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Serving the Automation & Control Industry since 1984



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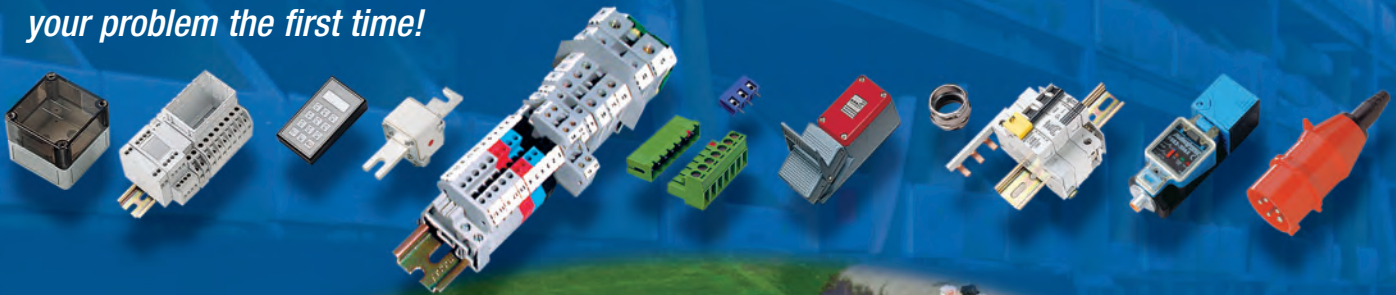


**Liquid Tight
Strain Reliefs**

Altech Corp.®

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

With experienced Product Engineers and Customer Service personnel, Altech provides solutions to your most pressing application challenges. All with one thought in mind - *to ensure that we solve your problem the first time!*



Quality Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.



Table of Contents

key words:
liquid tight strain relief
cable gland
cord grip



Standard Straight-Through
Polyamide
PG, Metric, NPT4



Standard Straight-Through
Nickel-Plated Brass
PG, Metric, NPT5



Standard Straight-Through
Stainless Steel
Metric6



**Flathead and Multi Conductor
Sealing Inserts**7



Industrial
Polyamide
Straight-Through
PG, Metric8



Flat Cable
PG, Metric9



Multi-Conductor
PG10
Metric11



PVDF
Straight-Through
Metric12



Nickel-Plated Brass
Straight-Through
PG, Metric13



Flat Cable
PG, Metric14
Multi-Conductor
PG15
Metric16



Atex Polyamide
PG, Metric17-18

EMC Nickel-Plated Brass
PG, Metric19-20



Traction Relief
Nickel-Plated Brass
PG, Metric21



Polyamide
PG, Metric, NPT22



Once According to DIN 46320
Polystyrene
Straight-Through
PG23



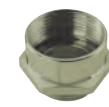
Locknuts
Polyamide
PG, Metric, NPT24
Stainless Steel
Metric24
Nickel-Plated Brass
PG, Metric25



Reducer
Polyamide26
Nickel-Plated Brass27



Enlarger
Polyamide
PG, Metric28
Nickel-Plated Brass
PG, Metric29



Adapter
Nickel-Plated Brass30-33



Plugs
Polyamide
PG, Metric34
Nickel-Plated Brass
PG, Metric34



O-Rings
PG, Metric35



Seal Rings
PG, Metric, NPT35



POLYFLEX® Conduit36



Conduit Glands
Straight-Through37



90°38

**Conduit O-Rings
and Clamping Clips**39

Technical Annex40-43

Cable Gland *Standard Straight-Through - Polyamide*

key words:
liquid tight strain relief
cable gland
cord grip

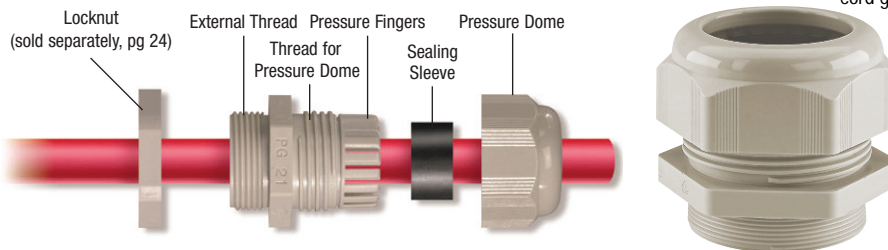
Material:

- Body: Polyamide 6
- Seal: Neoprene

Technical properties:

- Maximum strain relief through clamping range
- IP68 achieved without seal rings (PG and metric only)¹
- Trapezoidal thread with high torque guarantees tight and permanent fit of the dome nut
- Gas tight and watertight

Applications: Machines and devices



PG Thread

Outer thread	Clamping range mm	Cat. No. Light Grey	Cat. No. Black	Std. Pk.
PG 7	1.5-5	5309 107	5309 207	50
PG 7	2.5-6.5	5308 707	5308 507	50
PG 9	1.5-6	5309 109	5309 209	50
PG 9	2.5-8	5308 709	5308 509	50
PG 11	2-7	5309 111	5309 211	50
PG 11	3.5-10	5308 711	5308 511	50
PG 13.5	3-9	5309 113	5309 213	50
PG 13.5	5-12	5308 713	5308 513	50
PG 16	5-12	5309 116	5309 216	50
PG 16	7-14	5308 716	5308 516	50
PG 21	7-16	5309 121	5309 221	25
PG 21	9-18	5308 721	5308 521	25
PG 29	11-21	5309 129	5309 229	20
PG 29	14-25	5308 729	5308 529	20
PG 36	13-26	5309 136	5309 236	10
PG 36	18-32	5308 736	5308 536	10
PG 42	17-31	5309 142	5309 242	5
PG 42	24-38.5	5308 737	5308 537	5
PG 48	26-39	5309 148	5309 248	5
PG 48	35-48	5308 738	5308 538	5



Temperature Range
-40 to 100°C
(-40 to 212°F)

Thread Size	Dimensions					
	H mm	E mm	L mm	ØC mm	ØP mm	ØThread mm
PG7	15	8	32	6.7	6.8	12.5
PG9	19	8	35	8.5	8.7	15.2
PG11	22	8	37	10.5	10.5	18.6
PG13.5	24	9	39	12.5	12.5	20.4
PG16	27	10	43	14.5	14.5	22.5
PG21	33	11	50	18.5	18.5	28.3
PG29	42	11	53	25.5	25.5	37.0
PG36	53	13	65	32.5	32.5	47.0
PG42	60	13	68	39.0	39.0	54.0
PG48	70	14	70	48.5	48.5	59.3

NPT Thread

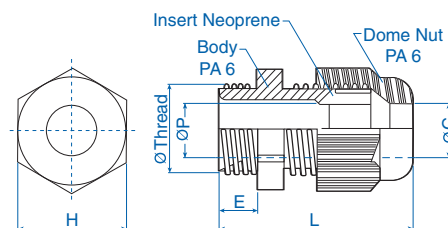
NPT 3/8"	1.5-6	5308 904	5308 924	50
NPT 3/8"	2.5-8	5308 900	5308 920	50
NPT 1/2"	3-9	5308 905	5308 925	50
NPT 1/2"	5-12	5308 901	5308 921	50
NPT 3/4"	7-16	5308 906	5308 926	20
NPT 3/4"	9-18	5308 902	5308 922	20
NPT 1"	11-21	5308 907	5308 927	20
NPT 1"	14-25	5308 903	5308 923	20

NPT 3/8	19	11	38	8.5	8.7	17.1
NPT 1/2	24	14	44	12.5	12.5	21.2
NPT 3/4	33	15	54	18.5	18.5	26.7
NPT 1	42	18	60	25.5	25.5	33.3

M12x1.5	15	8	32	6.7	6.8	12.0
M16x1.5/9	19	10	37	8.5	8.5	16.0
M16x1.5/11	22	10	39	10.5	10.5	16.0
M20x1.5/13	24	10	40	12.5	12.5	20.0
M20x1.5/16	27	10	43	14.5	14.5	20.0
M25x1.5/16	27	10	45	14.5	14.5	25.0
M25x1.5/21	33	10	49	18.5	18.5	25.0
M32x1.5	42	10	52	25.5	25.5	32.0
M40x1.5	53	10	62	32.5	32.5	40.0
M50x1.5	60	12	67	39.0	39.0	50.0
M63x1.5	70	12	68	48.5	48.5	63.0

