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## ZF Series Force Transducers

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*NOTE: Not available in U.S.*

### FEATURES

- 1 kN to 200 kN
- High accuracy
- For tensile or pressure forces
- Made of stainless steel
- Enclosure protection IP 67



### DESCRIPTION

The force transducers of the ZF series have been designed for the measurement of static and dynamic tensile and pressure forces; they are characterised by their low assembly height at a high measuring accuracy. The force is introduced on one side through a central tapped hole, the other side of the force transducer has to be fixed to a sufficiently rigid plane surface by means of 8 high-strength hexagonal socket-head bolts to be tightened with a defined torque. A strain gauge bridge

converts the elastic deformation of the sensing element into an electrical signal that can be evaluated. Compensation and adjustment elements are used to set the required technical data. The entire unit is made of a special stainless steel. As a standard, the transducers are equipped with a 3 m connection cable, which has free ends on the other side. If separately ordered the unit can also be supplied with a plug connection in accordance with the MIL specification.

Accuracy class		0.1	0.2
Nominal force (=F <sub>N</sub> )	kN	1/2/5/10/20/50/100	200
Max. permissible force	%F <sub>N</sub>	0.5/1/2/5	150
Ultimate overload	%F <sub>N</sub>	>500	
Max. transverse force	%F <sub>N</sub>	10	
Reference temperature	°C	+23	
Nominal temperature range	°C	-20 to +50	
Storage temperature range	°C	-30 to +70	
Enclosure protection (DIN 40050)		IP 67	
Nominal sensitivity (=S)	mV/V	2.000 ±0.005	
Zero tolerance band	%S	≤3	
Max. supply voltage	V	20	
Input resistance	Ω	770 ±40	
Output resistance	Ω	700 ±10	
Insulation resistance	Ω	>5 × 10 <sup>9</sup>	
Combined error *	%S	0.1	
Linearity error	%S	0.1	0.2
Width of backlash	%S	0.1	0.2
TC of zero per 10 K	%S	0.1	0.2
TC of sensitivity per 10 K	%S	0.1	0.2
Creepage error (30 min)	%S	0.1	0.2

\* According to VDE / VDI 2638

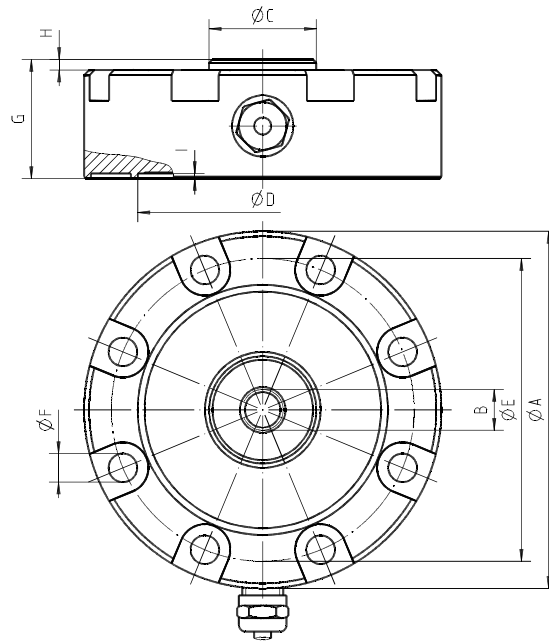
## PIN CONNECTIONS

Pin	To DIN
Supply voltage (+)	brown
Supply voltage (-)	yellow
Measuring voltage (+)	green
Measuring voltage (-)	white
Shield	black
Cable length	3 m

## TORQUE FOR FASTENING SCREWS

Model	Size	Torque
ZF 1/2/5/10 kN	M8	50 Nm
ZF 20/50 kN	M10	85 Nm
ZF 100/200 kN	M12	150 Nm

**ZF 1 kN to 50 kN**



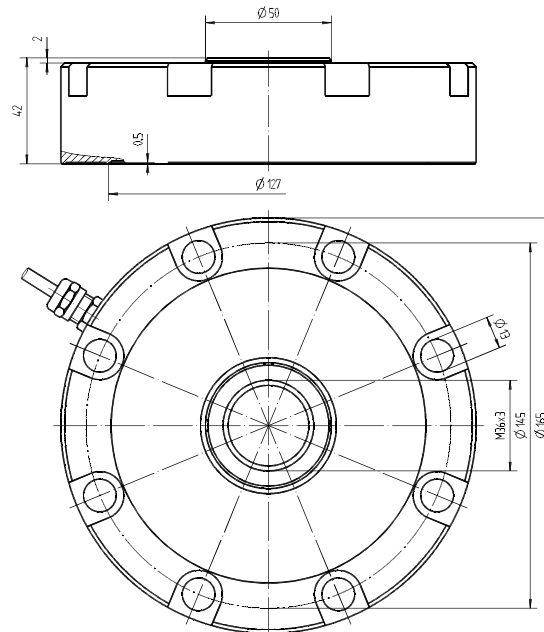
Type	A	B	C	D	E	F	G	H	I	Weight
ZF 1/2/5/10 kN	Ø 105	M12	31.5	73.5	89	8.4	35	3	1.5	0.5 kg
ZF 20/50 kN	Ø 150	M24 x 2	40	105	130	11	40	2	1	3.7 kg

