
ZS Series Load Cells

NOTE: Not available in U.S.

FEATURES

- 0.5 t to 5 t (2 kN to 50 kN)
- Approved for use in calibrated weighing systems
- High accuracy (C1, C2, C3 or 0.1 and 0.05)
- Hermetically-sealed housing (IP 67)
- Made of stainless steel
- Appliances for easy assembly
- 6-wire configuration
- EU approval *



DESCRIPTION

The ZS load cells are made entirely of a special stainless steel and are, therefore, also suitable as weighing plants under difficult environmental conditions. The sensor element itself is fabricated as a transverse body. A metal diaphragm, which is welded on to the deformation zone protects the sensitive strain gauges from environmental influences. As a result constant measuring characteristics are ensured. Compensation and adjustment elements, which are required for the exact setting of the guaranteed technical parameters, are positioned in a special

chamber, which is also sealed. The load cell can be subjected to traction or compression force. An assembly kit, which can be ordered separately, facilitates the unproblematic and safe installation of the load cell in the weighing unit. As a standard, the load cells are supplied with a 3 m long connection cable. Of course, these load cells, calibrated in Newton (N), can also be supplied as high-precision transducers up to the accuracy class 0.05%.

FORCE TRANSDUCERS / LOAD CELLS

Accuracy class		0.1	0.05	C1	C2	C3 *
Nominal force (=F _N)	kN	2/3/5/10/20/50 ***				
Nominal load (=F _N)	t	0.5/1/2/5				
Max. permissible force/load	%F _N	150				
Ultimate overload	%F _N	>300				
Max. transverse force/load	%F _N	10				
Minimum application range	%F _N	50				
Reference temperature	°C	+23				
Nominal temperature range	°C	-20 to +60			-10 to +40	
Operating temperature range	°C	-30 to +70				
Storage temperature range	°C	-40 to +70				
Enclosure protection (DIN 40050)		IP 67				
Nominal sensitivity (=S)	mV/V	2.000 ±0.002				
Zero tolerance band	%S	≤1				
Max. supply voltage	V	12				
Input resistance	Ω	380 ±30				
Output resistance	Ω	352 ±1.5				
Insulation resistance	Ω	>5 × 10 ⁹				
Combined error **	%S			≤0.030	≤0.023	≤0.021
Variability **	%S			≤0.030	≤0.010	≤0.010
Linearity error **	%S	≤0.1	≤0.05			
Width of backlash **	%S	≤0.1	≤0.05			
T. Coefficient of zero per 10 K	%S	≤0.035	≤0.035	≤0.070	≤0.035	≤0.023
T. Coefficient of sensitivity per 10 K	%S	≤0.1	≤0.05	≤0.017	≤0.010	≤0.008
Zero recovery error (30 min)	%S	≤0.1	≤0.05	≤0.050	≤0.025	≤0.017
Creepage error (30 min)	%S	≤0.1	≤0.05	≤0.049	≤0.024	≤0.024