Metric Thread*

M 12 x 1.5	1.5-5	5309 612	5309 712	50
M 12 x 1.5	2.5-6.5	5308 950	5308 940	50
M 16 x 1.5/9	1.5-6	5309 615	5309 715	50
M 16 x 1.5/11	2-7	5309 616	5309 716	50
M 16 x 1.5/9	2.5-8	5308 958	5308 948	50
M 16 x 1.5/11	3.5-10	5308 951	5308 941	50
M 20 x 1.5/13	3-9	5309 619	5309 719	50
M 20 x 1.5/16	5-12	5309 620	5309 720	50
M 20 x 1.5/13	5-12	5308 959	5308 949	50
M 20 x 1.5/16	7-14	5308 952	5308 942	50
M 25 x 1.5/16	5-12	5309 624	5309 724	50
M 25 x 1.5/21	7-16	5309 625	5309 725	25
M 25 x 1.5/16	7-14	5308 960	5308 962	50
M 25 x 1.5/21	9-18	5308 953	5308 943	25
M 32 x 1.5	11-21	5309 632	5309 732	20
M 32 x 1.5	14-25	5308 954	5308 944	20
M 40 x 1.5	13-26	5309 640	5309 740	10
M 40 x 1.5	18-32	5308 955	5308 945	10
M 50 x 1.5	17-31	5309 650	5309 750	5
M 50 x 1.5	24-38.5	5308 956	5308 946	5
M 63 x 1.5	26-39	5309 663	5309 763	5
M 63 x 1.5	35-48	5308 957	5308 947	5



This is one of our most popular series and is usually kept in stock.

* Extended thread available consult Altech. ¹ Seal rings for NPT sold separately, see page 35.

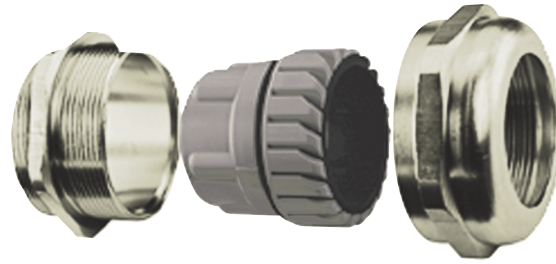
Locknuts sold separately, see page 24.

Material:

- Body: Nickel-plated brass
- Seal: Neoprene
- Clamping insert: Polyamide 6
- Sealing ring for outer thread: Nitril

Technical properties:

- Seal rings included for PG and Metric sizes
- Maximum strain relief through clamp range
- Gas tight and watertight



PG Thread*

Outer thread	Clamping range mm	Cat. No.	Std. Pk.
PG 7	1.5-5	4220351	50
PG 7	2.5-6.5	4220307	50
PG 9	2.5-7	4220352	50
PG 9	4-9.5	4220309	50
PG 11	3-8.5	4220353	50
PG 11	6-11.5	4220311	50
PG 13.5	4-10	4220354	50
PG 13.5	7-13	4220313	50
PG 16	5-12	4220355	50
PG 16	8-15	4220316	50
PG 21	8-16	4220356	20
PG 21	11-19	4220321	20
PG 29	11-21	4220357	20
PG 29	16-26	4220329	20
PG 36	16-28	4220358	10
PG 36	22-34.5	4220336	10
PG 42	22-34	4220359	5
PG 42	27-40	4220342	5
PG 48	28-40	4220360	5
PG 48	35-48	4220348	5



Temperature Range
-40 to 100°C (-40 to 212°F)

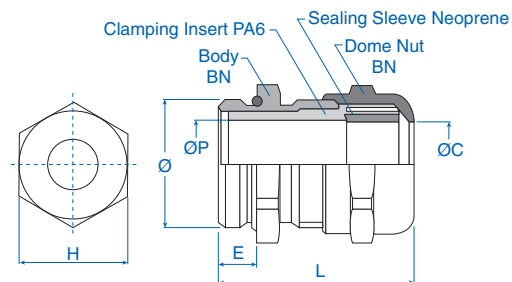
Thread Size	Dimensions					
	H mm	E mm	L mm	ØC mm	ØP mm	ØThread mm
PG7	14	5	25	6	6.6	12.5
PG9	17	6	29	9.7	10	15.2
PG11	20	6	30	11.7	12	18.6
PG13.5	22	6.5	32.5	13.2	13.5	20.4
PG16	24	6.5	34	15.2	15.5	22.5
PG21	30	7	35	19.5	19.5	28.3
PG29	40	8	38	26	26.5	37
PG36	50	9	42	34.5	35	47
PG42	58	10	47	40.5	41	54
PG48	65	10	54	48.5	50	59.3
NPT 3/8"	18	15	38	9.7	10	17.1
NPT 1/2"	23	20	46	13.2	13.5	21.2
NPT 3/4"	28	20	48	16.2	16.5	26.7
NPT 1"	36	25	55	21.5	22	33.3
M12x1.5	14	5	25	6.6	6.6	12
M16x1.5	17	5	28	9.7	10	16
M20x1.5	22	6	32	13.2	13.5	20
M25x1.5	27	7	35	16.2	16.5	25
M32x1.5	34	8	38	21.5	22	32
M40x1.5	42	8	41	27.5	28	40
M50x1.5	55	9	46	35.5	36	50
M63x1.5	65	10	54	48.5	50	63

NPT Thread

Outer thread	Clamping range mm	Cat. No.	Std. Pk.
NPT 3/8"	2.5-7	4220810	50
NPT 3/8"	4-9.5	4220800	50
NPT 1/2"	4-10	4220811	50
NPT 1/2"	7-13	4220801	50
NPT 3/4"	5-13	4220812	20
NPT 3/4"	8-16	4220802	20
NPT 1"	7-17	4220813	5
NPT 1"	11-21	4220803	5

Metric Thread*

Outer thread	Clamping range mm	Cat. No.	Std. Pk.
M 12 x 1.5	1.5-5	4220712	100
M 12 x 1.5	2.5-6.5	4220612	100
M 16 x 1.5	2.5-7	4220716	50
M 16 x 1.5	4-9.5	4220616	50
M 20 x 1.5	4-10	4220720	50
M 20 x 1.5	7-13	4220620	50
M 25 x 1.5	5-13	4220725	25
M 25 x 1.5	8-16	4220625	25
M 32 x 1.5	7-17	4220732	20
M 32 x 1.5	11-21	4220632	20
M 40 x 1.5	10-22	4220740	10
M 40 x 1.5	15-27	4220640	10
M 50 x 1.5	17-29	4220750	5
M 50 x 1.5	22-35	4220650	5
M 63 x 1.5	28-40	4220763	5
M 63 x 1.5	35-48	4220663	5



This is one of our most popular series and is usually kept in stock.

* Extended thread available consult Altech

Locknuts sold separately, see page 25.

Cable Gland *Standard Straight-Through - Stainless Steel*

Material:

- Body: Stainless Steel 1.4404 / INOX 316L
- Seal: Neoprene
- Clamping insert: Polyamide 6
- Sealing ring for outer thread: Nitril

Technical properties:

- Seal rings included
- Maximum strain relief through clamp range
- Gas tight- and watertight



Metric Thread

M 12 x 1.5	1.5-5	4220860	100
M 12 x 1.5	4.5-6.5	4220850	100
M 16 x 1.5	2.5-7	4220861	50
M 16 x 1.5	5-9.5	4220851	50
M 20 x 1.5	4-10	4220862	50
M 20 x 1.5	8-13	4220852	50
M 25 x 1.5	5-13	4220863	25
M 25 x 1.5	9-16	4220853	25
M 32 x 1.5	7-17	4220864	20
M 32 x 1.5	12-21	4220854	20
M 40 x 1.5	10-22	4220865	10
M 40 x 1.5	16-27	4220855	10
M 50 x 1.5	17-29	4220866	5
M 50 x 1.5	23-35	4220856	5
M 63 x 1.5	28-40	4220867	5
M 63 x 1.5	36-48	4220857	5

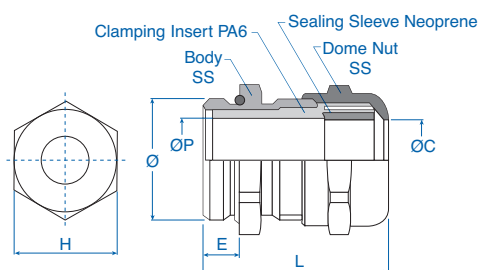
PROTECTION
IP68
RATING

Temperature Range

-25 to 100°C
(-13 to 212°F)

Dimensions

Thread Size	H mm	E mm	L mm	ØC mm	ØP mm	ØThread mm
M12x1.5	14	5	25	6.6	6.6	12
M16x1.5	17	5	28	9.7	10	16
M20x1.5	22	6	32	13.2	13.5	20
M25x1.5	27	7	35	16.2	16.5	25
M32x1.5	34	8	38	21.5	22	32
M40x1.5	42	8	41	27.5	28	40
M50x1.5	55	9	46	35.5	36	50
M63x1.5	65	10	54	48.5	50	63



Locknuts sold separately, see page 24.

