

5105-ISO

HIGH-CAPACITY STANDARD REFERENCE FORCE TRANSDUCERS IN TENSION AND COMPRESSION

Standard reference force transducers specially designed according to the ISO 376 standard (classes 1, 0,5 and 00).



Model 5105



Features

- o Wide range of capacities (up to 50 MN)
- o Complete range of load accessories
- o Tension and / or compression (universal)
- o Protection class: IP65
- o Material: alloy steel (stainless steel available on request)
- o Cable length: see drawing table - CL (other lengths available on request)

Most popular options



Application(s) SENSY's load cells 5105-ISO are perfectly designed for the following applications:

- Calibration of testing machines according to ISO 7500.

Note: this standard reference force transducer covers the calibration of standard force measurement instruments used for static verification of uniaxial testing machines.

Capacities

5105-ISO: 200 - 300 - 500 kN
(0.75) - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - (40) - (50) MN

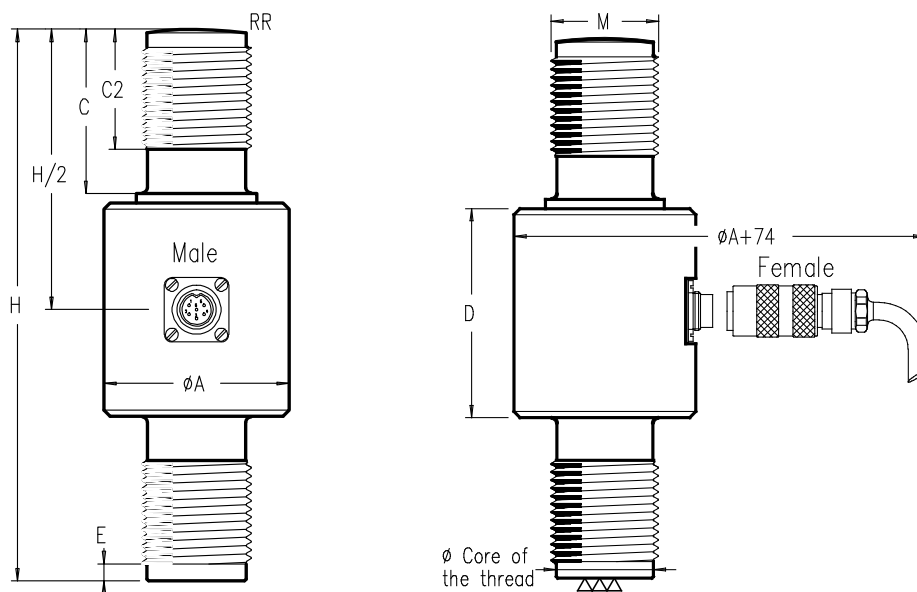
Specifications	1	05	00	
Relative reversibility error	<± 0.3	<± 0.15	<± 0.07	% M.V.**
Relative repeatability error with rotation	<± 0.2	<± 0.1	<± 0.05	% M.V.**
Relative repeatability error without rotation	<± 0.1	<± 0.05	<± 0.025	% M.V.**
Stabilization time after power excitation supply	200...600	200...600	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
Compensated temperature range	-10...+45	-10...+45	-10...+45	°C
Service temperature range	-25...+70	-25...+70	-25...+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	mVV
Nominal sensitivity	1.5	1.5	1.5	mV/V
Input resistance	350 or 700 ± 2	350 or 700 ± 2	350 or 700 ± 2	ohm(s)
Output resistance	350 or 700 ± 2	350 or 700 ± 2	350 or 700 ± 2	ohm(s)
Insulation resistance (50 V)	> 5000	> 5000	> 5000	Mohm(s)
Reference excitation voltage	10	10	10	VDC
Permissible nominal range of excitation voltage	3...12	3...12	3...12	VDC
Safe load limit	110	110	110	% F.S.*
Breaking load	>300	>300	>300	% F.S.*

* : Full Scale of the force transducer.

** : M.V. is the measured value. The mentioned values are only valid if M.V. >= 10 % of full scale.

Specifications subject to change without notice.

