

Incremental Revolution transmitter

# ADG60D

500 Impulse



**Digitronic Automationsanlagen GmbH**

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## Notification

This handbook corresponds with the unit version of März 99. The company Digitronic Automationsanlagen GmbH reserves the right to implement changes that result in an improvement of the quality and the functions of the device at any time and without any announcements.

This instructions manual was created with a maximum of care, but mistakes are not out of the question. We are thankful for any comments, regarding possible mistakes in the instruction manual.

## UP-date

You can also obtain this instruction manual on the Internet at <http://www.digitronic.com> in the latest version as PDF file.

## Qualified personal only

Commissioning and operation of the device may only be carried out by qualified personal. Qualified personal are persons, authorized with commissioning, grounding and labeling devices, systems and electrical circuits according to the applicable standards of security

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**Note:** The products of Digitronic are so well constructed that they will not be effected by the millenium.

**Note:** This device fulfills the following norms according to electromagneticalcompatibility: EN 55011, EN 55022, EN 55024 Teil 2, EN 50082 Teil 2, ENV 50140, VDE 0843 Teil 2, VDE 0843 Teil 4, VDE 0871, VDE 0875 Teil 3 ("N"), VDE 0875 Teil 11, VDE 0877 Teil 2, IEC 801 Teil 3, IEC 801 Teil 2, IEC 801 Teil 4, IEC 801 Teil 5.



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## 1. Incremental Revolution transmitter ADG60D

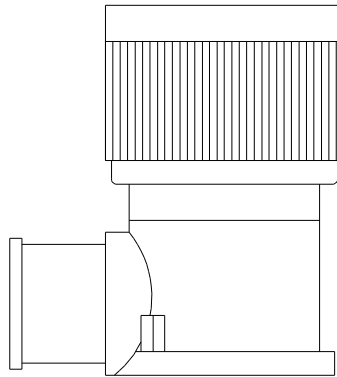
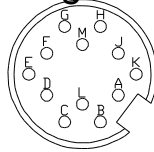
The incremental revolution transmitter ADG60D enables measuring rotation movements with maximum 2000 Impulses per turn and evaluate these impulses via the measuring system of the CamCon DC 50 camswitch.

### 1.1. The ADG60D incremental revolution transmitter's terminal allocation

## Connection-plug Type ADG60D/ST

Binoer Serie 682

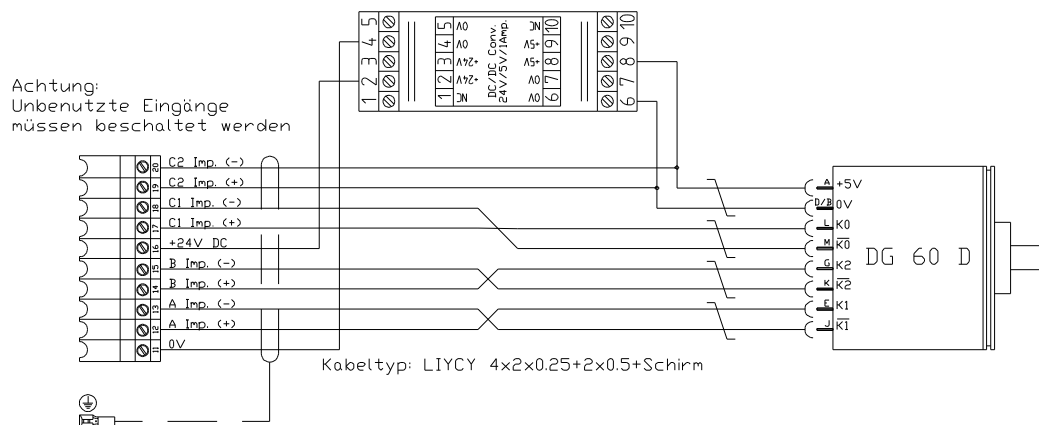
soldering side



connection-plug  
des CamCon

transformator  
Type: NT/DC24/DC5

angle encoder  
Type: ADG60D



## 2. Installation and bringing into service

Rotation encoders are precision measuring units and therefore have to be handled as such. Please regard the following installation instructions before bringing the rotation encoder into service.