Flat Head Sealing

Material:

- EPDM, black

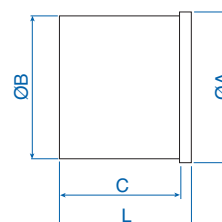
Features:

- For sealing cable gland entries when cables are not being installed.
- Insert into cable gland and tighten gland to seal.

Suitable for	ØA mm	ØB mm	C mm	L mm	Cat. No.	Std. Pk.
PG 9, PG 11, M 16, NPT 3/8	11.0	8.0	17.0	20.0	7217701	100
PG 13.5, PG 16, M 20, NPT 1/2	15.0	12.0	18.0	21.0	7217702	100
PG 21, M 25, NPT 3/4	18.0	15.0	19.0	22.0	7217703	100



Temperature Range
-40 to 130°C (-40 to 266°F)



Multi-Conductor Sealing

Material:

- Neoprene, black

Features:

- Standard Straight-Through Polyamide Series
- Delivered separate, replaces sealing sleeve provided with gland

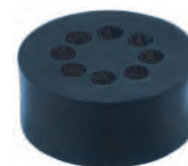
Suitable for	Hole Quantity	Hole Ø mm	ØA mm	B mm	Cat. No.	Std. Pk.
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Multi-Conductor Seal

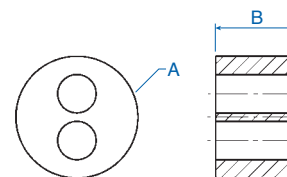
PG 11/ M 16	2	4.0	13.0	8.0	8114200	100
PG 16/ M 20	2	5.0	17.0	10.0	8114203	100
PG 16/ M 20	2	6.0	17.0	10.0	8114201	100
PG 16/ M 20	4	5.0	17.0	10.0	8114202	100
PG 21/ M 25	2	6.0	22.5	11.5	8114204	100
PG 21/ M 25	2	8.0	22.5	11.5	8114208	100
PG 21/ M 25	3	7.0	22.5	11.5	8114205	100
PG 21/ M 25	4	6.5	22.5	11.5	8114206	100
PG 21/ M 25	6	4.0	22.5	11.5	8114207	100
PG 29/ M 32	4	6.0	30.5	13.0	8114212	100
PG 29/ M 32	4	8.0	30.5	13.0	8114209	100
PG 29/ M 32	6	6.0	30.5	13.0	8114210	100
PG 29/ M 32	8	4.0	30.5	13.0	8114211	100

Solid Sealing without holes

PG 11/ M 16	—	—	13.0	8.0	8114250	100
PG 16/ M 20	—	—	17.0	10.0	8114251	100
PG 21/ M 25	—	—	22.5	11.5	8114252	100
PG 29/ M 32	—	—	30.5	13.0	8114253	100



Temperature Range
-25 to 100°C (-13 to 212°F)



This is one of our most popular series and is usually kept in stock.

Cable Gland *Industrial Straight-Through - Polyamide*

Material:

- Body: Polyamide PA 6
25 % Glass-fiber Reinforced
- Seal: Tefabloc
- ECA clamping ring: Polycarbonate

Characteristics:

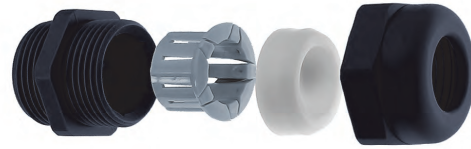
- PG/metric thread
- ECA clamping ring
- Extended thread available

Technical properties:

- Strain relief through clamping ring
- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations

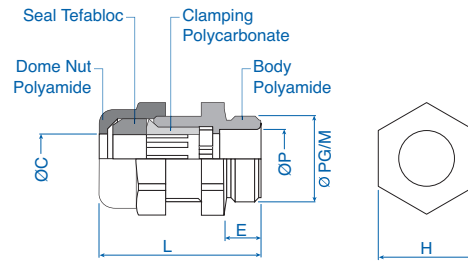


ECA Clamping Ring Polyamide

Outer thread	Clamping range mm	Cat. No. Light Grey	Cat. No. Black	Std. Pk.
PG				
PG 7	3-6	5313610	5313620	50
PG 9	5-8	5313611	5313621	50
PG 11	6-10	5313612	5313622	50
PG 13.5	8-12	5313613	5313623	50
PG 16	10-14	5313614	5313624	50
PG 21	11.5-18	5313615	5313625	20
PG 29	15-24	5313616	5313626	20
Metric				
M 16 x 1.5	5-8	5313640	5313650	50
M 20 x 1.5/13	8-12	5313641	5313651	50
M 20 x 1.5/16	10-14	5313644	5313654	50
M 25 x 1.5	11.5-18	5313642	5313652	20
M 32 x 1.5	15-24	5313643	5313653	20



Temperature Range
-30 to 120°C
(-22 to 248°F)



Thread Size	Dimensions					
	H mm	E mm	L mm	ØC mm	ØP mm	ØPG/M mm
PG7	15	8	31	6.5	7.0	12.5
PG9	19	8	32	8.5	9.0	15.2
PG11	22	8	35	11.5	11.0	18.6
PG13.5	24	9	36	12.5	13.5	20.4
PG16	27	10	40	14.5	15.0	22.5
PG21	33	11	44	18.5	19.0	28.3
PG29	42	12	55	25.0	25.0	37.0
M 16x1.5	19	8	32	8.5	9.0	16.0
M 20x1.5/13	24	9	36	12.5	13.5	20.0
M 20x1.5/16	27	9	39	14.5	15.0	20.0
M 25x1.5	33	11	44	18.5	19.0	25.0
M 32x1.5	42	12	55	25.0	25.0	32.0

Locknuts and seal rings sold separately, see pages 24 and 35.

Cable Gland Industrial Flat Cable - Polyamide

Material:

- Body: Polyamide PA 6
25 % Glass-fiber Reinforced
- Seal: Tefabloc

Characteristics:

- PG/metric thread
- Seal for flat cable round, angular, oval

Technical properties:

- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

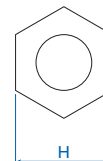
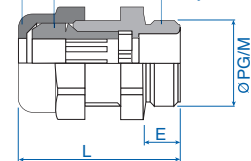
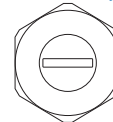
- Machines and devices
- Measuring and control engineering
- Plant installations



Seal Tefabloc

Dome Nut Polyamide

Body Polyamide



Temperature Range
-30 to 120°C (-22 to 248°F)