5105-ISO > STANDARD DIMENSIONS



Ref. Item*	Capacities	Ø A	C	C2	D	E	H	RR	CL (m)	M	H1	H2	Max. Deflexion (mm)	Weight (kg)
510x-ISO-C	200 kN	75	49	44	87	4	190	350	6	M45x3	398	510	0.14-0.16	3.65
510x-ISO-D	300 - 750 kN	88.5	69	65	119	5	265	400	6	M64x4	560	740	0.19-0.25	9.8
510x-ISO-E	0.75 - 1.5 MN	111	95	85	145	5	340	400	6	M90x4**	/	/	0.30-0.42	21
510x-ISO-F	2 MN	150	128	128	165	7	430	600	6	M110x4	/	/	0.35-0.65	38
510x-ISO-G	2 - 3 MN	150	128	128	165	7	430	600	6	M125x4	/	/	0.35-0.65	38
510x-ISO-H	5 MN	180	162	158	180	8	520	800	6	M160x6	/	/	0.73	87
510x-ISO-I	7.5 - 10 MN	220	185	185	210	10	590	1000	6	M200x6	/	/	0.83	151
510x-ISO-J	10 MN	270	279	279	237	25.4x30°	795	1000	6	Stub Acme 9"-1"	/	/	1.23	270
510x-ISO-K	15 MN	280	230	230	230	10	710	1200	12	M250x6	/	/	1	280
510x-ISO-L	20 MN	360	380	380	320	36x30°	1080	1500	12	TR 330x24	/	/	1.7	700
510x-ISO-M	30 MN	450	460	460	540	36x30°	1460	2000	12	TR 400x24	/	/	2.26	1420
-	40 - 50 MN	According to customer's design specifications												

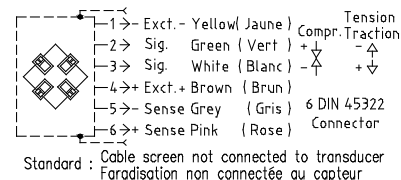
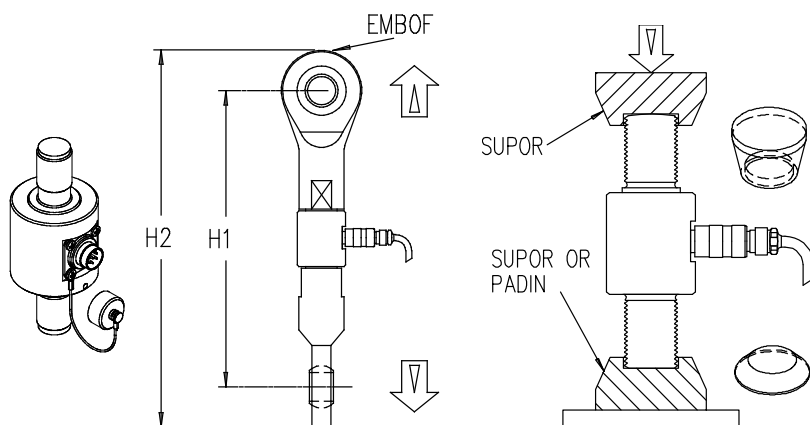
*x=Material: 5100-ISO - stainless steel; 5105-ISO - nickel-plated steel