- When installing the rotation encoder, pay attention to the slight angular and radial misalignment. (See technical data of the to be used couplings). Avoid blows towards the shaft and regard the values concerning the shaft loads, which are listed on the data sheet.
- Use flexible couplings ! The kind of couplings is determined by the speed, the torque, and the to be by-passed angular and radial misalignment.
- Connect the rotation encoder to the corresponding terminal assignment. See to it, that the operating voltage recommended on the type plaque is installed.
- The plug should not be connected or disconnected when under voltage.
- If the rotation encoder, even if correctly installed, does not function properly, intermittent faults can be the cause of that. Such faults are due to power supply switchings, pulse mode controllers or motors etc. Such faults can be reduced through proper protection facilities and through using cables with a better shielding or an appropriate filtering network.
- Should the occasion arise, protect the rotation encoder against environmental damage. (solid particle impact, water spray ect.).  
If any interventions are carried out by unauthorized personnel the factory guarantee becomes invalidated !

Please review the wiring of the unit before switching it on and then engage the supply voltage of the CamCon .

### 2.1. Technical data of the AAG626 multiturn rotation encoder

Voltage supply.....	24VDC +-20%
Power consumption .....	150mA
Resolution .....	4096 impulse / turn x 4096 rotations (max. 16777216 impulse).
Measuringuncertainty.....	0.66°
Data output.....	synchronos serial (SSI), graycode
Cycle time .....	0.5 ms
Initialisation timeP after Power UP.....	1050 ms
Monofloptime .....	15..25 µs
Cablelength between rotation encoder and CamCon.....	300 meter max.

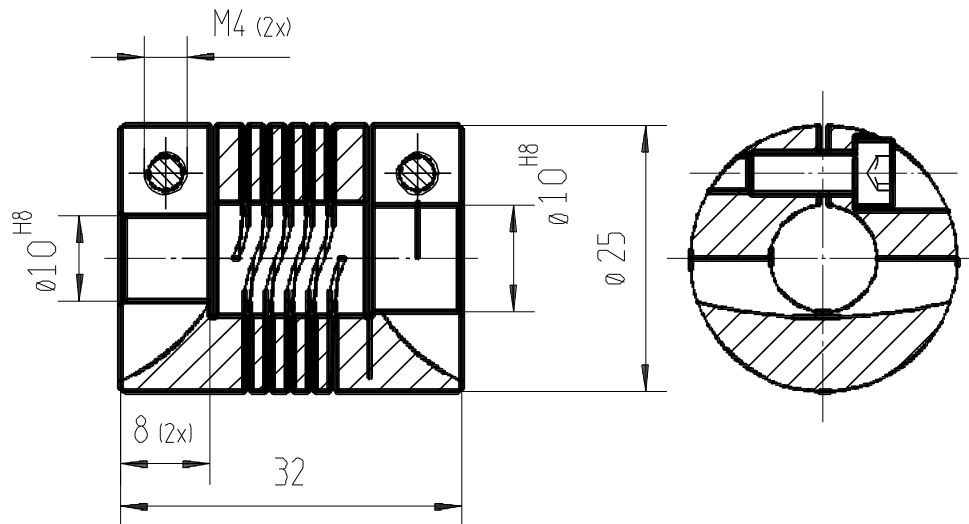
#### Mechanical characteristics

Valid torque.....	maximum 6000 min <sup>-1</sup>
Angular acceleration of the rotor.....	5 x 10 <sup>5</sup> rad s <sup>-2</sup>
Inertia of the rotor.....	35 gcm <sup>2</sup>
Start-up torque .....	2.5 Ncm
Shaft load (at the shaft-end) .....	axial 50 N / radial 300 N
Resistance against vibrations .....	20/10 - 20000 g/Hz
Resistance against shocks .....	100/6 g/ms
Protection.....	Case IP 65
Operating temperature.....	-20..+85°
Weight.....	about 500 g.

### 3. The shaft couplings

Encoders are precision measuring units and therefore have to be kept apart from the vibrations and tremors, as well as the from the misalignment of the machine. To part the encoder from these influences use the flexible shaft couplings.

