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5100-5105-ISO

HIGH CAPACITY STANDARD REFERENCE FORCE TRANSDUCER TENSION AND COMPRESSION

Standard reference force transducer specially designed according to the norm ISO 376(1) (Class "1", "05" and "00").

Model 5105 - 500 kN

Features

- Broad range of capacities (up to 30 MN)
- Complete range of load accessories
- Protection: IP65
- Material: Nickel plated alloy steel
- Options :
  - o digital output RS-232C or RS-485
  - o custom made dimensions
  - o ASTM E74 compliant

Applications

The SENSY's load cell 5105-ISO is perfectly designed to the following applications :

- Control of testing machines according to ISO7500

Note : This standard covers the calibration of standard force measurement instruments used for the static verification of uniaxial testing machines. it describes classifying procedures for the instruments.

Capacities

5105 : (10) - (15) - 20 - 30 - 50 - (75) - 100 - (150) - 200 - 300 - 500 kN
(0.75) - 1 - 1,5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 MN

Specifications	1	05	00	
Accuracy class	"1"	"05"	"00"	-
Relative reversibility error	<± 0.30	<± 0.15	<± 0.07	% R.O.
Relative repeatability error with rotation	<± 0.20	<± 0.10	<± 0.05	% R.O.
Relative repeatability error without rotation	<± 0.10	<± 0.05	<± 0.025	% R.O.
Time of stabilization after power excitation suppl	200... 600	200... 600	200... 600	s
Creep error over 30 min.	<± 0.1	<± 0.05	<± 0.025	% F.S.
Zero shift after loading	<± 0.05	<± 0.025	<± 0.012	% F.S.
Reference temperature	20	20	20	C
Nominal temperature range	-10...+45	-10...+45	-10...+45	C
Service temperature range	-30...+70	-30...+70	-30...+70	C
Storage temperature range	-50...+85	-50...+85	-50...+85	C
Temperature coefficient of the sensitivity	< ± 0.035	< ± 0.035	< ± 0.015	% F.S./10 C
Temperature coefficient of zero signal	< ± 0.03	< ± 0.03	< ± 0.023	% F.S./10 C
Zero balance	± 0.02	± 0.02	± 0.02	mV/V
Insulation resistance (50V)	> 5000	> 5000	> 5000	Megaohm
Reference excitation voltage	10	10	10	VDC
Nominal range of excitation voltage	3..12	3..12	3..12	VDC
Nominal sensitivity	1.5	1.5	1.5	mV/V
Safe load limit	110	110	110	% F.S.
Breaking load	>300	>300	>300	% F.S.
Input resistance	350..702 ± 2	350..702 ± 2	350..702 ± 2	Ohm
Output resistance	350..702 ± 2	350..702 ± 2	350..702 ± 2	Ohm

- RO is the rated output (i.e.: measured value). The mentioned values are only valid if RO >= 20% of full scale).
- FS is the full scale of the force transducer.
- Specifications subject to change without notice.

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LOAD CELLS

model 5100 stainless steel
model 5105 alloy steel

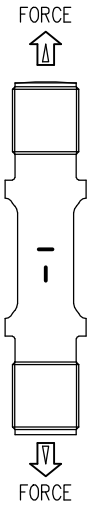
TENSION–COMPRESSION

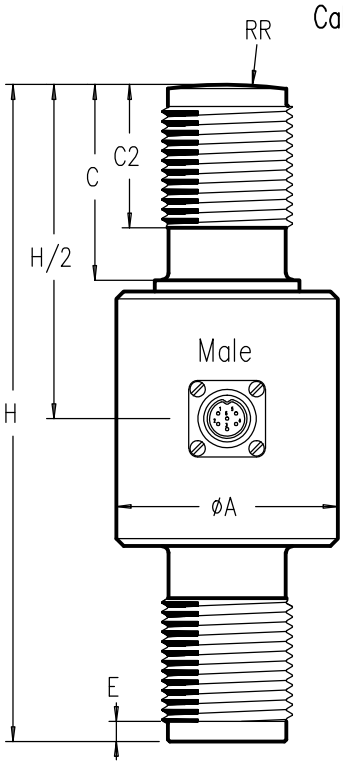
Range 10kN–30MN (1–3000 t.) IP66

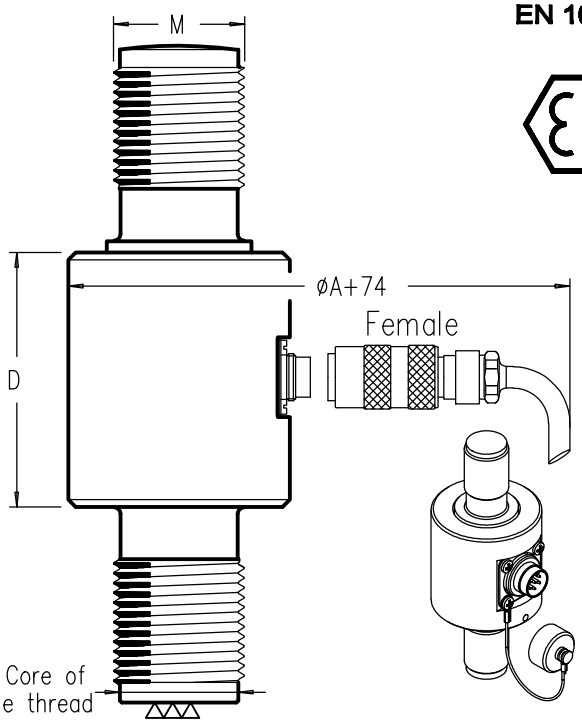
Cable length : see table (CL)