→ Other capacities and dimensions available on request

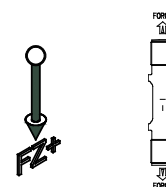
Dimensions in mm

Accessories

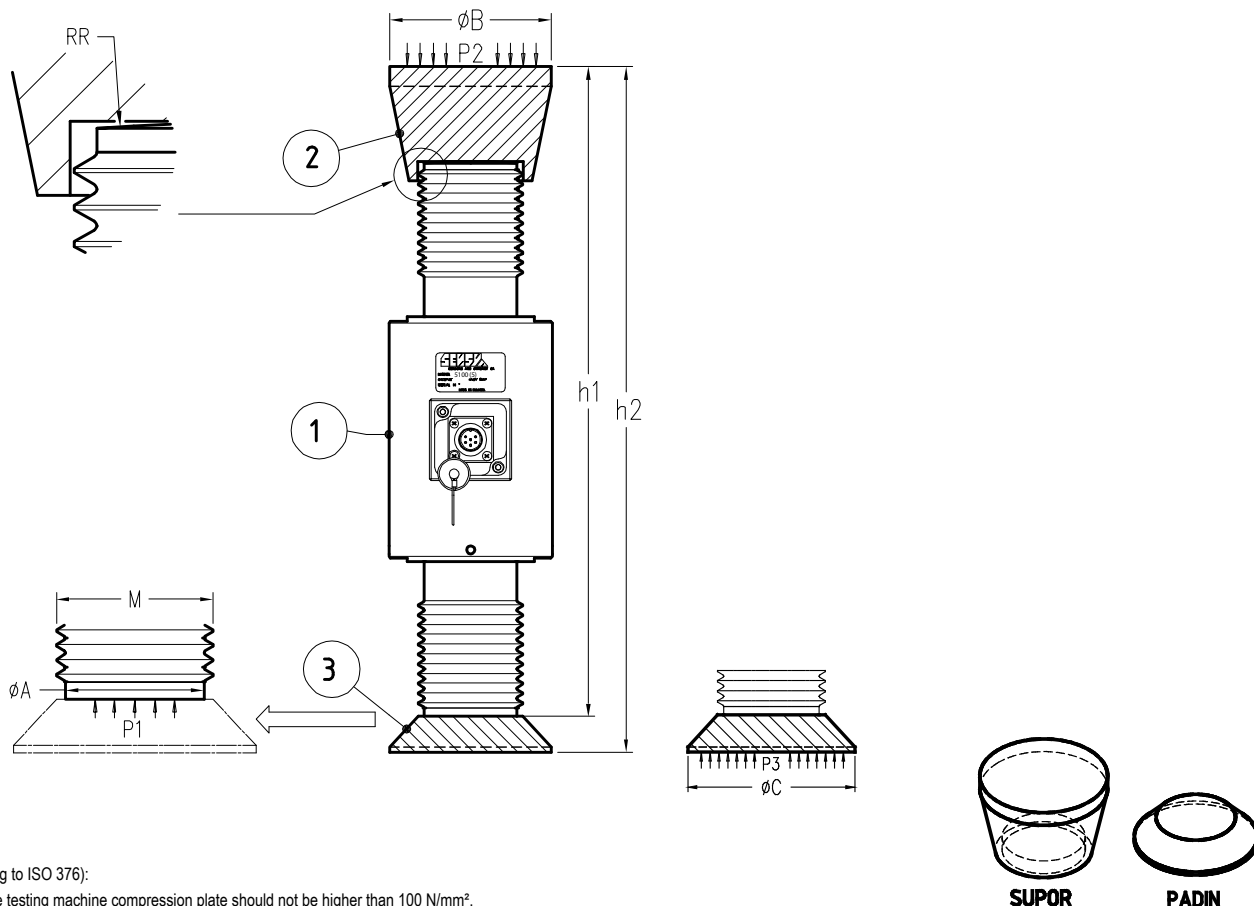
Wiring



Load direction



5105-ISO > CHOICE OF LOADING PADS



Principles (according to ISO 376):

The pressure on the testing machine compression plate should not be higher than 100 N/mm².

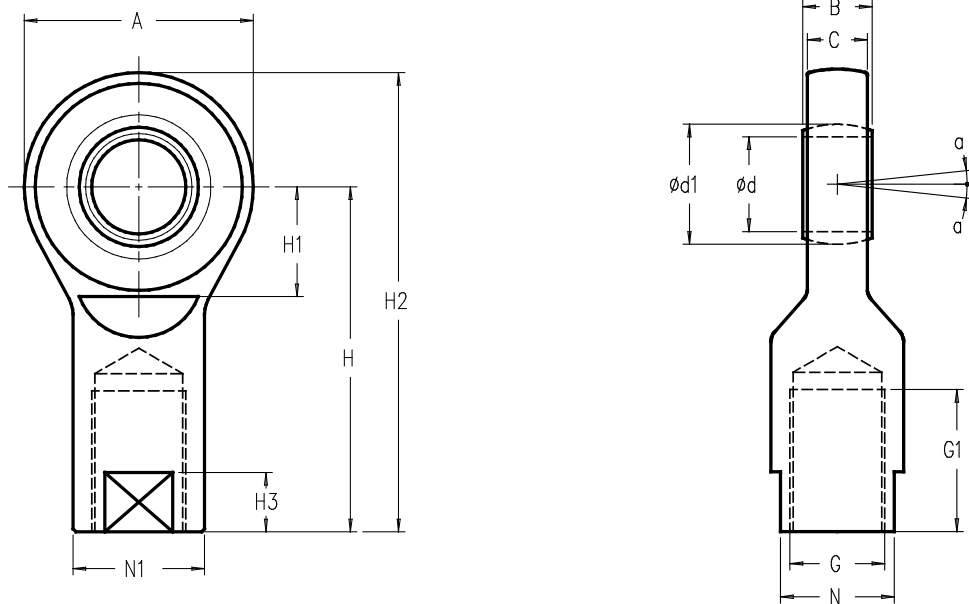
If necessary intermediate plates "PADIN"(3) should be chosen and installed.