Flat Cable, Rounded

Flat Cable, Oval

Outer thread	Clamping range mm	Cat. No. Light Grey	Cat. No. Black	Clamping range mm	Cat. No. Light Grey	Cat. No. Black	H mm	E mm	L mm	Std. Pk.
PG										
PG 9	3.5 x 5.5	5320300	5320500				19	8	28	50
PG 11	2.8 x 10.5	5320305	5320505				22	8	30	50
PG 11	3.5 x 9	5320306	5320506				22	8	30	50
PG 11	4 x 6	5320307	5320507				22	8	30	50
PG 13.5	3 x 12	5320310	5320510	5 x 8	5320375	5320575	24	9	30	50
PG 13.5	5 x 11	5320311	5320511	5 x 12	5320376	5320576	24	9	30	50
PG 16	5 x 12	5320315	5320515	5 x 12	5320380	5320580	27	10	33	50
PG 16	5 x 16	5320316	5320516	5 x 15	5320382	5320582	33	10	36	50
PG 16	7.5 x 14	5320317	5320517	5.5 x 8.5	5320381	5320581	27	10	33	50
PG 16				6 x 15	5320383	5320583	33	10	36	50
PG 16	8 x 12*	5320351	5320551	7 x 14	5320384	5320584	27	10	33	50
PG 21	4 x 15*	5320355	5320555				33	11	37	20
PG 21	5 x 17	5320320	5320520	5 x 16	5320385	5320585	33	11	37	20
PG 21	7 x 18	5320321	5320521	7 x 16.5	5320386	5320586	33	11	37	20
PG 21				7 x 20	5320387	5320587	42	11	38	20
PG 21	9 x 15	5320322	5320522				33	11	37	20
PG 29	6 x 26*	5320360	5320560				55	12	50	20
PG 29	6 x 29	5320325	5320525				55	12	50	20
PG 29	7 x 26*	5320361	5320561				55	12	50	20
PG 29	8 x 25	5320326	5320526				42	12	44	20
PG 29	10 x 25	5320327	5320527				42	12	44	20
PG 29	13 x 28	5320328	5320528	10 x 27	5320390	5320590	55	12	50	20
PG 36	5 x 36*	5320365	5320565				55	18	56	20
PG 36	6 x 30	5320330	5320530	6.5 x 32	5320393	5320593	55	18	56	20
PG 36	6 x 36	5320331	5320531				55	18	56	20
PG 36	8 x 30*	5320366	5320566				55	18	56	20
PG 36	8 x 36	5320332	5320532				55	18	56	20
PG 36	11 x 34	5320333	5320533	11 x 35	5320394	5320594	55	18	56	20
PG 36	12 x 35	5320334	5320534				55	18	56	20
PG 42	5.5 x 37	5320370	5320570				65	18	60	20
PG 42	6 x 39	5320371	5320571	6 x 41	5320396	5320596	65	18	60	20
PG 42	10 x 38	5320335	5320535	9 x 38	5320397	5320597	65	18	60	20
PG 42	13 x 35	5320336	5320536				65	18	60	20
PG 42	14 x 37	5320337	5320537				65	18	60	20
PG 48	6.5 x 47	5320342	5320542				70	18	60	20
PG 48	9 x 43	5320343	5320543				70	18	60	20
PG 48	14.5 x 39	5320344	5320544				70	18	60	20
PG 48	15 x 45	5320345	5320545				70	18	60	20
Metric										
M 16 x 1.5	3.5 x 5.5	5320710	5320810				19	8	32	50
M 20 x 1.5	3 x 12	5320715	5320815	5 x 8	5320770	5320870	24	9	36	50
M 20 x 1.5	5 x 11	5320716	5320816	5 x 12	5320771	5320871	24	9	36	50
M 20 x 1.5	5 x 12	5320717	5320817	5.5 x 8.5	5320772	5320872	27	9	39	50
M 20 x 1.5	7.5 x 14	5320718	5320818	7 x 14	5320773	5320873	27	9	39	50
M 20 x 1.5	8 x 12*	5320785	5320885				27	9	39	50
M 25 x 1.5	4 x 15*	5320786	5320886	5 x 15	5320774	5320874	33	11	44	20
M 25 x 1.5	5 x 16	5320720	5320820	5 x 16	5320775	5320875	33	11	44	20
M 25 x 1.5	5 x 17	5320721	5320821	6 x 15	5320776	5320876	33	11	44	20
M 25 x 1.5	7 x 18	5320722	5320822	7 x 16.5	5320777	5320877	33	11	44	20
M 25 x 1.5	9 x 15	5320723	5320823				33	11	44	20
M 32 x 1.5	8 x 25	5320730	5320830	7 x 20	5320780	5320880	42	12	55	20
M 32 x 1.5	10 x 25	5320731	5320831				42	12	55	20

* Flat Cable, angular

Locknuts and seal rings sold separately, see pages 24 and 35.

Cable Gland Industrial Multi-Conductor (PG) - Polyamide

Material:

- Body: Polyamide PA 6
25 % Glass-fiber Reinforced
- Seal: Tefabloc

Characteristics:

- PG thread
- Multi-holed seal inserts

Temperature Range

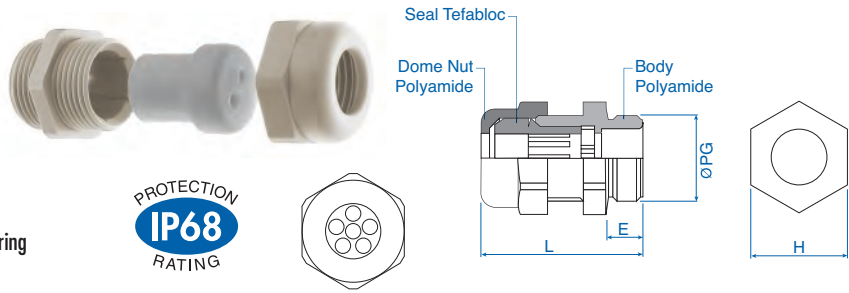
-30 to 120°C
(-22 to 248°F)

Technical properties:

- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations



Outer thread	Hole Quantity	Hole diameter mm	H mm	E mm	L mm	Cat. No. Light Grey	Cat. No. Black	Std. Pk.
PG 7	1	4	15	8	31	5315800	5315600	50
PG 7	1	5	15	8	31	5315801	5315601	50
PG 9	1	5	19	8	32	5315810	5315610	50
PG 9	2	1	19	8	32	5315811	5315611	50
PG 9	2	3	19	8	32	5315812	5315612	50
PG 9	2	3.5	19	8	32	5315813	5315613	50
PG 9	2	4	19	8	32	5315814	5315614	50
PG 9	3	3	19	8	32	5315815	5315615	50
PG 9	4	3	22	8	34	5315816	5315616	50
PG 9	4	4	22	8	34	5315817	5315617	50
PG 11	2	2.3	24	8	35	5315820	5315620	50
PG 11	2	3	24	8	35	5315821	5315621	50
PG 11	2	3.5	24	8	35	5315110	5315500	50
PG 11	2	4	24	8	35	5315822	5315622	50
PG 11	2	5	24	8	35	5315111	5315501	50
PG 11	2	6	27	8	38	5315112	5315502	50
PG 11	3	3	24	8	35	5315823	5315623	50
PG 11	3	3.5	24	8	35	5315113	5315503	50
PG 11	3	4	24	8	35	5315824	5315624	50
PG 11	3	5	27	8	38	5315114	5315504	50
PG 11	3	5.3	24	8	36	5315825	5315625	50
PG 11	4	1.5	24	8	35	5315826	5315626	50
PG 11	4	3.5	24	8	35	5315827	5315627	50
PG 11	6	2	24	8	35	5315828	5315628	50
PG 11	6	2.5	24	8	35	5315829	5315629	50
PG 13.5	2	3	24	9	36	5315830	5315630	50
PG 13.5	2	5	24	9	36	5315831	5315631	50
PG 13.5	2	6	24	9	36	5315130	5315510	50
PG 13.5	3	2	24	9	36	5315832	5315632	50
PG 13.5	3	3	24	9	36	5315833	5315633	50
PG 13.5	3	4	24	9	36	5315834	5315634	50
PG 13.5	3	5.3	24	9	36	5315835	5315635	50
PG 13.5	3	6	27	9	38	5315836	5315636	50
PG 13.5	4	3	24	9	36	5315837	5315637	50
PG 13.5	4	4	24	9	36	5315838	5315638	50
PG 13.5	4	5	27	9	38	5315839	5315639	50
PG 13.5	4	5.3	27	9	38	5315840	5315640	50
PG 13.5	6	3.5	24	9	36	5315841	5315641	50
PG 13.5	10	2	24	9	36	5315842	5315642	50
PG 16	2	4	27	10	40	5315850	5315650	50
PG 16	2	5	27	10	40	5315851	5315651	50
PG 16	2	6	27	10	40	5315852	5315652	50
PG 16	2	7	27	10	40	5315160	5315515	50
PG 16	2	8	33	10	42	5315853	5315653	50
PG 16	2	9	33	10	42	5315854	5315654	50
PG 16	3	3	27	10	40	5315855	5315655	50
PG 16	3	4	27	10	40	5315856	5315656	50
PG 16	3	5	27	10	40	5315857	5315657	50
PG 16	3	5.6	27	10	40	5315858	5315658	50
PG 16	3	6	27	10	40	5315859	5315659	50
PG 16	3	7	33	10	42	5315860	5315660	50
PG 16	3	8	33	10	42	5315861	5315661	50

