

# Tension/Compression Transducer SCHATZ®-INSPECT

**SCHATZ®**  
ADVANCED QUALITY



- measurement ranges from 0–500 N to 0–200 kN
- measurement uncertainty  $\leq 0.5$  % of full-scale value
- easy fitting
- compact dimensions
- SCHATZ® Autocode identification

## Application

Thanks to their compact design and construction, these tension/compression transducers can be conveniently used in both laboratory and industrial environments. They are made from corrosion-resistant steel, and with their standardized nominal measurement ranges and simple fitting, they can easily be integrated into existing structures.

They can be used to measure static, quasi-static and dynamic tensile force and compressive force, depending on the specific requirements of the measurement task.

Some examples of typical application areas are measuring insertion forces for pressed fittings, measuring spring forces, measuring cutting and shearing forces, measuring and monitoring forces in assembly operations, and determining tool feed forces for drills and boring machines.

A load centering plate fitted to the transducer (available separately) can be used for making measurements on swivel-eye joints, measuring tensile forces in ropes and chains, and so on.

## Description

Strain gauges are attached to a flex plate inside the transducer. When a force is applied to the transducer, the strain gauges generate a bridge output voltage that is directly proportional to the quantity to be measured. An integrated threaded stud passing through the central axis of the transducer must be used to apply the force to be measured to the transducer without introducing any lateral force or torsion, using either a load transfer fitting (included) or an application-specific adapter fitting.

Optimum measurement accuracy for forces of 50 kN or greater is achieved by mounting the force sensor on a flat, hardened and ground support surface. For the low measurement range up to 2 kN, three special knife-edge supports eliminate the need for such a base. The transducer must be protected against exposure to lateral forces by means of suitable structural arrangements, such as mounting on a floating bearing or using a lever pivoted on a roller bearing. Through holes in the outer ring can be used for convenient mounting of the transducer.

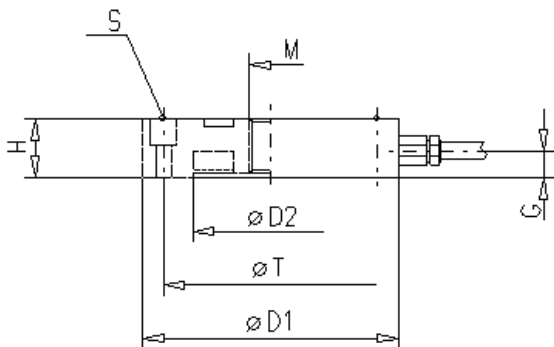
The integrated SCHATZ Autocode system allows the transducer to be automatically identified when it is connected.

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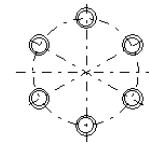
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Technical data	5413-1940								
Model No.	/0,5	/1	/2	/5	/10	/20	/50	/100	/200
Measuring range/kN	0,5	1	2	5	10	20	50	100	200
Tightening torque for mounting nuts	3 N·m	3 N·m	3 N·m	3 N·m	3 N·m	3 N·m	10 N·m	100 N·m	100 N·m
Nominal sensitivity	1,5 mV/V								
Calibration resistance	58,15 kΩ								
Nominal bridge resistance	350 Ω								
Max. service load	1,2 x measuring range								
Failure load	1,5 x measuring range								
Rated temperature range	15...70°C								
Operating temperature range	-30...80°C								
Connecting cable	1,5 m								
Plug	ODU-Mini-Snap series B 16-pol. pin								

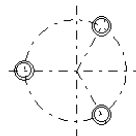
Dimensions transducer	/0,5	/1	/2	/5	/10	/20	/50	/100	/200
D1			54,5			79	119		155
T			45			68	105		129
D2			35,5			59	94		109
H			16			25	35		50
G			4,8			8,2	9,2		25
M			M8 x 1,25			M12 x 1,5	M24 x 1,5		M36 x 3
S			Km4			Km4	Km6		Km12



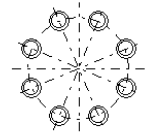
hole pattern  
5 - 10kN



hole pattern  
0,5 - 2kN



hole pattern  
20 - 200kN



Load transfer fitting	minimizes measurement error for off-center force application. The compressive force must be applied to the load transfer fitting using a part with a flat end face (≥60 HRC).								
Dimensions load transfer fitting	/0,5	/1	/2	/5	/10	/20	/50	/100	/200
D3			14			20	40		57
A			7,3			15,1	20		30
B			7			12	17		40
M			M8 x 1,25			M12 x 1,5	M24 x 1,5		M36 x 3
SW			-			16	32		46
Tightening torque			hand-tight			10 N·m	20 N·m		50 N·m