Ref. Item	Capacities ①	M	ØA	Section ØA mm ²	Pressure P1 N/mm ²	ØB	Section ØB mm ²	Pressure P2 N/mm ²	ØC	Section ØC mm ²	Pressure P3 N/mm ²	h1	h2	Total weight (kg)	ACCESSORIES	
															SUPOR ②	PADIN ③
510x-ISO-C	200 kN	45x3	41.8	1372	146	79	4902	41	79	4902	41	231	252	5.9	SUPOR-45	PADIN-45
510x-ISO-D	300 kN	64x4	59.7	2799	107	99	7698	39	99	7698	39	312	334	14	SUPOR-64	PADIN-64
510x-ISO-D	500 kN	64x4	59.7	2799	179	99	7698	65	99	7698	65	312	334	14	SUPOR-64	PADIN-64
510x-ISO-D	0.75 MN	64x4	59.7	2799	268	99	7698	97	99	7698	97	387	409	25	SUPOR-64	PADIN-64
510x-ISO-E	0.75 MN	90x4	85.7	5768	130	129	13070	57	129	13070	57	402	427	30	SUPOR-90	PADIN-100A
510x-ISO-E	1 MN	90x4	85.7	5768	173	129	13070	77	129	13070	77	402	427	30	SUPOR-90	PADIN-100A
510x-ISO-E	1.5 MN	90x4	85.7	5768	260	129	13070	115	129	13070	115	402	427	30	SUPOR-90	PADIN-100A
510x-ISO-F	2 MN	110x4	105	8775	228	195	29865	67	195	29865	67	520	571	46	SUPOR-110	PADIN-110E
510x-ISO-F	3 MN	110x4	105	8775	341	195	29865	101	195	29865	101	520	571	46	SUPOR-110	PADIN-110E
510x-ISO-G	2 MN	125x4	121	11442	175	158	19607	102	158	19607	102	505	530	53	SUPOR-125A	PADIN-125A
510x-ISO-G	3 MN	125x4	121	11442	262	195	29865	101	195	29865	101	520	565	66	SUPOR-125B	PADIN-125B
510x-ISO-H	5 MN	160x6	154	18506	270	248	48305	104	248	48305	104	646	706	105	SUPOR-160	PADIN-160
510x-ISO-I	7.5 MN	200x6	194	29407	255	308	74506	101	308	74506	101	745	812	257	SUPOR-200A	PADIN-200A
510x-ISO-I	10 MN	200x6	194	29407	340	353	97868	102	353	97868	102	770	860	307	SUPOR-200B	PADIN-200B
510x-ISO-J	10 MN	Acme 9"	199	31187	321	353	97868	102	353	97868	102	972	1052	438	SUPOR-230	PADIN-230
510x-ISO-K	15 MN	250x6	244	46568	322	438	150674	100	438	150674	100	930	1010	559	SUPOR-250A	PADIN-250
510x-ISO-L	20 MN	TR330x24	288	65339	306	503	198713	102	503	198713	102	1332	1447	1171	SUPOR-330A	PADIN-330A
510x-ISO-M	30 MN	TR400x24	358	100902	297	594	277117	109	594	277117	109	1757	1877	2216	SUPOR-400A	PADIN-400A
510x-ISO-X	40 - 50 MN														According to customer's design specifications	