**ZF 100 kN to 200 kN**

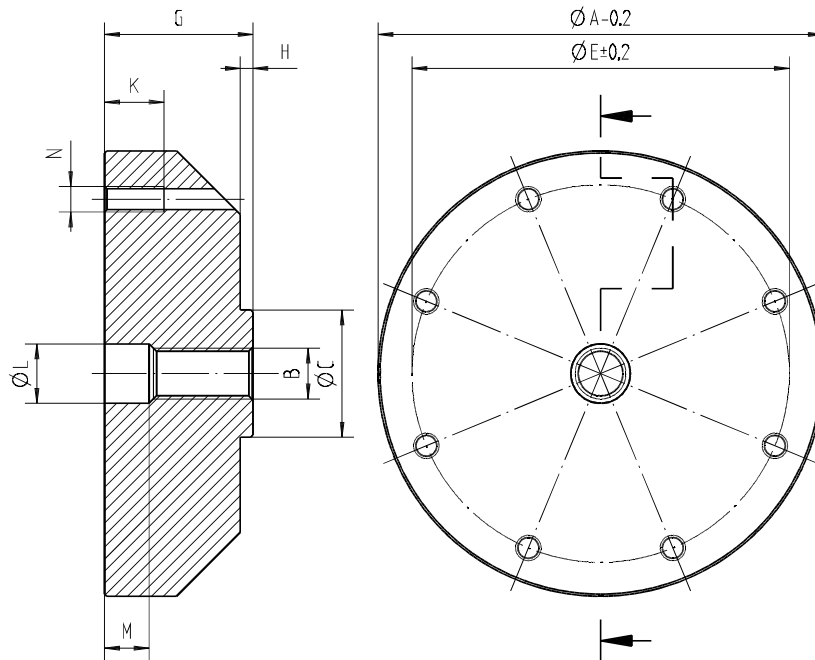
**MODELS**  
**Nominal force**

100 kN  
200 kN

Weight: 4.9 kg



**Counter plate for ZF**



Nominal force	Model	Ø A	B	C	E	G	H	K	L	M	N
ZF 1/2/5/10 kN	<b>AM 037</b>	105	M12	31.5	89	35	3	14	~14	10.5	M8
ZF 20/50 kN	<b>AM 038</b>	150	M24 x 2	40	130	40	2	15	~27	10.5	M10
ZF 100/200 kN	<b>AM 035</b>	165	M36 x 3	50	145	42	2	15	-	-	M12

**ORDERING INFORMATION FOR MECHANICAL ACCESSORIES**

**ZF 1 kN to 50 kN**

- AM 019 Force introduction calotte A 12-50 for ZF 1 kN to 10 kN
- AM 044 Force introduction calotte A 24-50 for ZF 20 kN and 50 kN
- AM 037 Counter plate for ZF 1 kN to 10 kN
- AM 038 Counter plate for ZF 20 kN and 50 kN
- AA 12 Flexible head (external screw thread) with counter nut for ZF 1 kN to 10 kN
- AA 25 Flexible head (external screw thread) with counter nut for ZF 20 kN and 50 kN
- AC 043 6-pin plug connector at the force transducer

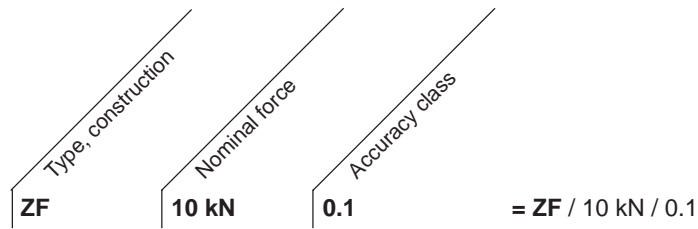
**ZF 100 kN to 200 kN**

- AM 045 Force introduction calotte A 36-120 for ZF 100 kN and 200 kN
- AM 035 Counter plate for ZF 100 kN and 200 kN
- AA 35 Flexible head (external screw thread) with counter nut for ZF 100 kN
- AC 043 6-pin plug connector at the force transducer

## ORDERING INFORMATION

### Explanation of Type Code (Ordering Example)

for Force Transducers



## SYSTEM OPTIONS

Model No.	Product Description	Ordering Number
LMU 112	Load monitoring unit containing 2 level detectors, 1 current and 1 voltage O/Ps	224-112-000-XXX
LMU 116	Load monitoring unit containing 4 level detectors, taring and 4 summer functions	224-116-000-XXX
LMU 117	Dual channel load monitoring unit (2 x LMU 112)	224-117-000-XXX
AN 2000 C	Digital process monitor for strain gauge transducers	AN 2000 C /X/X/XX/XX/X

*Due to the continual development of our products, we reserve the right to modify specifications without forewarning.*



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