* Test report No. D09-96 for ZS 0.5 t, 1 t and 2 t nominal load

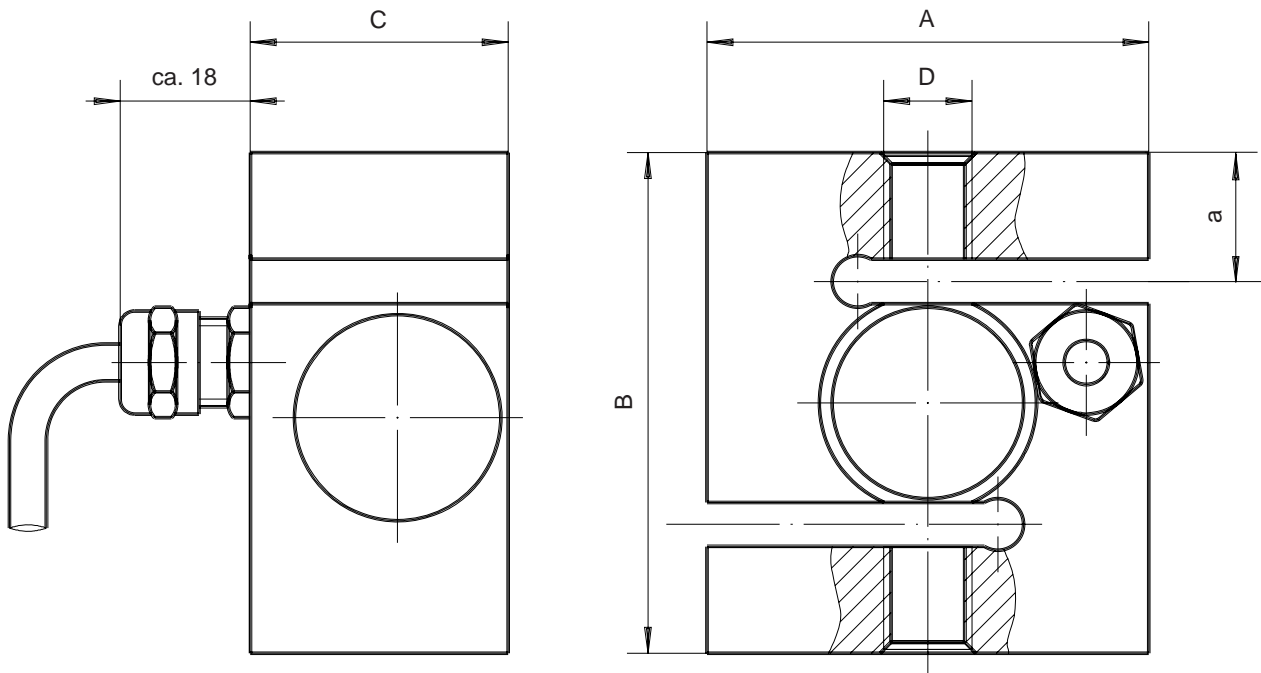
** According to VDI 2637

*** Further nominal load and dimensions upon request

PIN CONNECTIONS
Pin

Supply voltage (+)	brown
Supply voltage (-)	green
Measuring voltage (+)	red
Measuring voltage (-)	white
Sensing line (+)	grey (In 6-wire configuration only)
Sensing line (-)	blue (In 6-wire configuration only)
Shield	black
Cable length	3 m

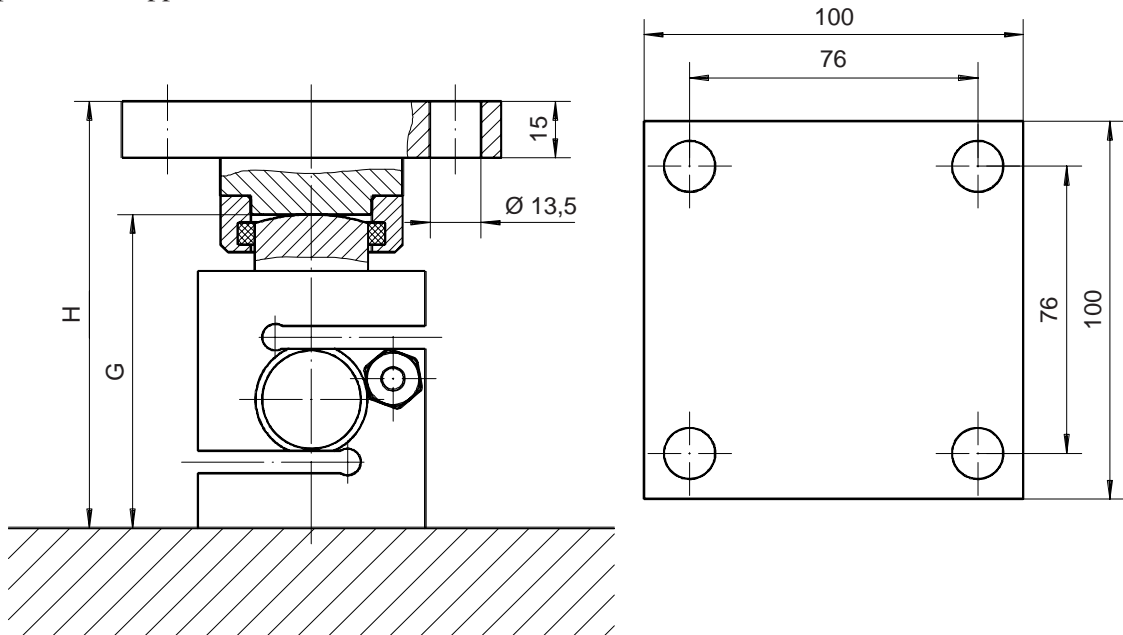
ZS 0.5 t to 5 t (2 kN to 50 kN)



Model	A	B	C	D	a	Weight
ZS 2kN / 3kN	60	68	35	M12	15.8	1.0 kg
ZS 0.5t / 5kN	60	68	35	M12	15.8	1.0 kg
ZS 1t / 10kN	60	68	35	M12	16.4	1.0 kg
ZS 2t / 20kN	68	78	38	M20x1.5	21.5	1.3 kg
ZS 5t / 50kN	68	78	38	M24x2	22.5	1.3 kg