Outer thread	Hole Quantity	Hole diameter mm	H mm	E mm	L mm	Cat. No. Light Grey	Cat. No. Black	Std. Pk.
PG 16	4	4	27	10	40	5315862	5315662	50
PG 16	4	5	33	10	42	5315863	5315663	50
PG 16	4	6	33	10	42	5315864	5315664	50
PG 16	5	4	27	10	40	5315865	5315665	50
PG 16	5	5	27	10	40	5315866	5315666	50
PG 16	6	4	27	10	40	5315867	5315667	50
PG 16	7	4	33	10	42	5315868	5315668	50
PG 21	2	4.5	33	11	44	5315869	5315669	20
PG 21	2	8	33	11	44	5315870	5315670	20
PG 21	2	8.7	42	11	48	5315871	5315671	20
PG 21	2	9	42	11	48	5315872	5315672	20
PG 21	2	11	42	11	48	5315873	5315673	20
PG 21	3	7	33	11	44	5315210	5315520	20
PG 21	3	8	33	11	44	5315211	5315521	20
PG 21	3	9	42	11	48	5315874	5315674	20
PG 21	4	5	33	11	44	5315875	5315675	20
PG 21	4	6	33	11	44	5315212	5315522	20
PG 21	4	7.5	42	11	48	5315876	5315676	20
PG 21	4	8	42	11	48	5315213	5315523	20
PG 21	5	5	33	11	44	5315877	5315677	20
PG 21	5	6	33	11	44	5315214	5315524	20
PG 21	5	6.5	33	11	44	5315215	5315525	20
PG 21	6	4	42	11	48	5315878	5315678	20
PG 21	6	5	33	11	44	5315879	5315679	20
PG 21	6	6	42	11	48	5315216	5315526	20
PG 21	6	6.5	42	11	48	5315217	5315527	20
PG 21	6	7	42	11	48	5315218	5315528	20
PG 21	7	6	42	11	48	5315219	5315529	20
PG 21	8	4	33	11	44	5315880	5315680	20
PG 21	8	5	33	11	44	5315220	5315530	20
PG 21	11	5	42	11	48	5315221	5315531	20
PG 21	21	2	33	11	44	5315881	5315681	20
PG 21	28	3	42	11	48	5315222	5315532	20
PG 29	2	9	42	12	48	5315289	5315690	20
PG 29	2	11	42	12	48	5315891	5315691	20
PG 29	2	12	42	12	48	5315892	5315692	20
PG 29	3	9	42	12	48	5315893	5315693	20
PG 29	3	11	42	12	48	5315894	5315694	20
PG 29	4	8	42	12	48	5315290	5315540	20
PG 29	4	9	42	12	48	5315895	5315695	20
PG 29	4	10	42	12	48	5315896	5315696	20
PG 29	6	6	42	12	48	5315897	5315697	20
PG 29	6	6.5	42	12	48	5315292	5315542	20
PG 29	6	7	42	12	48	5315293	5315543	20
PG 29	7	6	42	12	48	5315294	5315544	20
PG 29	7	7	42	12	48	5315898	5315698	20
PG 29	8	5	42	12	48	5315899	5315699	20
PG 29	8	6	42	12	48	5315295	5315545	20
PG 29	10	6	42	12	48	5315900	5315700	20
PG 29	11	5	42	12	48	5315296	5315546	20
PG 29	28	3	42	12	48	5315297	5315547	20

Locknuts and seal rings sold separately, see pages 24 and 35.

Material:

- Body: Polyamide PA 6
25 % Glass-fiber Reinforced
- Seal: Tefabloc

Characteristics:

- Metric thread
- Multi-holed seal inserts

Temperature Range

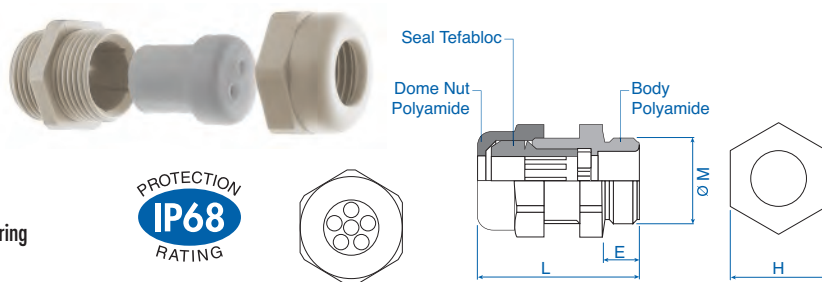
-30 to 120°C
(-22 to 248°F)

Technical properties:

- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations



Outer thread	Hole Quantity	Hole diameter mm	H mm	E mm	L mm	Cat. No. Light Grey	Cat. No. Black	Std. Pk.	Outer thread	Hole Quantity	Hole diameter mm	H mm	E mm	L mm	Cat. No. Light Grey	Cat. No. Black	Std. Pk.
M 16 x 1.5	2	1	19	8	32	5316100	5318100	50	M 25 x 1.5	4	6	33	11	44	5316305	5318305	20
M 16 x 1.5	2	3	19	8	32	5316101	5318101	50	M 25 x 1.5	5	5	33	11	44	5316306	5318306	20
M 16 x 1.5	2	3.5	19	8	32	5316102	5318102	50	M 25 x 1.5	5	6	33	11	44	5316307	5318307	20
M 16 x 1.5	2	4	19	8	32	5316103	5318103	50	M 25 x 1.5	5	6.5	33	11	44	5316308	5318308	20
M 16 x 1.5	3	3	19	8	32	5316104	5318104	50	M 25 x 1.5	6	4	33	11	44	5316309	5318309	20
M 20 x 1.5	2	3	24	9	36	5316200	5318200	50	M 25 x 1.5	6	5	33	11	44	5316310	5318310	20
M 20 x 1.5	2	4	27	9	39	5316201	5318201	50	M 25 x 1.5	8	4	33	11	44	5316311	5318311	20
M 20 x 1.5	2	5	27	9	39	5316202	5318202	50	M 25 x 1.5	8	5	33	11	44	5316312	5318312	20
M 20 x 1.5	2	6	27	9	39	5316203	5318203	50	M 25 x 1.5	21	2	33	11	44	5316313	5318313	20
M 20 x 1.5	2	7	27	9	39	5316204	5318204	50	M 32 x 1.5	2	9	42	12	55	5316400	5318400	20
M 20 x 1.5	3	2	24	9	36	5316205	5318205	50	M 32 x 1.5	2	11	42	12	55	5316401	5318401	20
M 20 x 1.5	3	3	27	9	39	5316206	5318206	50	M 32 x 1.5	2	12	42	12	55	5316402	5318402	20
M 20 x 1.5	3	4	27	9	39	5316207	5318207	50	M 32 x 1.5	3	9	42	12	55	5316403	5318403	20
M 20 x 1.5	3	5	27	9	39	5316208	5318208	50	M 32 x 1.5	3	11	42	12	55	5316404	5318404	20
M 20 x 1.5	3	5.6	27	9	39	5316209	5318209	50	M 32 x 1.5	4	8	42	12	55	5316405	5318405	20
M 20 x 1.5	3	6	27	9	39	5316210	5318210	50	M 32 x 1.5	4	9	42	12	55	5316406	5318406	20
M 20 x 1.5	4	3	24	9	36	5316211	5318211	50	M 32 x 1.5	4	10	42	12	55	5316407	5318407	20
M 20 x 1.5	4	4	27	9	39	5316212	5318212	50	M 32 x 1.5	6	6	42	12	55	5316408	5318408	20
M 20 x 1.5	5	4	27	9	39	5316213	5318213	50	M 32 x 1.5	6	6.5	42	12	55	5316409	5318409	20
M 20 x 1.5	5	5	27	9	39	5316214	5318214	50	M 32 x 1.5	6	7	42	12	55	5316410	5318410	20
M 20 x 1.5	6	3.5	24	9	36	5316215	5318215	50	M 32 x 1.5	7	6	42	12	55	5316411	5318411	20
M 20 x 1.5	6	4	27	9	39	5316216	5318216	50	M 32 x 1.5	7	7	42	12	55	5316412	5318412	20
M 20 x 1.5	10	2	24	9	36	5316217	5318217	50	M 32 x 1.5	8	5	42	12	55	5316413	5318413	20
M 25 x 1.5	2	4.5	33	11	44	5316300	5318300	20	M 32 x 1.5	8	6	42	12	55	5316414	5318414	20
M 25 x 1.5	2	8	33	11	44	5316301	5318301	20	M 32 x 1.5	10	6	42	12	55	5316415	5318415	20
M 25 x 1.5	3	7	33	11	44	5316302	5318302	20	M 32 x 1.5	11	5	42	12	55	5316416	5318416	20
M 25 x 1.5	3	8	33	11	44	5316303	5318303	20	M 32 x 1.5	28	3	42	12	55	5316417	5318417	20
M 25 x 1.5	4	5	33	11	44	5316304	5318304	20									

Locknuts and seal rings sold separately, see pages 24 and 35.

