignment

Input SUB-D44 HD

Up to 6 channels can be connected to the 44-pin SubD socket.

Channels 1,2,3,4,5,6, Sub-D HD 44			
Pin	Signal	Description	Channel
Shield	PE	Housing	-
1	UF+	Positive bridge supply =pos. sensor cable	1
2	US+	Positive bridge supply	1
3	UD+	Positive differential input	1
4	UD-	Negative differential input	1
5	US-	Negative bridge supply	1
6	UF-	Negative bridge supply =neg. sensor cable	1
7		(not connected)	
8	UF+	Positive bridge supply =pos. sensor cable	2
9	US+	Positive bridge supply	2
10	UD+	Positive differential input	2
11	UD-	Negative differential input	2
12	US-	Negative bridge supply	2
13	UF-	Negative bridge supply =neg. sensor cable	2
14		(not connected)	
15		(not connected)	
16	UF+	Positive bridge supply =pos. sensor cable	3
17	US+	Positive bridge supply	3
18	UD+	Positive differential input	3
19	UD-	Negative differential input	3
20	US-	Negative bridge supply	3
21	UF-	Negative bridge supply =neg. sensor cable	3
22		(not connected)	
23	UF+	Positive bridge supply =pos. sensor cable	4
24	US+	Positive bridge supply	4

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Channels 1,2,3,4,5,6, Sub-D HD 44			
Pin	Signal	Description	Channel
25	UD+	Positive differential input	4
26	UD-	Negative differential input	4
27	US-	Negative bridge supply	4
28	UF-	Negative bridge supply =neg. sensor cable	4
29		(not connected)	
30		(not connected)	
31	UF+	Positive bridge supply =pos. sensor cable	5
32	US+	Positive bridge supply	5
33	UD+	Positive differential input	5
34	UD-	Negative differential input	5
35	US-	Negative bridge supply	5
36	UF-	Negative bridge supply =neg. sensor cable	5
37		(not connected)	
38	UF+	Positive bridge supply =pos. sensor cable	6
39	US+	Positive bridge supply	6
40	UD+	Positive differential input	6
41	UD-	Negative differential input	6
42	US-	Negative bridge supply	6
43	UF-	Negative bridge supply =neg. sensor cable	6
44		(not connected)	

Connection EtherCAT-P

The sensor is powered through the M8 EtherCAT connector conforming to the EtherCAT P technology.

Signal	Function	Pin-No. M8 connector	Pin-No. RJ45
TD+	Transmit data +, GNDs	1	1
TD-	Transmit data - , Us:+24VDC	4	2
RD+	Receive data +	2	3
RD-	Receive data -	3	6

The sensor requires an EtherCAT P power source device, that superposes the supplying DC and splits the Ethernet signals for the EtherCAT master.

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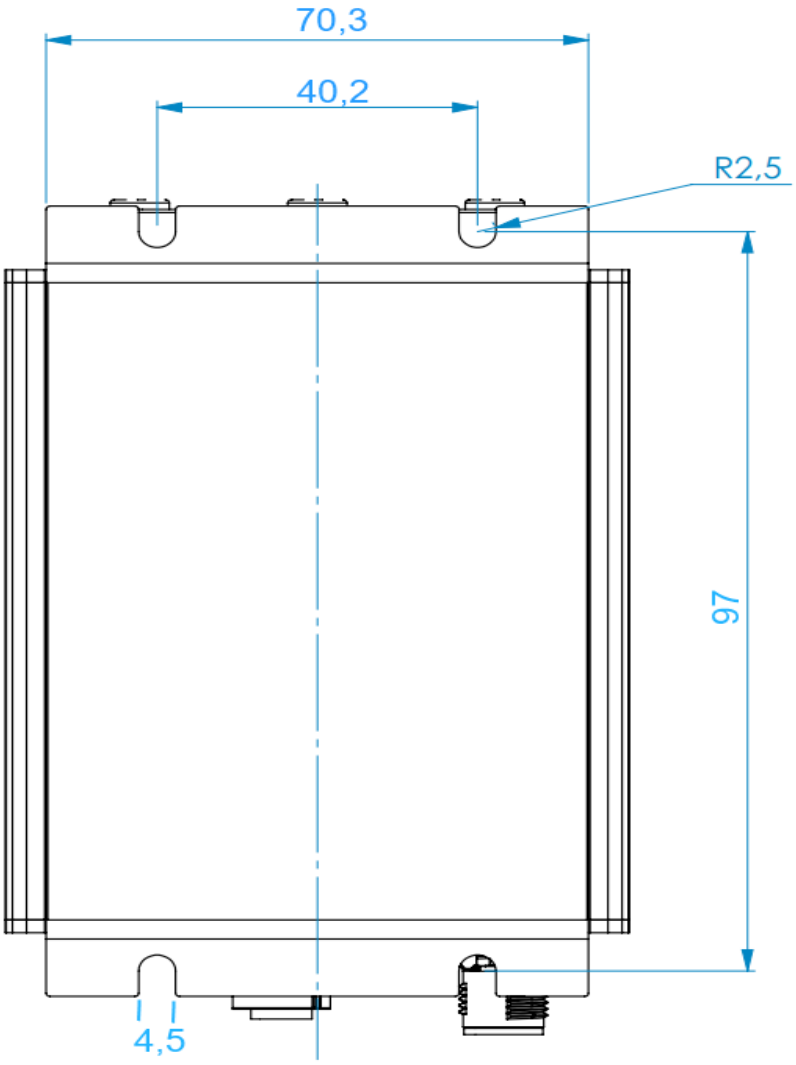
Dimensions



Changelog

Version	Date	Changes
ba-gsv61_ver01_en.odt	10.09.25	First version (SW)

Änderungen vorbehalten.
Alle Angaben beschreiben unsere Produkte in allgemeiner Form.
Sie stellen keine Eigenschaftszusicherung im Sinne des §459 Abs. 2, BGB, dar und begründen keine Haftung.

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