→ Other capacities and dimensions available on request

Dimensions in mm

EMBOF > STANDARD DIMENSIONS



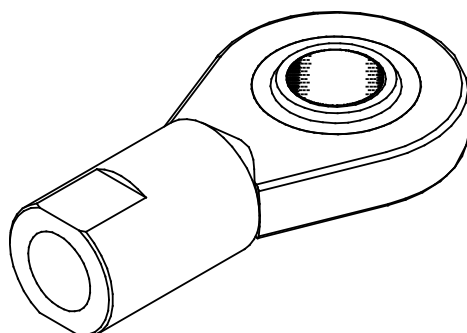
Ref. Item*	Dimension G	Capacities (N)		Ød	A	B	C	H	a (degree)	Ød1	G1	H1	H2	H3	N	N1	Weight (kg)
		Dynamic	Static														
EMBOF-M6-BA	M6	3600	9000	6	21	6	4.3	30	13	10	11	10.5	40.5	8	9	11	0.017
EMBOF-M8-BA	M8	5850	14600	8	24	8	6	36	15	13	15	12	48	10	11	13	0.034
EMBOF-M10-BA	M10	8560	21600	10	29	9	7	43	12	16	15	14	57.5	11	14	16	0.060
EMBOF-M12-BA	M12	11400	28500	12	34	10	8	50	10	18	18	17.5	67	12	17	19	0.095
EMBOF-M16-BA	M16	22400	52000	17	46	14	11	67	10	25	24	23	90	15	22	25	0.23
EMBOF-M24x2-BA	M24x2	51000	102000	25	64	20	17	94	7	35.5	36	32	126	18	30	35	0.62
EMBOF-M30x2-BA	M30x2	65500	134000	30	73	22	19	110	6	40.7	45	35	146.5	19	36	42	0.97
EMBOF-M36x3-PTFE	M36x3	112000	143000	35	82	25	21	125	6	47	60	42	166	15	50	47	1.4
EMBOF-M45x3-PTFE	M45x3	220000	280000	50	112	35	30	160	6	66	68	60	216	20	65	62	3.55
EMBOF-M56x4-PTFE	M56x4	440000	630000	70	160	49	42	200	6	92	80	84	280	20	85	80	8.3
EMBOF-M64x4-PTFE	M64x4	570000	780000	80	180	55	47	230	6	105	85	100	320	25	100	95	13

* Material: BA - bronze auto-lubricated; PTFE - polytetrafluoroethylene

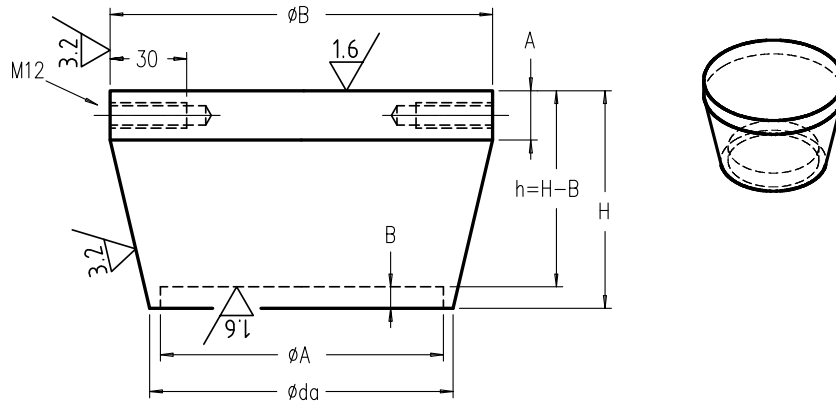
→ Other capacities and dimensions available on request

Dimensions in mm

Other view



SUPOR > STANDARD DIMENSIONS

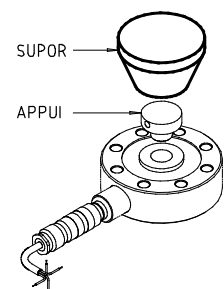
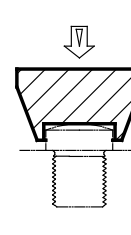
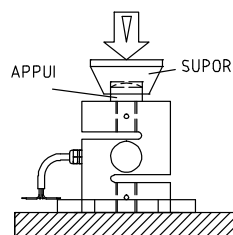
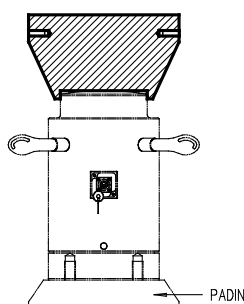
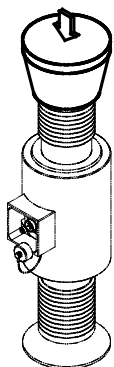