Cable Gland *Industrial Straight-Through - PVDF*

Material:

- Body: Polyvinylidene fluoride
- Seal: Santoprene
- ECA clamping ring: Polycarbonate

Characteristics:

- Metric thread
- ECA clamping ring

Temperature Range

-40 to 120°C
(-40 to 248°F)

Technical properties:

- No halogen
- Strain relief through clamping ring
- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts
- Chemical resistant

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations
- Food sector



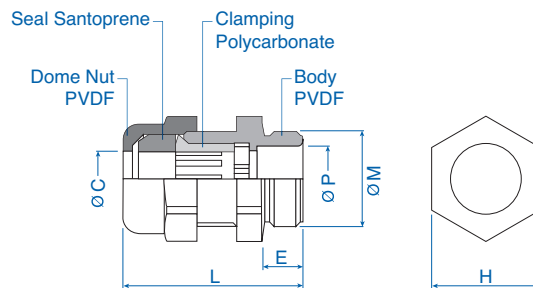
Metric Thread

ECA

Outer thread	Clamping range mm	Cat. No.	Std. Pk.
M 16 x 1.5	5-8	5330016	50
M 20 x 1.5/13	8-12	5330020	50
M 20 x 1.5/16	10-14	5330021	50
M 25 x 1.5	11.5-18	5330025	20
M 32 x 1.5	15-24	5330032	20

Dimensions

Thread Size	H mm	E mm	L mm	ØC mm	ØP mm	ØM mm
M 16x1.5	19	15	39	8.5	9	16
M 20x1.5/13	24	15	42	12.5	13.5	20
M 20x1.5/16	27	15	45	14.5	15	20
M 25x1.5	33	15	48	18.5	19	25
M 32x1.5	42	15	58	25	25	32



Locknuts and seal rings sold separately, see pages 24 and 35.

Material:

- Body: Nickel-plated brass
- Seal: Tefabloc
- ECA clamping ring: Polycarbonate
- Sealing ring for outer thread: Nitril

Characteristics:

- PG/Metric thread
- Extended Thread available

Temperature Range

-25 to 120°C
(-13 to 248°F)

Technical properties:

- Strain relief through clamping ring
- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations

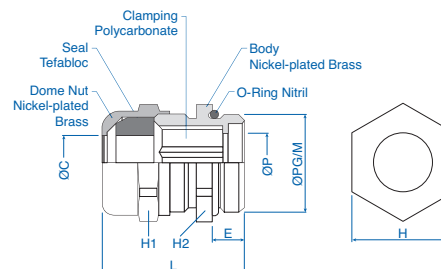


ECA Clamping Ring Nickel-Plated Brass

ECA

Outer thread	Clamping range mm	Cat. No.	Std. Pk.
PG			
PG 7	3-6	4221079	50
PG 9	5-8	4221095	50
PG 11	6-10	4221117	50
PG 13.5	8-12	4221133	50
PG 16	9.5-14	4221168	20
PG 21	11.5-18	4221214	20
PG 29	15-24	4221290	20
PG 36*	23-30	4221362	10
PG 42*	26-35	4221427	5
PG 48*	35-40	4221486	5
Metric			
M 12 x 1.5	3-6	4221714	50
M 16 x 1.5/7	3-6	4221716	50
M 16 x 1.5/9	5-8	4221717	50
M 20 x 1.5/11	6-10	4221720	50
M 20 x 1.5/13	8-12	4221721	50
M 25 x 1.5/16	9.5-14	4221725	20
M 25 x 1.5/21	11.5-18	4221726	20
M 32 x 1.5/21	11.5-18	4221732	10
M 32 x 1.5/29	15-24	4221733	10
M 40 x 1.5	15-24	4221740	5
M 50 x 1.5*	23-30	4221750	5
M 63 x 1.5*	26-35	4221760	5

Thread Size	Dimensions				ØC mm	ØP mm	ØPG/M mm
	H1 mm	H2 mm	E mm	L mm			
PG7	14	14	5	24	6.5	7.2	12.5
PG9	17	17	6	25	8.5	9.2	15.2
PG11	20	20	6	26	10.5	11.2	18.6
PG13.5	22	22	6.5	28	12.5	13.1	20.4
PG16	24	24	6.5	30	15.2	15.6	22.5
PG21	30	30	7	35	18.5	20.1	28.3
PG29	40	40	8	43	25.0	26.2	37.0
PG36	50	50	9	50	30.5	33.0	47.0
PG42	58	58	10	57	35.5	40.0	54.0
PG48	64	64	10	59	40.5	47.5	59.3
M 12x1.5	14	14	7	27	6.5	7.2	12
M 16x1.5/7	14	17	7	27	6.5	7.2	16
M 16x1.5/9	17	17	7	27	8.5	9.2	16
M 20x1.5/11	20	22	7	28	10.5	11.2	20
M 20x1.5/13	22	22	7	29	12.5	13.1	20
M 25x1.5/16	24	26	8	31	15.2	15.6	25
M 25x1.5/21	30	30	8	37	18.5	20.1	25
M 32x1.5/21	30	33	8.5	38	18.5	20.1	32
M 32x1.5/29	40	40	8.5	45	25.0	26.2	32
M 40x1.5	40	42	8.5	45	25.0	26.2	40
M 50x1.5	50	55	9.5	51	30.5	33.0	50
M 63x1.5	58	70	10.5	58	30.5	40.0	63



*Clamping ring made of polyoxymethylene (POM), temperature range -30°C to +95°C (-22°F to 203°F).

Locknuts sold separately, see page 25.

Cable Gland Industrial Flat Cable - Nickel-Plated Brass

Material:

- Body: Nickel-Plated Brass
- Seal: Tefabloc
- Sealing ring for outer thread: Nitril

Characteristics:

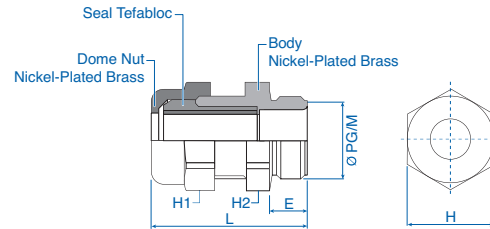
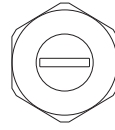
- PG/metric thread
- Seal for flat cable round, angular, oval
- Extended thread available

Technical properties:

- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations



Temperature Range

-25 to 120°C
(-13 to 248°F)