ISO 376

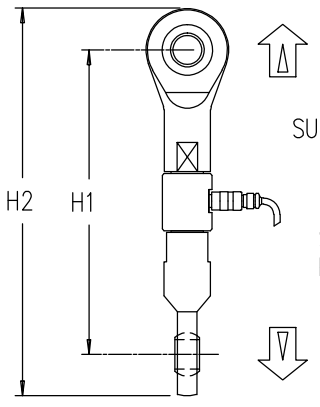
EN 10002

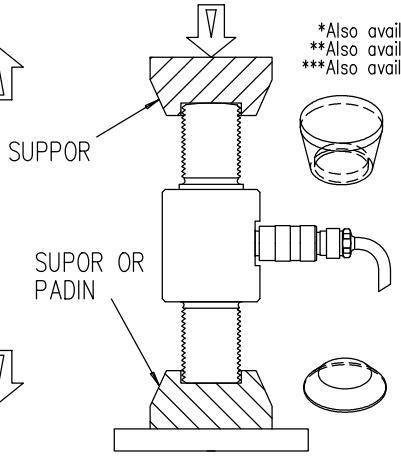






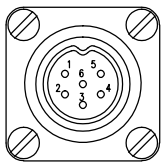
CAPACITIES	øA	C	C2	D	E	H	RR	CL	M	H1	H2	Max.Deflexion	Weight	R Input
10 – 50 kN	50	36	26	47	3	125	75	3 m	M24x2	245	307	0.02–0.08 mm	0.8 kg	±350 Ω
75 –100 kN	60	48	35	73	3	170	80	3 m	M30x2	320	402	0.13–0.15 mm	1.9 kg	±350 Ω (0.25,0.1%) ±700 Ω (0.05%,0.03% or cl 1,cl 0.5,cl 00 to ISO 376
150–200 kN	75	49	44	87	4	190	350	6 m	*M45x3	398	510	0.14–0.16 mm	3.65 kg	
300–500 kN	88.5	69	65	119	5	265	400	6 m	M64x4	560	740	0.19–0.25 mm	9.8 kg	
0.75–1.5 MN	111	95	85	145	5	340	400	6 m	**M90x4	/	/	0.30–0.42 mm	21 kg	
2 – 3 MN	150	128	128	165	7	430	600	6 m	***M125x4	/	/	0.35–0.65 mm	38 kg	±700 Ω
5 MN	180	162	158	180	8	520	800	6 m	M160x6	/	/	0.73 mm	87 kg	
7.5– 10 MN	220	185	185	210	10	590	1000	6 m	M200x6	/	/	0.83 mm	151 kg	
15 MN	280	230	230	230	10	710	1200	12m	M250x6	/	/	1 mm	280 kg	
20 MN	360	300	300	240	12	860	1500	12m	M330x6	/	/	1.2 mm	590 kg	
30 MN	390	330	330	250	13	930	1500	12m	M360x6	/	/	1.6 mm	760 kg	





*Also available in M42x3
**Also available in M64x4 from 0.75–1MN
***Also available in M110x4

FEMALE–MALE CONNECTOR DIN 45322



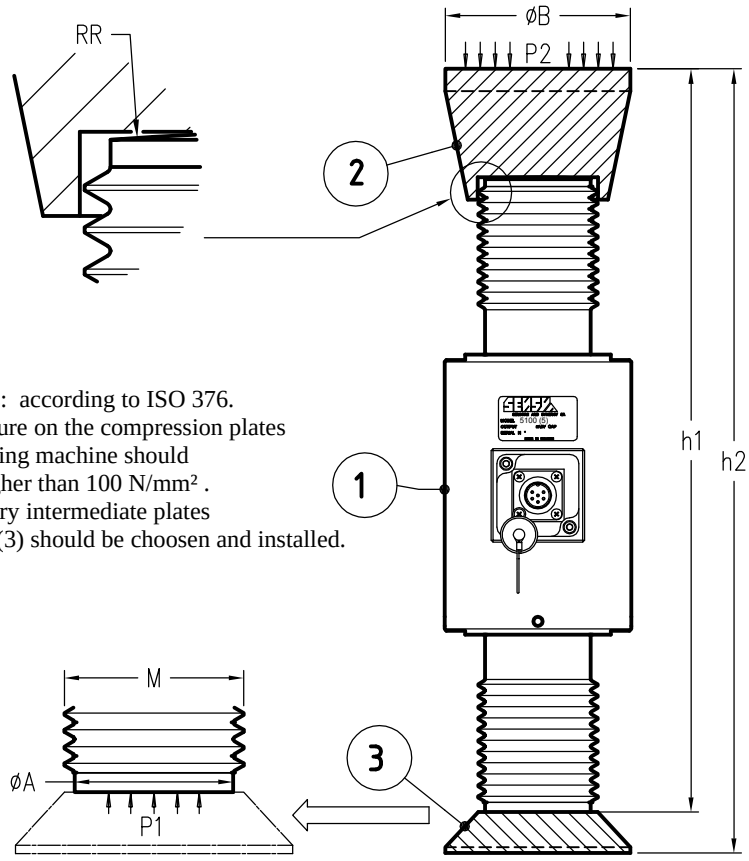
CONTACT N°		
1	Excitation	– Yellow
2	Signal	+ Green
3	Signal	– White
4	Excitation	+ Brown
5	Sense	– Grey
6	Sense	+ Pink