Ref. Item	Types	ØA	ØB	Øda	A	B	H	h	M12 L=30 (degree)	Weight (kg)
SUPOR-12	12	12	34	20	7	4	23	19	NO	0.12
SUPOR-20	20	20	49	30	8	5	31	26	NO	0.33
SUPOR-30	30	30	64	40	9	6	41	35	NO	0.74
SUPOR-36	36	36	69	46	10	7	46	39	NO	0.98
SUPOR-45	45	45	79	56	11	12	53	41	NO	1.5
SUPOR-56	56	56	79	66	12	8	48	40	NO	1.5
SUPOR-64	64	64	99	75	12	17	64	47	NO	2.8
SUPOR-64E	64E	64	114	75	12	17	75	58	NO	4.14
SUPOR-69	69	69	79	75	12	12	52	40	NO	1.6
SUPOR-90	90	90	129	100	15	17	79	62	NO	6
SUPOR-90B	90B	90	164	100	15	17	109	92	NO	12.2
SUPOR-110	110	110	195	135	20	19	109	90	2x to 180	18.7
SUPOR-125A	125A	125	158	135	20	19	94	75	2x to 180	11.3
SUPOR-125B	125B	125	195	135	20	19	109	90	2x to 180	18.3
SUPOR-160	160	160	248	±170	30	20	146	126	2x to 180	40
SUPOR-200A	200A	200	308	±210	30	20	175	155	2x to 180	73
SUPOR-200B	200B	200	353	±210	30	20	200	180	4x to 90	103
SUPOR-230	230	230	353	±270	50	35	211.5	176.5	4x to 90	125
SUPOR-250A	250A	250	438	±290	40	30	250	220	6x to 60	209
SUPOR-250B	250B	250	503	±290	40	30	285	255	6x to 60	294
SUPOR-300A	300A	330	594	±340	50	40	337	297	6x to 60	481
SUPOR-330A	330A	330	503	±370	50	50	301.5	251.5	6x to 60	341
SUPOR-360A	360A	360	694	±401	100	50	397	347	6x M24 / 360	818
SUPOR-400A	400A	400	594	±440	50	55	352	297	6x to 60	555
SUPOR-430A	430A	430	795	±470	±100	50	448	398	6x M30 / 360	1209

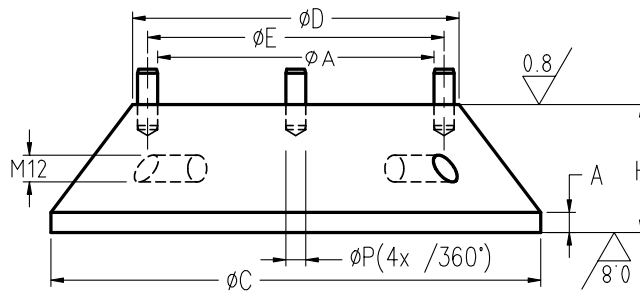
→ Other capacities and dimensions available on request

Dimensions in mm

Other views



↳ PADIN > STANDARD DIMENSIONS



Ref. Item	Types	ØA	ØC	ØD	ØE	ØP	A	H	M12	Weight (kg)
PADIN-24	24	25	59	36	29	4	3	22	/	0.34
PADIN-30	30	31	64	40	35	4	3	22	/	0.4
PADIN-42	42	43	74	52	47	4	3	20	/	0.53
PADIN-45	45	46	79	56	50	4	3	21	/	0.64
PADIN-64	64	65	99	75	69	4	3	22	/	1.1
PADIN-64E	64E	65	129	75	69	4	4	25	/	1.8
PADIN-100A	100A	91	129	110	95	4	4	25	/	2.3
PADIN-100B	100B	100	129	110	104	4	4	25	/	2.3
PADIN-110E	110E	111	195	130	119	8	8	51	2x / 360°	9.4
PADIN-125AA	125AA	120	158	144	128	8	6	25	/	3.7
PADIN-125AB	125AB	126	158	144	134	8	6	25	/	3.7
PADIN-125B	125B	126	195	150	134	8	8	45	2x / 360°	9
PADIN-160	160	162	248	180	170	8	11	60	2x / 360°	18.6
PADIN-200A	200A	202	308	235	214	12	12	67	2x / 360°	32.9
PADIN-200B	200B	202	353	235	214	12	12	90	4x / 360°	52.5
PADIN-210	210	207	248	225	215	8	6	30	2x / 360°	11
PADIN-230	230	232	353	262	244	12	8	80	2x / 360°	50
PADIN-250	250	252	438	280	264	12	10	80	4x / 360°	69.75
PADIN-300	300	296	353	325	308	12	6	35	2x / 360°	25.8
PADIN-330	330	333	438	370	349	16	8	60	4x / 360°	62
PADIN-330A	330A	333	503	370	349	16	8	115	4x / 360°	140
PADIN-365	365	367	503	400	379	12	8	80	4x / 360°	105
PADIN-400A	400A	403	594	448	423	20	8	120	4x / 360°	205
PADIN-445	445	448	594	485	464	16	8	85	4x / 360°	156
PADIN-495	495	501	694	548	521	20	8	110	4x / 360°	266
PADIN-540	540	546	795	613	576	30	8	130	4x M16 / 360°	405

→ Other capacities and dimensions available on request

Dimensions in mm

Other views

