Melectric Wireless Torque Flange

Datasheet

Release: August 2024

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Melectric Systems GmbH
Endlhauser Straße 7
82064 Straßlach

Amtsgericht München HRB 258090
St. -Nr.: 143/161/61902
UST. Id. -Nr.: DE332271021
Sitz der Gesellschaft: Straßlach

1. Instruction of use

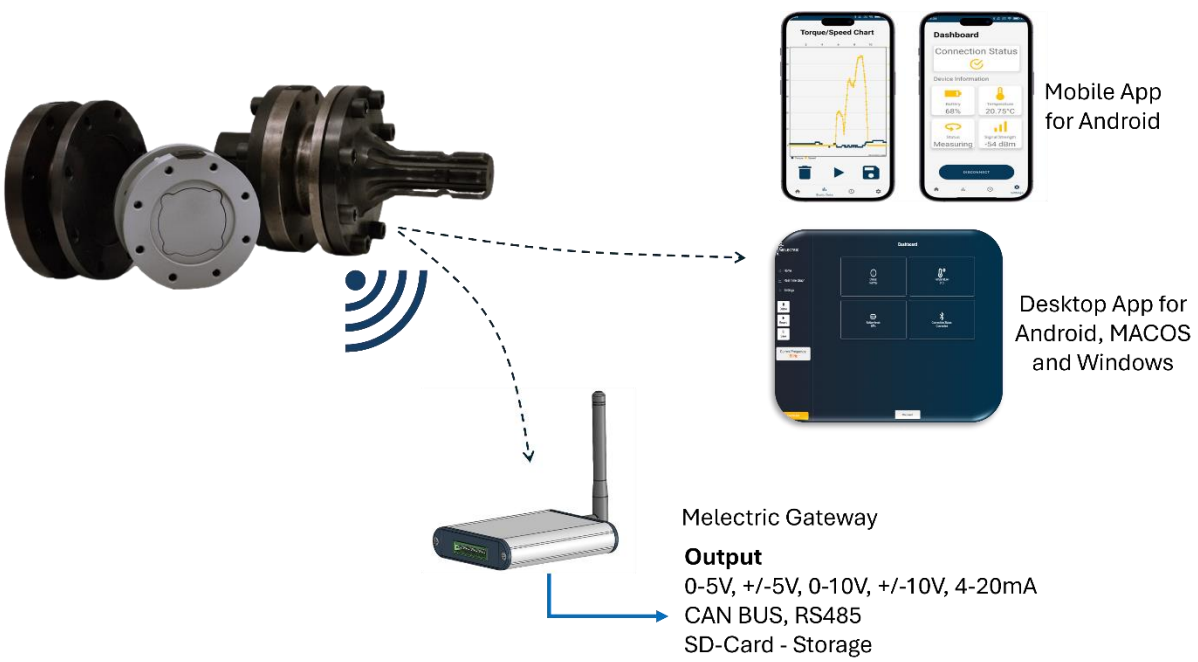
Dear customers,

Thank you for choosing our sensor products. You have chosen a high quality and extremely precise torque measuring system. These instructions for use contain everything for you and the assembly, operating and maintenance personnel necessary information so that you can use your measuring system under the intended conditions of use.

It contains important information that ensures a functional and safe installation and operation. For these reasons, the operating instructions must always be at hand at the place of use of the torque measuring system are available.

We reserve the right to make changes in the course of product improvements. We're trying to do that maintain compatibility with previous versions. All information without guarantee subject to technical changes.

2. System Topology for connection



3. Customer Service Address

Melectric Systems GmbH
Endlhauser Straße 7
82064 Straßlach
Tel: +49 8170 9969055
Email: info@melectric-systems.de
Web: www.melectric-systems.de

4. Warranty

The warranty is 12 months from the date of delivery from the factory when used as intended, under
Compliance with the maintenance and calibration regulations, as well as the general terms and conditions.

5. Scope of delivery

The torque sensor system consists of a calibrated sensor integrated in the housing as well as an integrated processing unit. Furthermore, a charging cable will be provided, please only use the provided equipment to recharge the sensor unit!
App for Android and Desktop will be provided free of charge.