Flat Cable, Rounded

Flat Cable, Oval

Outer thread	Clamping range mm	Cat. No.	Clamping range mm	Cat. No.	H1 mm	H2 mm	E mm	L mm	Std. Pk.
PG									
PG 9	3.5 x 5.5	4224300			17	17	6	25	50
PG 11	2.8 x 10.5	4224305			20	20	6	26	50
PG 11	3.5 x 9	4224306			20	20	6	26	50
PG 11	4 x 6	4224307			20	20	6	26	50
PG 13.5	3 x 12	4224310	5 x 8	4224375	22	22	6.5	28	50
PG 13.5	5 x 11	4224311	5 x 12	4224376	22	22	6.5	28	50
PG 16	5 x 12	4224315	5 x 12	4224390	24	24	6.5	30	25
PG 16	7.5 x 14	4224317	5.5 x 8.5	4224380	24	24	6.5	30	25
PG 16	8 x 12*	4224351	6 x 10	4224382	24	24	6.5	30	25
PG 16			7 x 14	4224384	24	24	6.5	30	25
PG 16	5 x 16	4224316	5 x 15	4224381	30	30	6.5	35	20
PG 16			6 x 15	4224383	30	30	6.5	35	20
PG 21	5 x 17	4224320	5 x 16	4224385	30	30	7	35	20
PG 21	7 x 18	4224321	7 x 16.5	4224386	30	30	7	35	20
PG 21	9 x 15	4224322			30	30	7	35	20
PG 21	4 x 15*	4224355			30	30	7	35	20
PG 21			7 x 20	4224387	40	40	7	43	10
PG 29	8 x 25	4224326			40	40	8	43	10
PG 29	10 x 25	4224327			40	40	8	43	10
Metric									
M 16 x 1.5	3.5 x 5.5	4224700			17	17	7	27	50
M 20 x 1.5	2.8 x 10.5	4224705			20	22	7	28	50
M 20 x 1.5	3.5 x 9	4224706			20	22	7	28	50
M 20 x 1.5	4 x 6	4224707			20	22	7	28	50
M 20 x 1.5	3 x 12	4224710	5 x 8	4224775	22	22	7	29	50
M 20 x 1.5	5 x 11	4224711	5 x 12	4224776	22	22	7	29	50
M 25 x 1.5	5 x 12	4224715	5 x 12	4224790	24	26	8	31	20
M 25 x 1.5	7.5 x 14	4224717	5.5 x 8.5	4224780	24	26	8	31	20
M 25 x 1.5	8 x 12*	4224751	6 x 10	4224781	24	26	8	31	20
M 25 x 1.5			7 x 14	4224782	24	26	8	31	20
M 25 x 1.5	5 x 16	4224716	5 x 15	4224784	30	30	8	37	20
M 25 x 1.5	5 x 17	4224720	5 x 16	4224785	30	30	8	37	20
M 25 x 1.5	7 x 18	4224721	6 x 15	4224783	30	30	8	37	20
M 25 x 1.5	9 x 15	4224722	7 x 16.5	4224786	30	30	8	37	20
M 25 x 1.5	4 x 15*	4224755			30	30	8	37	20
M 32 x 1.5	8 x 25	4224726	7 x 20	4224787	40	33	8.5	38	10
M 32 x 1.5	10 x 25	4224727			40	33	8.5	38	10

* Flat Cable, angular

Locknuts sold separately, see page 25.

Cable Gland Industrial Multi-Conductor (PG) - Nickel-Plated Brass

Material:

- Body: Nickel-Plated Brass
- Seal: Tefabloc
- Sealing ring for outer thread: Nitril

Characteristics:

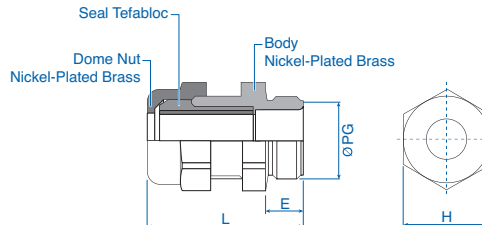
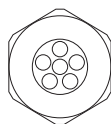
- PG thread
- Multi-holed seal inserts

Technical properties:

- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations



Temperature Range
-25 to 120°C (-13 to 248°F)



Outer thread	Hole Quantity	Hole diameter mm	H mm	E mm	L mm	Cat. No.	Std. Pk.	Outer thread	Hole Quantity	Hole diameter mm	H mm	E mm	L mm	Cat. No.	Std. Pk.
PG 7	1	4	14	5	24	4248640	50	PG 16	4	4	24	6.5	30	4248688	50
PG 7	1	5	14	5	24	4248641	50	PG 16	4	5	30	7	35	4248689	50
PG 9	1	5	17	6	25	4248642	50	PG 16	4	6	30	7	35	4248694	50
PG 9	2	1	17	6	25	4248643	50	PG 16	5	4	24	6.5	30	4248690	50
PG 9	2	3	17	6	25	4248644	50	PG 16	5	5	30	7	35	4248691	50
PG 9	2	3.5	17	6	25	4248645	50	PG 16	6	4	24	6.5	30	4248692	50
PG 9	2	4	17	6	25	4248646	50	PG 16	7	4	30	7	35	4248693	50
PG 9	3	3	17	6	25	4248647	50	PG 21	2	4.5	30	7	35	4248696	20
PG 9	4	3	20	6	26	4248648	50	PG 21	2	8	30	7	35	4248697	20
PG 9	4	4	20	6	26	4248649	50	PG 21	2	8.7	40	8	43	4248698	20
PG 11	2	2.3	20	6	26	4248650	50	PG 21	2	9	40	8	43	4248699	20
PG 11	2	3	20	6	26	4248651	50	PG 21	2	11	40	8	43	4248700	20
PG 11	2	3.5	20	6	26	4248405	50	PG 21	3	7	30	7	35	4248542	20
PG 11	2	4	20	6	26	4248652	50	PG 21	3	8	30	7	35	4248531	20
PG 11	2	5	20	6	26	4248660	50	PG 21	3	9	40	8	43	4248701	20
PG 11	2	6	24	6.5	30	4248661	50	PG 21	4	5	30	7	35	4248702	20
PG 11	3	3	20	6	26	4248653	50	PG 21	4	6	30	7	35	4248529	20
PG 11	3	3.5	20	6	26	4248407	50	PG 21	4	7.5	40	8	43	4248709	20
PG 11	3	4	20	6	26	4248654	50	PG 21	4	8	40	8	43	4248703	20
PG 11	3	5	24	6.5	30	4248662	50	PG 21	5	5	30	7	35	4248704	20
PG 11	3	5.3	22	6.5	28	4248655	50	PG 21	5	6	30	7	35	4248539	20
PG 11	4	1.5	20	6	26	4248656	50	PG 21	5	6.5	30	7	35	4248541	20
PG 11	4	3.5	20	6	26	4248657	50	PG 21	6	4	30	7	35	4248705	20
PG 11	6	2	20	6	26	4248658	50	PG 21	6	5	30	7	35	4248706	20
PG 11	6	2.5	20	6	26	4248659	50	PG 21	6	6	40	8	43	4248713	20
PG 13.5	2	3	22	6.5	28	4248663	50	PG 21	6	6.5	40	8	43	4248710	20
PG 13.5	2	5	22	6.5	28	4248664	50	PG 21	6	7	40	8	43	4248715	20
PG 13.5	2	6	22	6.5	28	4248404	50	PG 21	7	6	40	8	43	4248714	20
PG 13.5	3	2	22	6.5	28	4248665	50	PG 21	8	4	30	7	35	4248707	20
PG 13.5	3	3	22	6.5	28	4248666	50	PG 21	8	5	30	7	35	4248543	20
PG 13.5	3	4	22	6.5	28	4248667	50	PG 21	11	5	40	8	43	4248712	20
PG 13.5	3	5.3	24	6.5	30	4248668	50	PG 21	21	2	30	7	35	4248708	20
PG 13.5	3	6	24	6.5	30	4248669	50	PG 21	28	3	40	8	43	4248711	20
PG 13.5	4	3	22	6.5	28	4248670	50	PG 29	2	9	40	8	43	4248716	20
PG 13.5	4	4	22	6.5	28	4248671	50	PG 29	2	11	40	8	43	4248717	20
PG 13.5	4	5	24	6.5	30	4248673	50	PG 29	3	9	40	8	43	4248719	20
PG 13.5	4	5.3	24	6.5	30	4248672	50	PG 29	3	11	40	8	43	4248720	20
PG 13.5	6	3.5	22	6.5	28	4248674	50	PG 29	4	8	40	8	43	4248629	20
PG 13.5	10	2	22	6.5	28	4248675	50	PG 29	4	9	40	8	43	4248721	20
PG 16	2	4	24	6.5	30	4248678	50	PG 29	4	10	40	8	43	4248722	20
PG 16	2	5	24	6.5	30	4248679	50	PG 29	6	6	40	8	43	4248627	20
PG 16	2	6	24	6.5	30	4248680	50	PG 29	6	6.5	40	8	43	4248610	20
PG 16	2	7	24	6.5	30	4248409	50	PG 29	6	7	40	8	43	4248614	20
PG 16	2	8	30	7	35	4248681	50	PG 29	7	6	40	8	43	4248631	20
PG 16	2	9	30	7	35	4248682	50	PG 29	7	7	40	8	43	4248723	20
PG 16	3	3	24	6.5	30	4248683	50	PG 29	8	5	40	8	43	4248724	20
PG 16	3	4	24	6.5	30	4248684	50	PG 29	8	6	40	8	43	4248632	20
PG 16	3	5	24	6.5	30	4248677	50	PG 29	10	6	40	8	43	4248725	20
PG 16	3	5.6	24	6.5	30	4248685	50	PG 29	11	5	40	8	43	4248634	20
PG 16	3	6	24	6.5	30	4248686	50	PG 29	28	3	40	8	43	4248612	20
PG 16	3	7	30	7	35	4248695	50								
PG 16	3	8	24	6.5	30	4248687	50								

Locknuts sold separately, see page 25.

