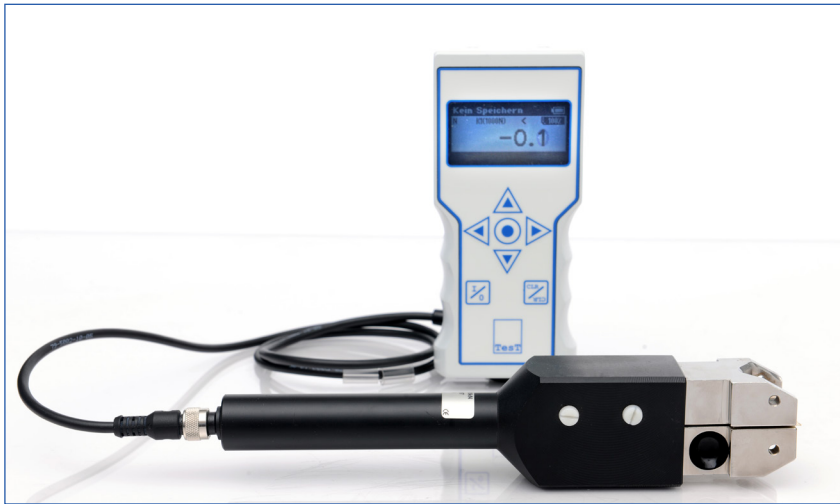


Electrical Force Transducers – Model 314



- Capacities: 2kN bis 30kN
- For compression
- At spot-welding machines
- Special steel
- High accuracy
- Sensitivity: 2mV/V
- Robust
- Maintenance-free
- For mobile applications
- TEDS module integrated ¹⁾
- Incl. Evaluation Electronics

The electrical force transducers of the model series 314 are made of special steel. Their measuring element is built as a shear force sensor. They are particularly used for

force measuring at spot-welding machines as well as for ongoing QA tasks. Measurements are also feasible even when the welding current is turned on because the

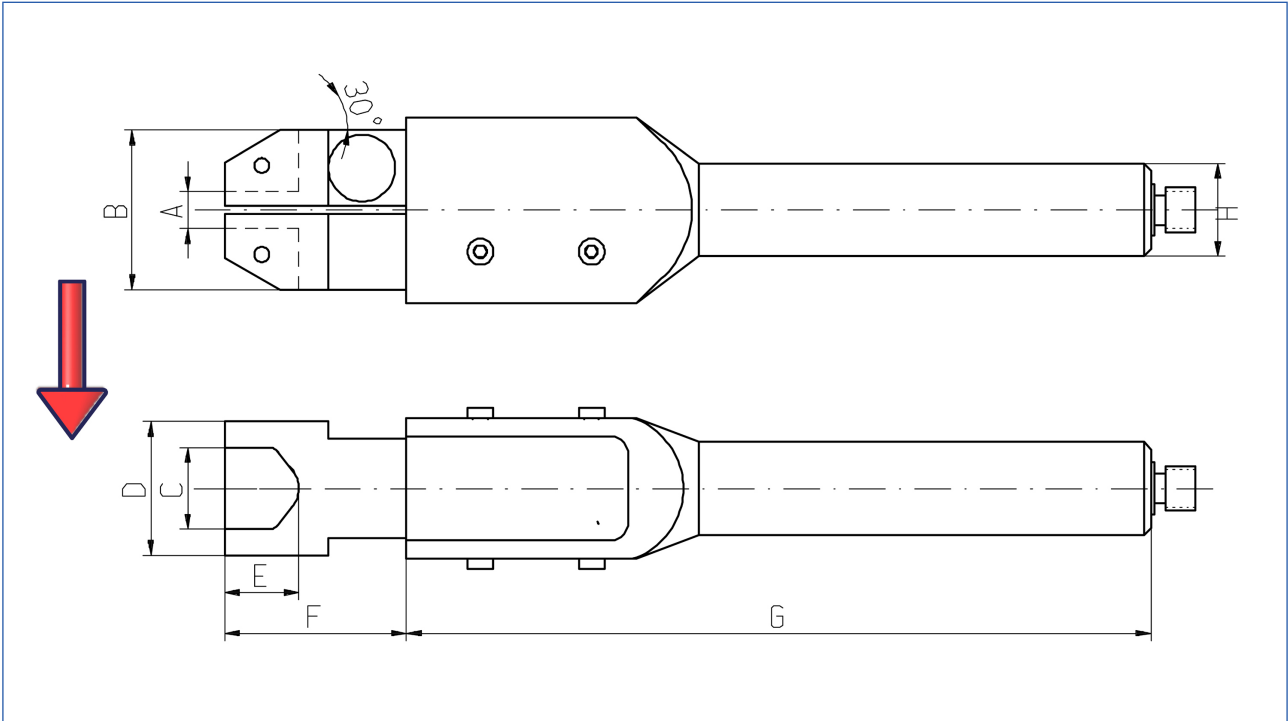
measuring element is isolated from all other parts. A TEDS module is already integrated into the sensor. The evaluation electronics 813 is included in scope of delivery.