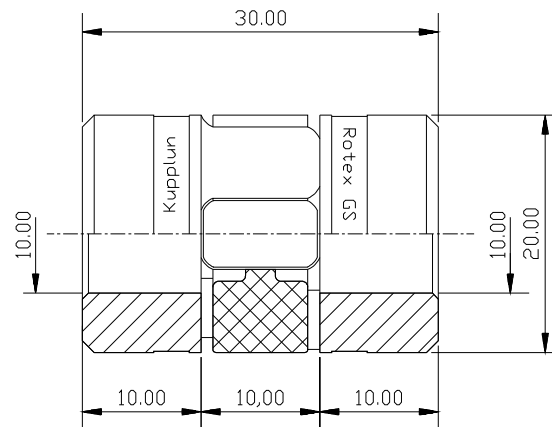
#### 3.1. Wendel - shaft couplings type: WK/A/10-10



##### 3.1.1. Technical data

Outer diameter .....	25 mm
Length .....	32 mm
Clamp-screw .....	M4
Nominal torsial moment .....	120 Ncm
Acceptable radial shift.....	+/- 0.35 mm
Acceptable axial shift .....	+/- 0.5 mm
Acceptable angle-shift.....	+/- 4 degree
Torsions strength .....	16 Nm/rad
Acceptable rotation speed .....	6000 U/min
Weight.....	ca. 34g

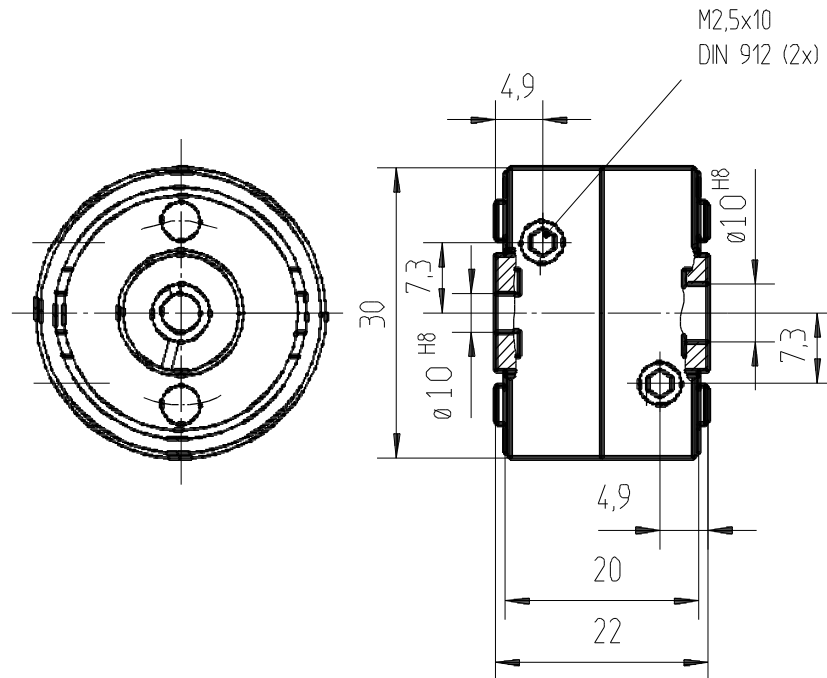
### 3.2. The shaft couplings WK/K/10-10



#### 3.2.1. Technical data

Outer diameter .....	20mm
Length .....	29,5mm
Clamp screw .....	M 2,5
Standart torque .....	1,94 Nm
Valid radial shift.....	+/- 0,13 mm
Valid axial shift .....	+/- 0,8 mm
Valid angular misalignment.....	+/- 1 Grad
Torsion stiffness.....	31,5 Nm/rad
Valid torque .....	28000 min <sup>-1</sup>
Weight.....	20 g