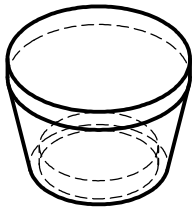
Standard : Cable screen not connected to transducer
Option f : Cable screen connected to transducer

Rev.24/3/2010

CHOICE OF THE LOADING PADS FOR MODEL 5100(5)

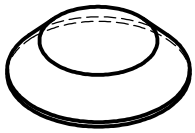
ISO 376
(EN 10002-3 & DIN 51301)

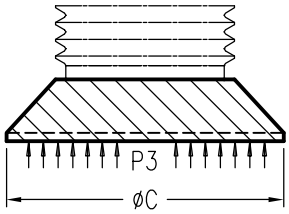




SUPOR

PADIN





Principles: according to ISO 376.
The pressure on the compression plates of the testing machine should not be higher than 100 N/mm² .
If necessary intermediate plates "PADIN"(3) should be choosen and installed.

CAPACITY ①	M	øA	Section øA mm²	Pressure P1 N/mm²	TYPE ②	øB	Section øB mm²	Pressure P2 N/mm²	TYPE ③	øC	Section øC mm²	Pressure P3 N/mm²	h1	h2
10 kN	24 X 2	21.8	373	26.8	SUPOR 24	59	2734	3.7	NOT NECES-SARY				155	
15 kN				40.2				5.5						
20 kN				53.6				7.3						
30 kN				80.4				11						
50 kN				134				18.3	PADIN 24	59	2734	18.3		177
75 kN	30 X 2	27.8	607	123.6	SUPOR 30	64	3217	23.3	PADIN 30	64	3217	23.3	205	227
100 kN				164.7				31.1				31.1		
150 kN	42X3	38.8	1182	126.9	SUPOR 42	74	4301	34.9	PADIN 42	74	4301	34.9	225.5	245.5
200 kN				169.2				46.5				46.5		
150 kN	45 X 3	41.8	1372	109.3	SUPOR 45	79	4902	30.6	PADIN 45	79	4902	30.6	231	252
200 kN				145.8				40.8				40.8		
300 kN	64 X 4	59.7	2799	107.2	SUPOR 64	99	7698	39	PADIN 64	99	7698	39	312	334
500 kN				178.6				65				65		
0.75 MN	64X4	59.7	2799	268	SUPOR 64	99	7698	97	PADIN 64	99	7698	97	387	409
1 MN				357	SUPOR 64E	114	10207	98	PADIN 64E	129	13070	76.5	398	423
0.75 MN	90 X 4	85.7	5768	130	SUPOR 90	129	13070	57.4	PADIN 100	129	13070	57.4	402	427
1 MN				173.4				76.5				76.5		
1.5 MN				260.1				114.8				114.8		
2 MN	110X4	105	8775	228	SUPOR 110	195	29865	67	PADIN 110E	195	29865	67	520	571
3 MN				341				100.5				100.5		
2 MN	125 X 4	120.7	11442	174.8	SUPOR 125A	158	19607	102	PADIN 125A	158	19607	102	505	530
3 MN				262.2	SUPOR 125B	195	29865	100.5	PADIN 125B	195	29865	100.5	520	565
5 MN	160 X 6	153.5	18506	270.2	SUPOR 160	248	48305	103.5	PADIN 160	248	48305	103.5	646	706
7.5 MN	200 X 6	193.5	29407	255	SUPOR 200A	308	74506	100.7	PADIN 200A	308	74506	100.7	745	812
10 MN				340.1	SUPOR 200B	353	97868	102.2	PADIN 200B	353	97868	102.2	770	860
15 MN	250 X 6	243.5	46568	322.1	SUPOR 250A	438	150674	100	PADIN 250	438	150674	100	930	1010
20 MN	330 X 6	323.5	82194	243.3	SUPOR 330	503	198713	101	PADIN 365	503	198713	101	1105	1185

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