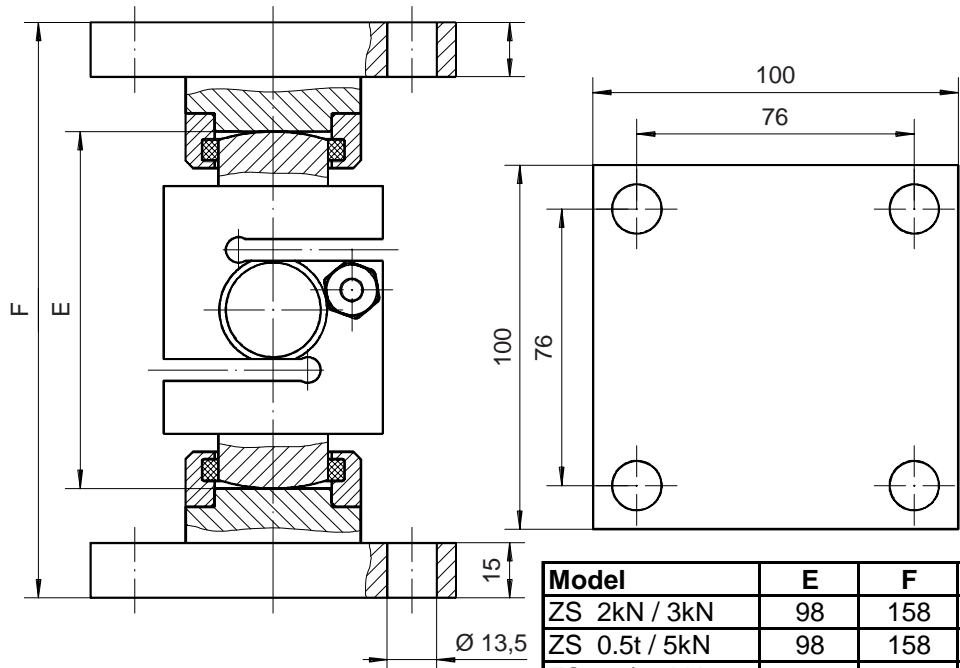
AM 020

ZS with pendulum support, above



AM 022

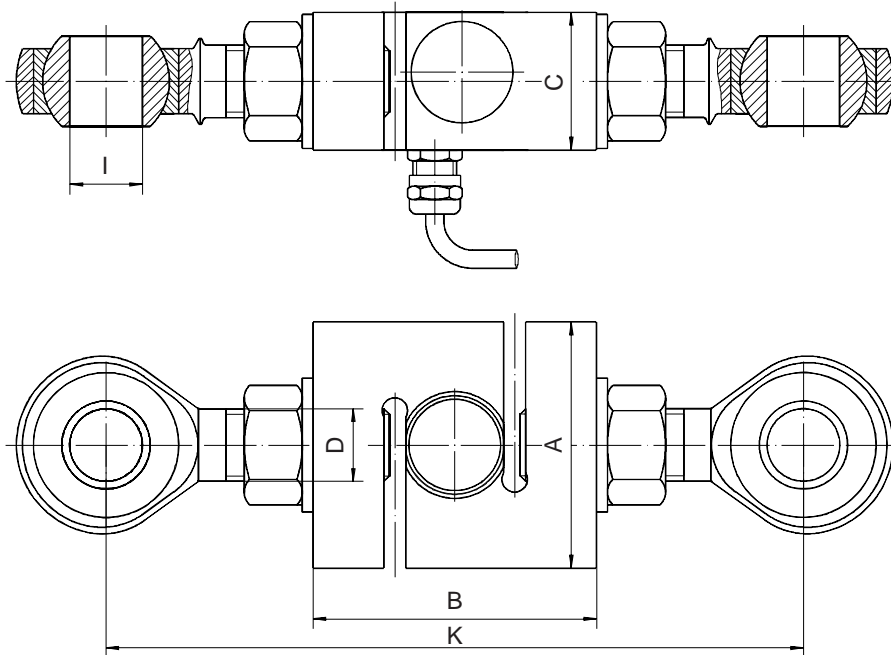
ZS with pendulum support, complete



Model	E	F	G	H
ZS 2kN / 3kN	98	158	83	113
ZS 0.5t / 5kN	98	158	83	113
ZS 1t / 10kN	98	158	83	113
ZS 2t / 20kN	122	182	100	130
ZS 5t / 50kN	122	182	100	130