**3.3. Isolting springdisks - shaft coupling type: WK/D/10-10**



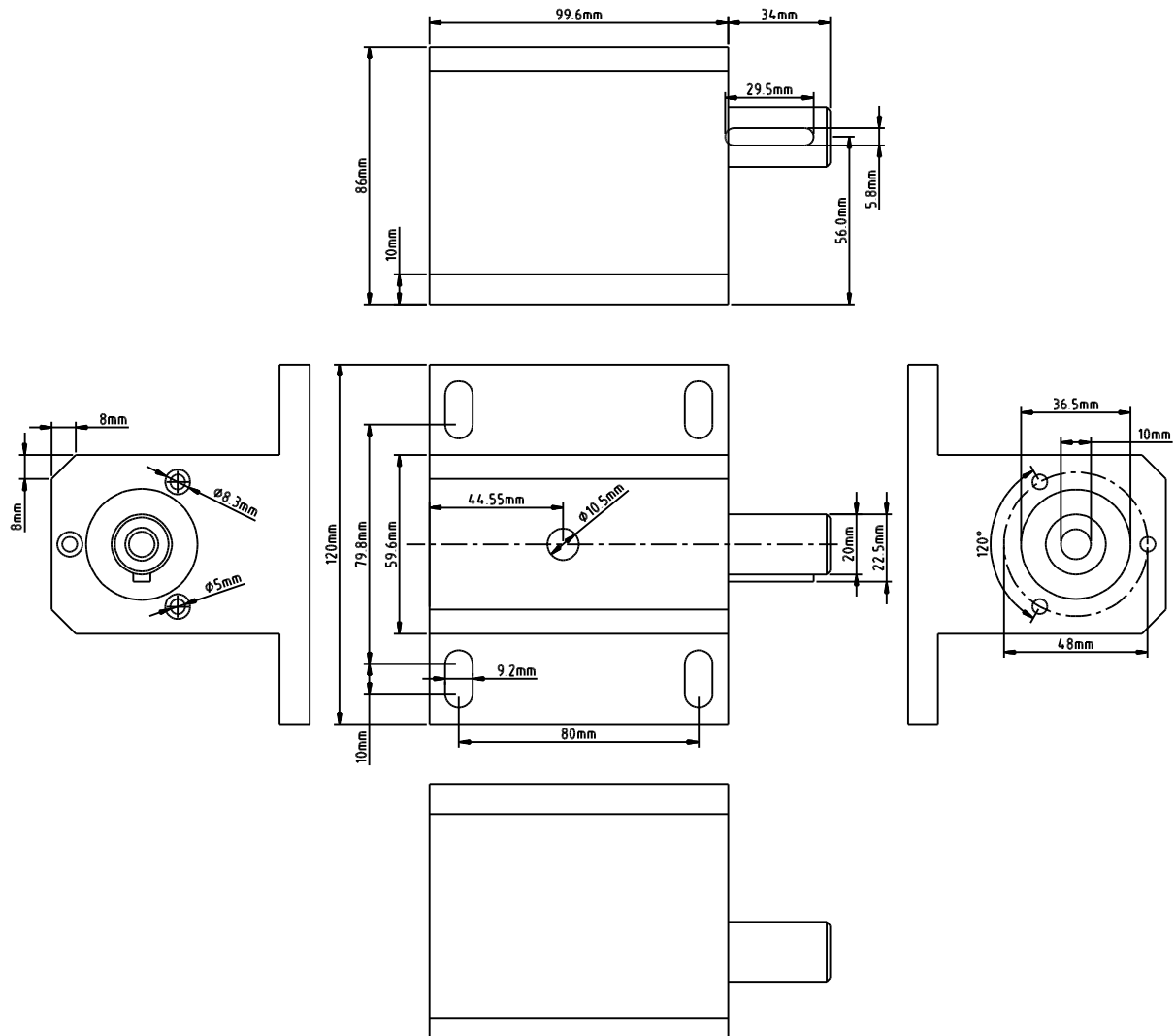
**3.3.1. Technical data**

Outer diameter .....	30 mm
Length .....	22 mm
Clamp-screw .....	M2.5
Nominal torsial moment .....	40 Ncm
Acceptable radial shift .....	+/- 0.4 mm
Acceptable axial shift .....	+/- 0.4 mm
Acceptable angle-shift .....	+/- 2.5 Grad
Torsions strength .....	90 Nm/rad
Acceptable rotation speed .....	12000 U/min
Weight .....	ca. 23 g





#### 4.2. Bearing trestle: LAG60



##### 4.2.1. Technical data

Suitable for .....	AAG60007, AAG612, AAG626, AAG66107, AAG615 and ADG60 i.e. all turn-angle-encoder with 48 mm partial circle, 36 mm flange and 10 mm shaft.
Acceptable rotation speed .....	3000 U/min.
Shaft drive .....	20mm with closed shaft notch.
Shaft drive .....	10mm to the turn-angle-encoder with shaft coupling WK/K/10-10.
Bearing .....	2 pieces, maintenance free groove - ball bearings.
Clamping of the tiurn angle encoder .....	by 3 DIN 912 M4x40mm screws.
Weight .....	approximately. 1.5kg.