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6. Safety

Please note the enclosed sheet on the warning notices

Care must be taken to ensure that the flat surfaces of the flanges are clean when installing the sensor issue.

- The screws must be tightened crosswise in several stages to the nominal torque want.
- These are cylinder screws of quality 12.9 in given size.
- The final tightening torque must be up to DIN 912.
- When fastening, no force may be exerted on the housing in the axial direction.
- The sensor is not designed as a support bearing.

- Product contains Lithium Ion Batteries, please store the product at appropriate place.

7. Intended use

The sensor is exclusively designed for measuring torque and/or speed.
The respective load range can be found in the data sheet and must not be exceeded Intended use also includes compliance with the manufacturer's specifications Commissioning, assembly, operating, environmental and maintenance conditions. Any use beyond this is deemed to be improper. for any resulting damage the manufacturer is not liable for such use.

8. Recalibration and duration of use

A factory recalibration should be carried out annually. See the relevant label on the sensor. This recalibration can be carried out quickly and easily by Melectric Systems GmbH. Contact us.

9. Structural changes

Unauthorized conversions or changes to the torque measuring system are for safety reasons forbidden and lead to the immediate expiration of warranty claims

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10. Assembly and Disassembly

Care must be taken to ensure that the flat surfaces of the flanges are clean when installing the sensor issue. The screws must be tightened crosswise in several stages to the nominal torque will. These are cylinder screws of quality 12.9 in corresponding size. The final tightening torque according DIN 912 has to be used. When fastening, no force may be exerted on the housing in the axial direction. The sensor is not designed as a support bearing.

11. Disposal:

For disposal, the device must be returned to Melectric Systems GmbH, Endlhauser Straße 7, 82064 Straßlach.

12. Key Sensor Parameter

- Torque Range up to +/- 8.000 Nm
- Rotational speed measurement up to 2000 U/min
- Accuracy < 0,2% FS
- Protection grade IP67

*Note: For all Machines with drive power up to 250kW the Size 25K is recommended the Size 50K is recommended for drive power up to 500 kW. In case, please contact us to chose the right measurement range.