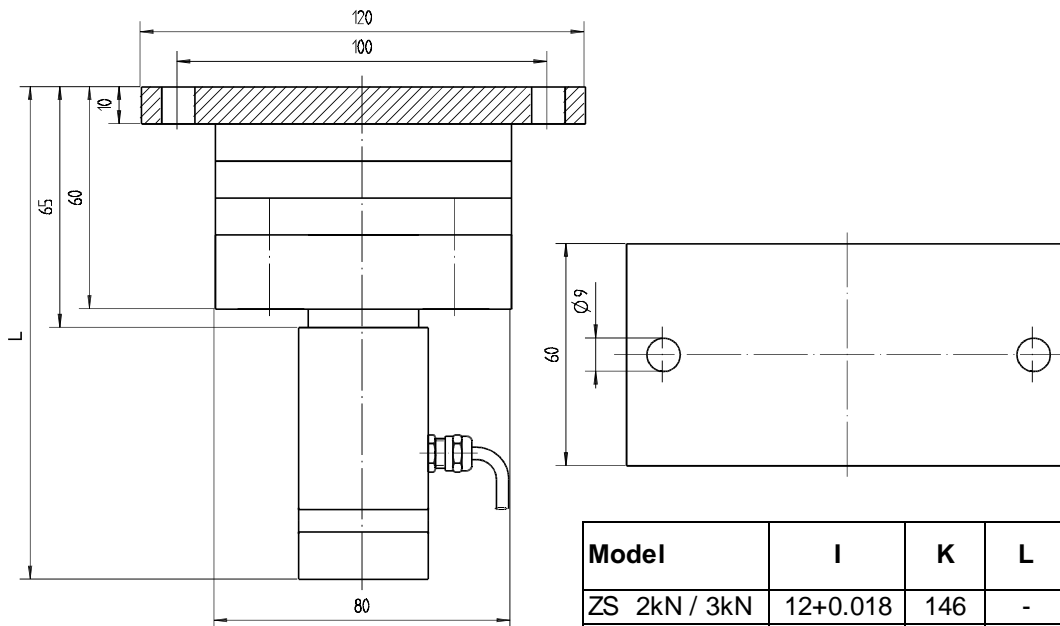
AA 12 (2 kN to 10 kN) • AA 20 (20 kN) • AA 25 (50 kN)

ZS with flexible heads



AM 068

ZS 0,5t to 2t with elastomer bearing

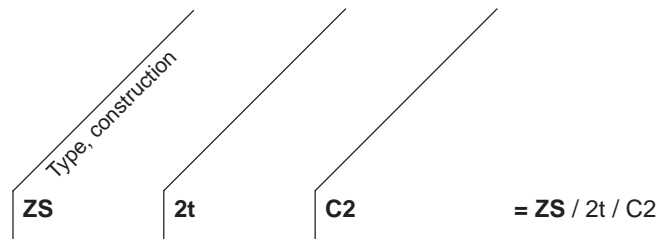


Model	I	K	L	Elastomer Bearing
ZS 2kN / 3kN	12+0.018	146	-	-
ZS 0.5t / 5kN	12+0.018	146	133	AM 068.01
ZS 1t / 10kN	12+0.018	146	133	AM 068.02
ZS 2t / 20kN	20+0.021	192	143	AM 068.02
ZS 5t / 50kN	20+0.021	242	-	-

ORDERING INFORMATION

Explanation of Type Code (Ordering Example)

for Force Transducers



ORDERING INFORMATION FOR MECHANICAL ACCESSORIES

ZS 0.5 t to 5 t (2 kN to 50 kN)

AA 12	Flexible head with counter nut for ZS 2kN to 10kN
AA 20	Flexible head with counter nut for ZS 2t
AA 25	Flexible head with counter nut for ZS 5t
AC 024	Protection cable for ZS
AM 019	Force introduction calotte A12-50 for ZS 2kN to 10kN
AM 020	Pendulum support, above or below for ZS, incl. force introduction calottes
AM 022	Pendulum support for ZS, complete, incl. force introduction calottes
AM 023	Plate to weld on for pendulum support for ZS, above or below
AM 024.01	Assembly set for ZS 2kN to 10kN, max. transverse power <5kN
AM 024.02	Assembly set for ZS 2t, max. transverse power <20kN
AM 024.03	Assembly set for ZS 5t, max. transverse power <20kN
AM 043	Force introduction calotte A20-50 for ZS 2t
AM 044	Force introduction calotte A24-50 for ZS 5t
AM 066	Elastomer bearing for ZS 5t/50kN
AM 068.01	Elastomer bearing for ZS 0,5t/5kN transverse stiffness 1200 N/mm
AM 068.02	Elastomer bearing for ZS 1t/10kN or 2/20kN transverse stiffness 3000 N/mm

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/XXX

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



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