Model 314			
>> Technical data according to VDI / VDE directive 2638			
	Symbol	Unit	Standard
Zero signal when removed	S ₀	mV/V	0,02
Rated characteristic value	C _{nom}	mV/V	2
Relative error of characteristic value	d _c	%	≤ ± 0,1
Relative linearity error	d _{lin}	%	≤ ± 0,05
Relative repeatability error in unchanged mounting position	b _{rg}	%	≤ ± 0,03
Combined error	F _{comb}	%	≤ ± 0,1
Reference temperature	T _{ref}	°C	21
Rated temperature range	B _{T, nom}	°C	-10...+40
Operating temperature range	B _{T, G}	°C	-15...+60
Storage temperature range	B _{T, S}	°C	-20...+70
Relative creep after 30 min	K _{0,5}	%	≤ ± 0,06
Relative creep after 8 h	K ₈	%	≤ ± 0,018
Temperature effect on characteristic value per 10K	TK _C	%	≤ ± 0,05
Temperature effect on zero signal per 10K	TK ₀	%	≤ ± 0,05
Input resistance	R _e	Ω	1025 ± 25
Output resistance	R _a	Ω	1000 ± 2
Insulation resistance	R _{is}	GΩ	> 5
Max. excitation voltage	U	V	15
Rated range of excitation voltage	B _{U, nom}	V	5...10
Limit force	F _L	%	≤ 150
Breaking force	F _B	%	≥ 250
Max. permissible dynamic load ²⁾	L _d	%	≤ 50
Degree of protection acc. to DIN 60529			IP65

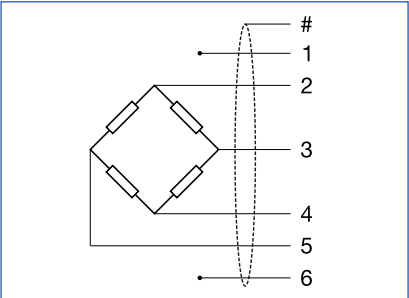
¹⁾ TEDS = Transducer Electronic Data Sheet acc. to IEEE 1451.4

²⁾ Oscillation amplitude acc. to DIN 50100

Electrical Force Transducers – Model 314



Dimensions in mm		
Model 314		
	2kN	20kN
	5kN	30kN
	10kN	
A	9,0	16,5
B	43,0	72,0
C	22,5	22,5
D	36,0	36,0
E	20	20
F	57	70
G	200	200
H	∅ 25	∅ 25



Connection Drawing		
1	white	TEDS Data
2	red	Excitation +
3	yellow	Output +
4	blue	Excitation -
5	green	Output -
6	black	TEDS GND
#		Shield

Model 314 - Scope of delivery
Spot-welding force gauge 314
+ Sensor cable
Evaluation Electronics 813 included
+ Transportation case
+ USB charger
+ USB cable

For more details...
See also: Data sheet of model 813