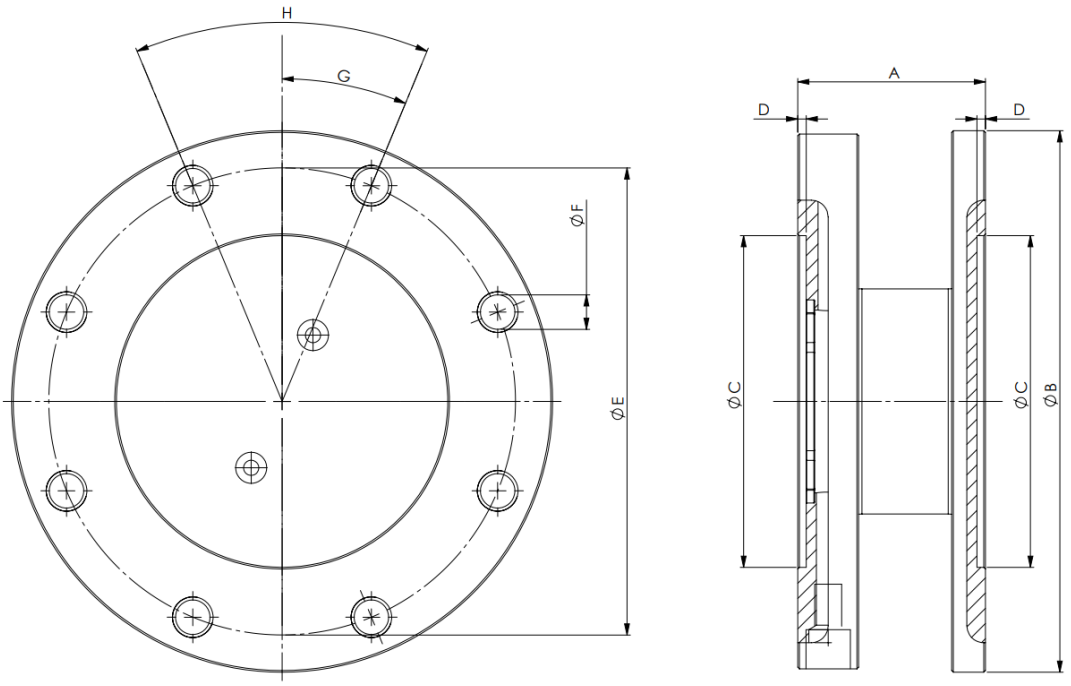
13. Typical Values

Description	Unit	Value
Linearity including Hysteresis	% FS	0,2
Repeatability	% FS	0,05
Cutoff Frequency	Hz	10/50/100/200/500
Drift on Zero Singal by Temperature	%/10K	0,1
Drift on Output Signal by Temperature	%/10K	0,1
Storage Temperature	°C	-30 to 60
Maximum Temperature range	°C	-30 to 60
Maximum rotational speed	U/min	The maximum rotational speed that can be detected is 2000 U/min. higher rotational speed does not harm the system.
Power consumption	mA	3-15 mA
Maximum charging voltage	V	5V

Type	Value	25K	50K	80K
Nominal Torque	Nm	2500	4500	7500
Weight	kg	2,01	3,75	4,5
Moment of Inertia	kg * mm2	403	1291	
Load limits	%Mnom	110%	110%	110%
Recommended maximum axial load	N	< 2000	< 2000	<3000
Limit Torque for mechanic	Nm	3500	6500	Information Upon request
Permissible limit shear force to break	N	21 kN	38 kN	Information Upon request
Permissible limit axial force to break	N	50 kN	90 kN	Information Upon request
Permissible vibration stress under dynamic load	% Mnom	70 (peak – peak)	70 (peak – peak)	70 (peak – peak)

Any irregular stress (bending moment, transverse, or longitudinal force, exceeding the nominal torque) up to the specified Limit allowed only as long as none of the other forces can occur. Otherwise, the limit values have to be reduced. If 30% of the bending moment limit and the transverse force limit occur, only 40% of the longitudinal limit force are permissible, whereby the Nominal torque must not be exceeded.

14. Dimension



Value	Type 25K	Type 50K	Type 80K
A	55,5 mm	55,5 mm	58,5
B	120 mm	160 mm	160
C	75 H7	98 H7	98 H7
D	2,5 mm	2,5 mm	2,5
E	101,5 mm	138 mm	138
F	8 x M8 12.9	8 x M12 12.9	10x M14 12.9
G	22,5°	22,5°	18°
H	45°	45°	36°

For customized solutions or dimensions please contact us at:

info@melectric-systems.de

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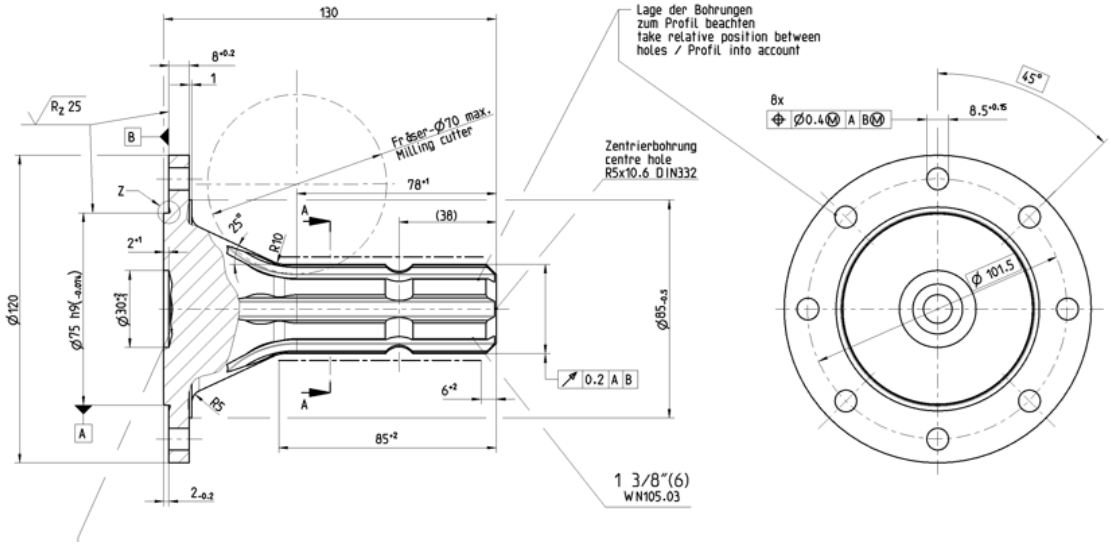
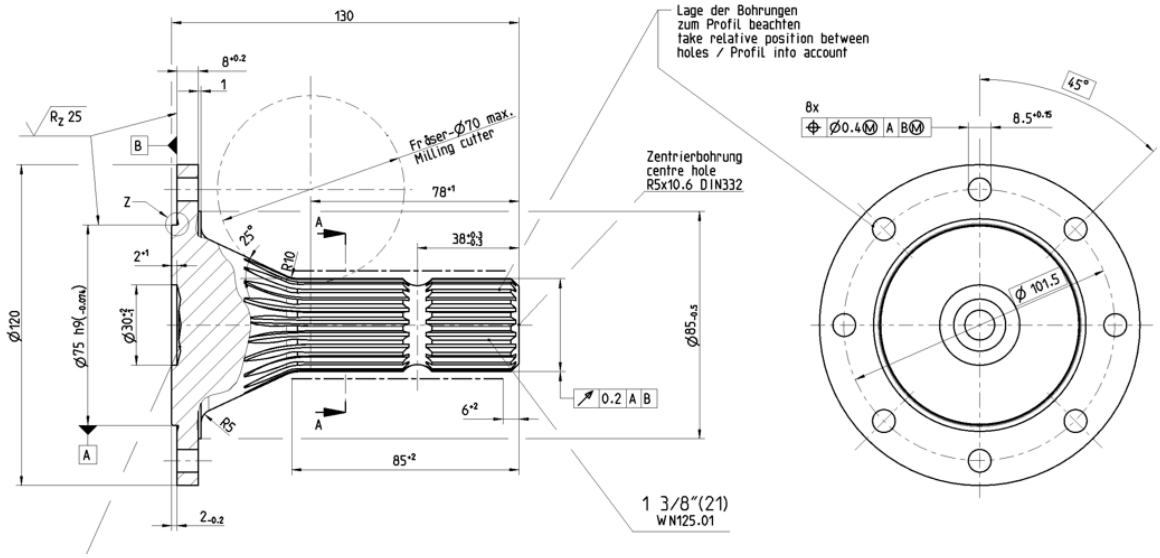
15. Accessories

16. Adapter Flanges for Series 25K (Torque up to 2500 Nm)

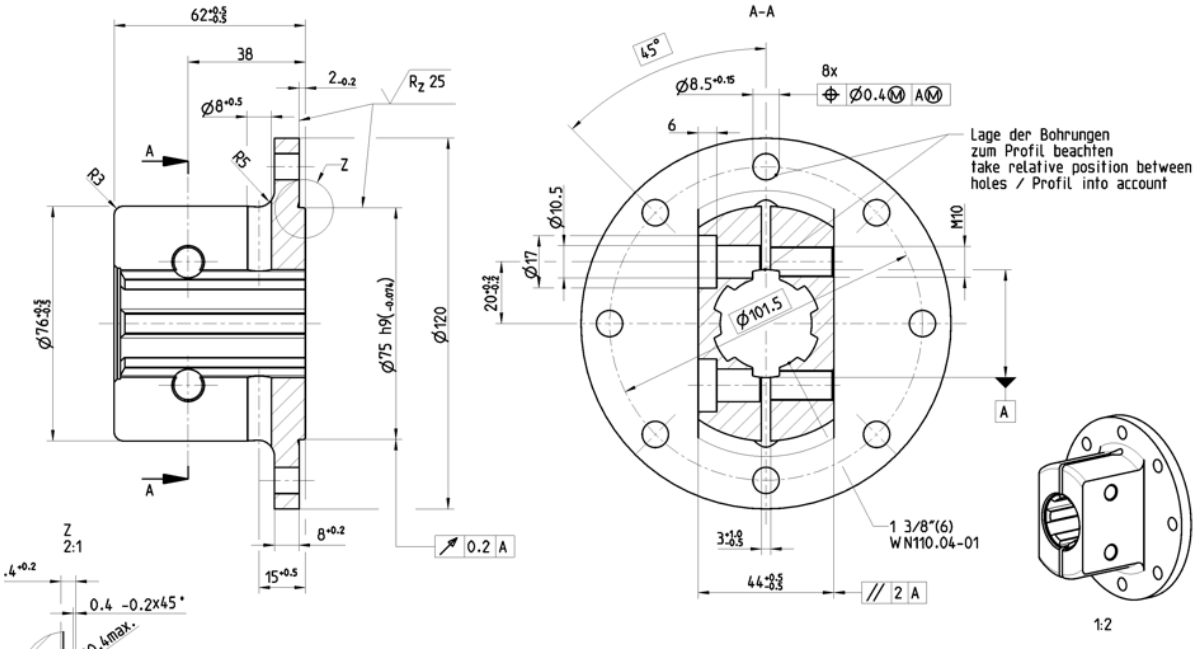
a. Flange 1 3/8 (6) TK 101,5 – 8



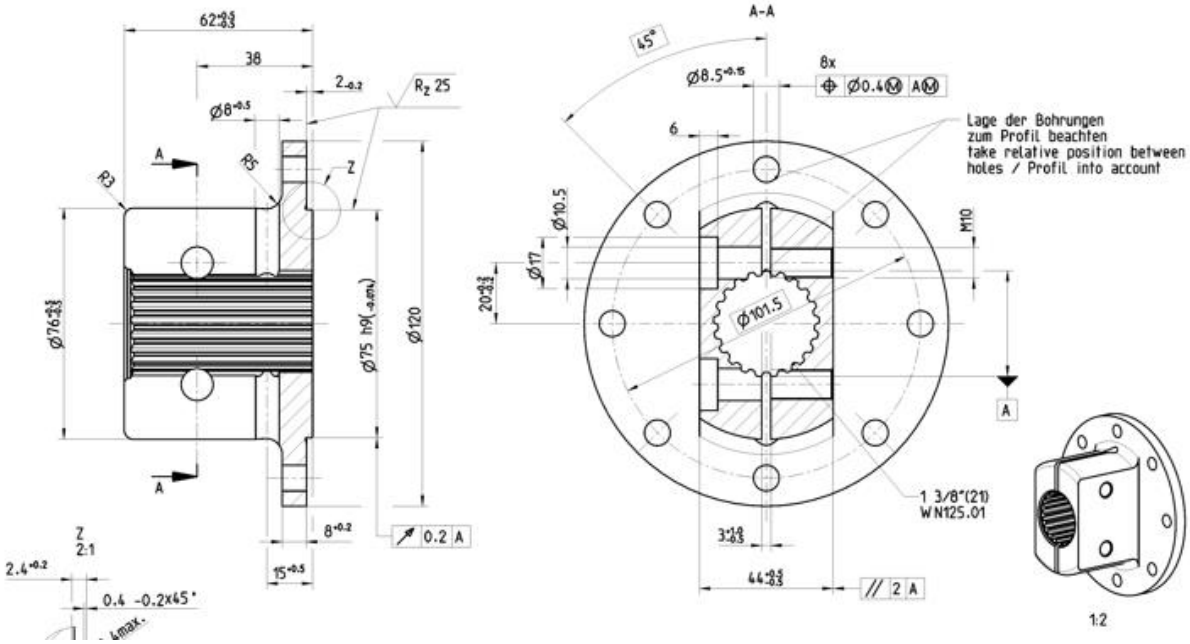
b. Flange 1 3/8 (21) TK 101,5 – 8



c. Flange hub 1 3/8 (6) TK 101,5 – 8

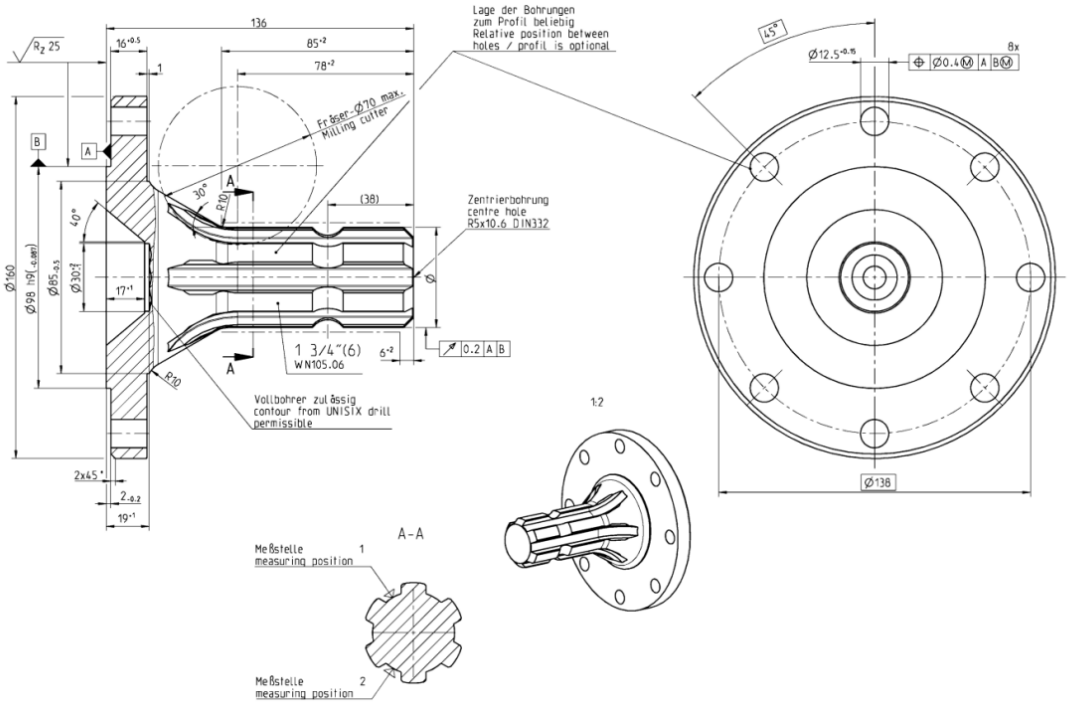


d. Flange hub 1 3/8 (21) TK 101,5 – 8

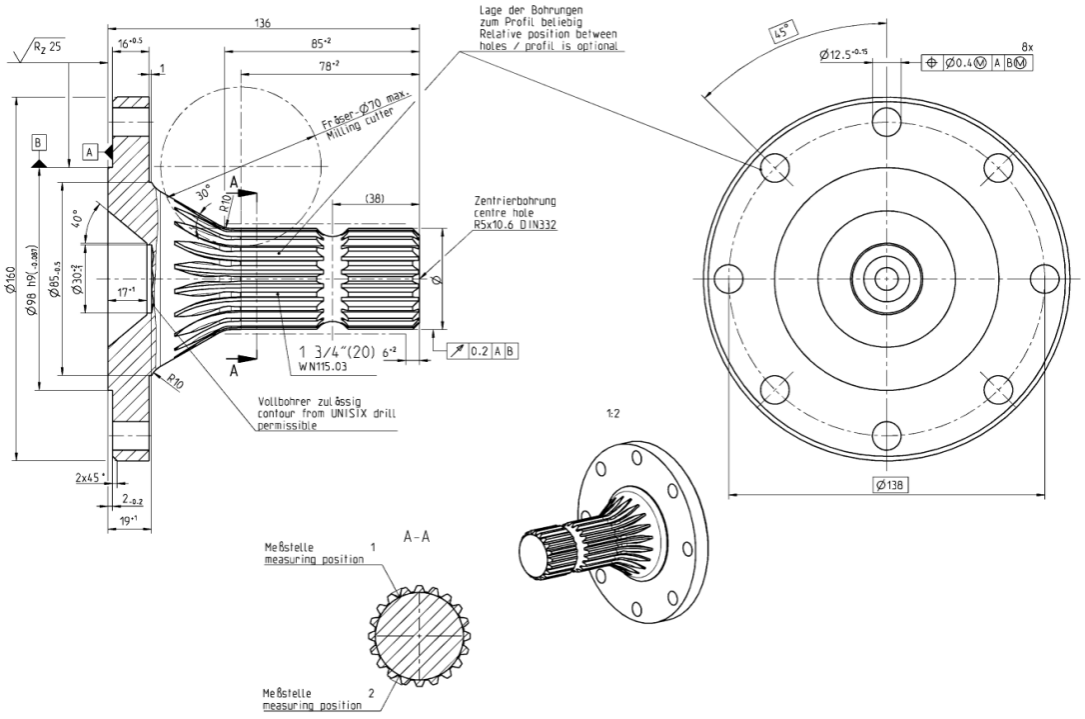


17. Adapter Flanges for Series 50K (Torque up to 4500 Nm)

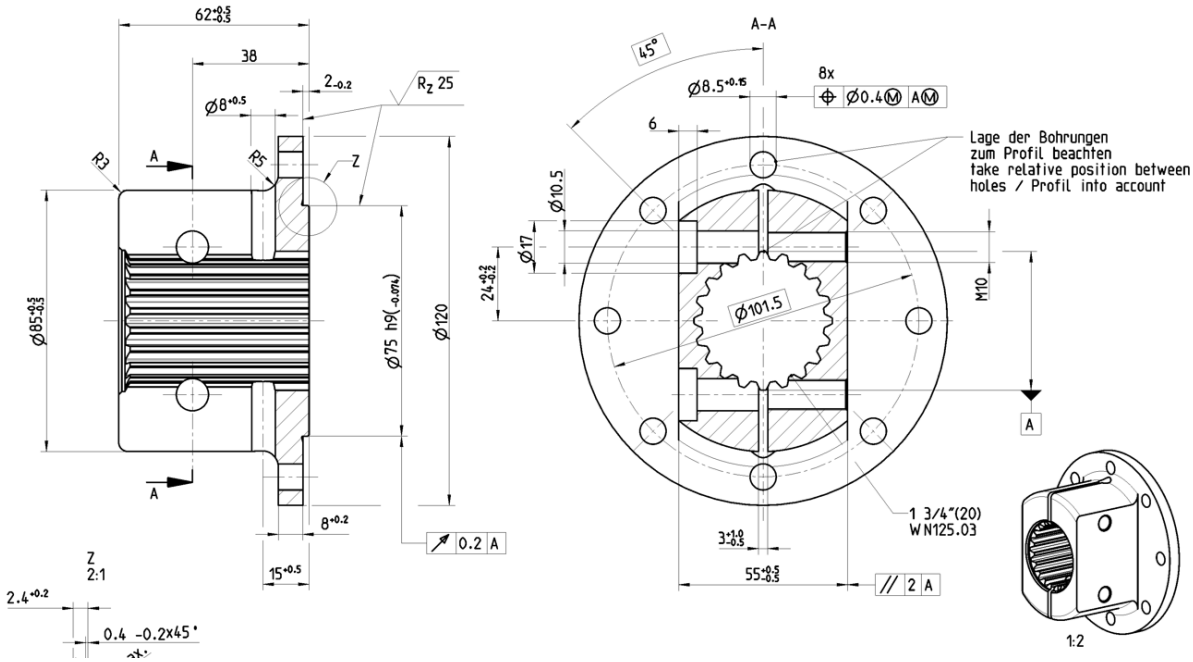
e. Flange 1 3/4 (20) TK 138 – 8



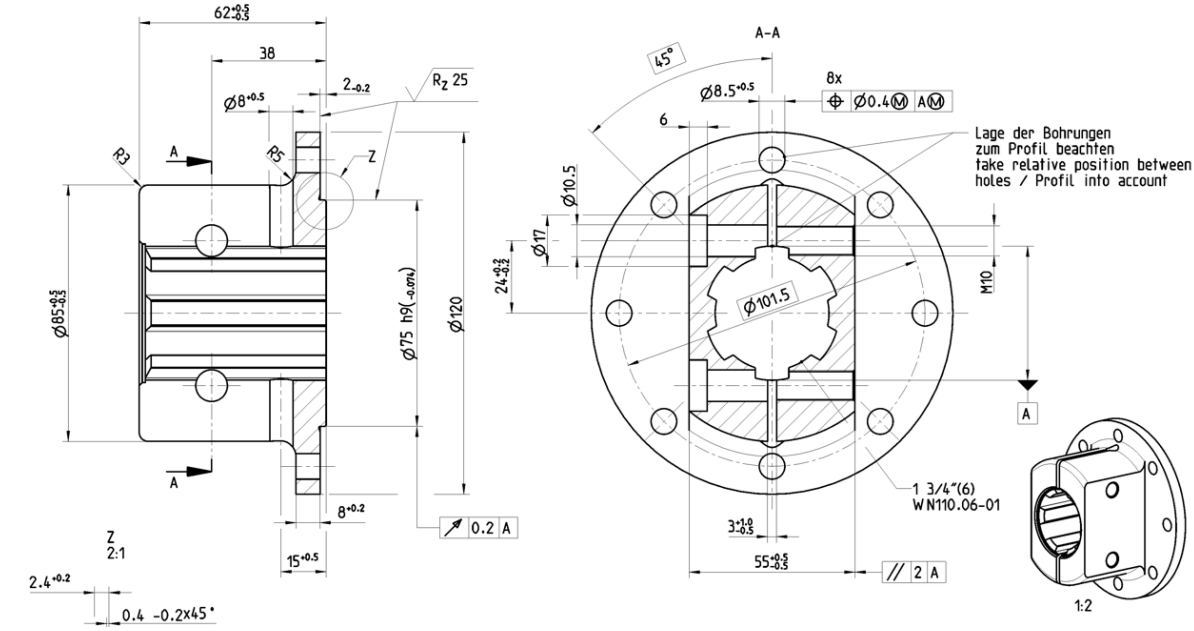
a. Flange 1 3/4 (20) TK 138 – 8



b. Flange hub 1 3/4 (20) TK 138 – 8



c. Flange hub 1 3/4 (6) TK 138 – 8



18. Additional Accessories

Case made of impact-resistant polypropylene with hard foam insert for transporting the gateway and measuring flange.

Extremely robust design specifically for field use and harsh environmental conditions.

The case is dust and waterproof.

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19. Display data and connect with device.

Download the Melectric Device Manger for Android MAC or Windows from Google Playstore or contact us for your personal link on:

info@melectric-systems.de

Link for downloading the App from our Store.

https://play.google.com/store/apps/details?id=com.melectric.torqueflanche&pcampaignid=web_share

20. Recharging of the device.

To recharge the sensor, remove the hexagon plug.

Plugin the charger that you received with the sensor.

The typical charging time is 4-6 hours.

21. Order Codes

Serie ME-BL				
	Measurement Range			
	2500	Serie 25k (2500 Nm)		
	5000	Serie 50K (4500 Nm)		
	8000	Serie 80K (8000 Nm)		
		Adapter Plates		
			Available Adapter for Series 25K	
		1	LK 101,5 -8	Flanschzapfen 1 3/8 (6)
		2	LK 101,5 -8	Flanschnabe 1 3/8 (6)
		3	LK 101,5 -8	Flanschzapfen 1 3/8 (21)
		4	LK 101,5 -8	Flanschnabe 1 3/8 (21)
			Available Adapter for Series 50K	
		5	LK 138 - 8	Flanschzapfen 1 3/4 (6)
		6	LK 138 - 8	Flanschnabe 1 3/4(6)
		7	LK 138 - 8	Flanschzapfen 1 3/4 (20)
		8	LK 138 - 8	Flanschnabe 1 3/4 (20)
			Other accessories	
			B	Gateway BLE - CAN
			K	Messkoffer mit Schaumstoffeinlage

ME-BL	2500	12	BK	Example

When operating the measuring flange on the PTO output of agricultural machinery or in connection with attachments, safety measures must be taken in accordance with the Machinery Directive. The sensor may only be used in a suitable and safe environment!