Cable Gland Industrial Multi-Conductor (Metric) - Nickel-Plated Brass

Material:

- Body: Nickel-Plated Brass
- Seal: Tefabloc
- Sealing ring for outer thread: Nitril

Characteristics:

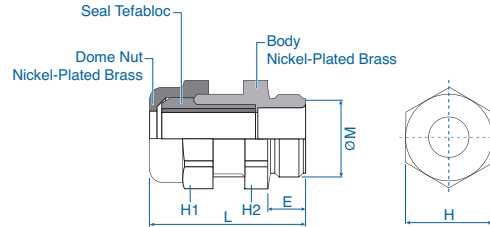
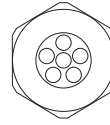
- Metric thread
- Multi-holed seal inserts
- Extended thread available

Technical properties:

- Gas tight and watertight
- Completely twist protected
- Combinable with various sealing inserts

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations



Temperature Range

-25 to 120°C
(-13 to 248°F)

Outer thread	Hole Quantity	Hole diameter mm	H1 mm	H2 mm	E mm	L mm	Cat. No.	Std. Pk.
M 16 x 1.5	2	1	17	17	7	13	4249600	50
M 16 x 1.5	2	3	17	17	7	13	4249601	50
M 16 x 1.5	2	3.5	17	17	7	13	4249602	50
M 16 x 1.5	2	4	17	17	7	13	4249603	50
M 16 x 1.5	3	3	17	17	7	13	4249604	50
M 20 x 1.5	2	2.3	20	22	7	28	4249610	50
M 20 x 1.5	2	3	22	22	7	29	4249611	50
M 20 x 1.5	2	3.5	20	22	7	28	4249612	50
M 20 x 1.5	2	4	20	22	7	28	4249613	50
M 20 x 1.5	2	5	22	22	7	29	4249614	50
M 20 x 1.5	2	6	22	22	7	29	4249615	50
M 20 x 1.5	3	2	22	22	7	29	4249616	50
M 20 x 1.5	3	3	22	22	7	29	4249617	50
M 20 x 1.5	3	3.5	20	22	7	28	4249618	50
M 20 x 1.5	3	4	22	22	7	29	4249619	50
M 20 x 1.5	3	5.3	22	22	7	29	4249620	50
M 20 x 1.5	4	1.5	20	22	7	28	4249621	50
M 20 x 1.5	4	3	22	22	7	29	4249622	50
M 20 x 1.5	4	3.5	20	22	7	28	4249623	50
M 20 x 1.5	4	4	22	22	7	29	4249624	50
M 20 x 1.5	6	2	20	22	7	28	4249625	50
M 20 x 1.5	6	2.5	20	22	7	28	4249626	50
M 20 x 1.5	6	3.5	22	22	7	29	4249627	50
M 20 x 1.5	10	2	22	22	7	29	4249628	50
M 25 x 1.5	2	4	24	26	8	31	4249640	20
M 25 x 1.5	2	4.5	30	30	8	37	4249641	20
M 25 x 1.5	2	5	24	26	8	31	4249642	20
M 25 x 1.5	2	6	24	26	8	31	4249643	20
M 25 x 1.5	2	7	24	26	8	31	4249644	20
M 25 x 1.5	2	8	30	30	8	37	4249645	20
M 25 x 1.5	3	3	24	26	8	31	4249646	20
M 25 x 1.5	3	4	24	26	8	31	4249647	20
M 25 x 1.5	3	5	24	26	8	31	4249648	20
M 25 x 1.5	3	5.6	24	26	8	31	4249649	20
M 25 x 1.5	3	6	24	26	8	31	4249650	20
M 25 x 1.5	3	7	30	30	8	37	4249651	20
M 25 x 1.5	3	8	30	30	8	37	4249652	20
M 25 x 1.5	4	4	24	26	8	31	4249653	20
M 25 x 1.5	4	5	30	30	8	37	4249654	20
M 25 x 1.5	4	6	30	30	8	37	4249655	20
M 25 x 1.5	5	4	24	26	8	31	4249656	20
M 25 x 1.5	5	5	30	30	8	37	4249657	20
M 25 x 1.5	5	6	30	30	8	37	4249658	20
M 25 x 1.5	5	6.5	30	30	8	37	4249659	20
M 25 x 1.5	6	4	30	30	8	37	4249660	20
M 25 x 1.5	6	5	30	30	8	37	4249661	20
M 25 x 1.5	8	4	30	30	8	37	4249662	20
M 25 x 1.5	8	5	30	30	8	37	4249663	20
M 25 x 1.5	21	2	30	30	8	37	4249664	20

Outer thread	Hole Quantity	Hole diameter mm	H1 mm	H2 mm	E mm	L mm	Cat. No.	Std. Pk.
M 32 x 1.5	2	4.5	30	33	8.5	38	4249670	20
M 32 x 1.5	2	8	30	33	8.5	38	4249671	20
M 32 x 1.5	2	9	40	40	8.5	45	4249672	20
M 32 x 1.5	2	11	40	40	8.5	45	4249673	20
M 32 x 1.5	2	12	40	40	8.5	45	4249674	20
M 32 x 1.5	3	7	30	33	8.5	38	4249675	20
M 32 x 1.5	3	8	30	33	8.5	38	4249676	20
M 32 x 1.5	3	9	40	40	8.5	45	4249677	20
M 32 x 1.5	3	11	40	40	8.5	45	4249678	20
M 32 x 1.5	4	5	30	33	8.5	38	4249679	20
M 32 x 1.5	4	6	30	33	8.5	38	4249680	20
M 32 x 1.5	4	8	40	40	8.5	45	4249681	20
M 32 x 1.5	4	9	40	40	8.5	45	4249682	20
M 32 x 1.5	4	10	40	40	8.5	45	4249683	20
M 32 x 1.5	5	5	30	33	8.5	38	4249684	20
M 32 x 1.5	5	6	30	33	8.5	38	4249685	20
M 32 x 1.5	5	6.5	30	33	8.5	38	4249686	20
M 32 x 1.5	6	4	30	33	8.5	38	4249687	20
M 32 x 1.5	6	5	30	33	8.5	38	4249688	20
M 32 x 1.5	6	6	40	40	8.5	45	4249689	20
M 32 x 1.5	6	6.5	40	40	8.5	45	4249690	20
M 32 x 1.5	6	7	40	40	8.5	45	4249691	20
M 32 x 1.5	7	6	40	40	8.5	45	4249692	20
M 32 x 1.5	7	7	40	40	8.5	45	4249693	20
M 32 x 1.5	8	4	30	33	8.5	38	4249694	20
M 32 x 1.5	8	5	40	40	8.5	45	4249695	20
M 32 x 1.5	8	6	40	40	8.5	45	4249696	20
M 32 x 1.5	10	6	40	40	8.5	45	4249697	20
M 32 x 1.5	11	5	40	40	8.5	45	4249698	20
M 32 x 1.5	21	2	30	33	8.5	38	4249699	20
M 32 x 1.5	28	3	40	40	8.5	45	4249701	20

Locknuts sold separately, see page 25.

Material:

- Body: Polyamide 6
- Seal: Neoprene
- Flat Seal: Neoprene
- Color: Blue

Technical Properties:

- Maximum strain relief through clamping range
- Trapezoidal thread with high torque guarantees tight and permanent fit of the dome nut
- Gas tight and watertight

Applications:

- Explosion endangered areas
- Machines and devices
- Measuring and control engineering
- Plant installations

Temperature Range

-35 to 95°C
(-31 to 203°F)



L.C.I.E. ATEX


ATEX Characteristics:

Certificate: LCIE 07 ATEX 6082X

Type of protection: Ex e

Test Standards: EN60079-0

EN60079-7

EN61241-0

EN61241-1

Device Group: II

Category: 2 and 3

Atmosphere: G/D

Zone: 1, 2, 21 and 22

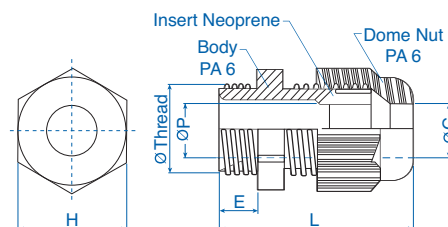
NPT Thread

Outer thread	Clamping range mm	Cat. No. Blue	Std. Pk.
NPT 3/8"	5-8	5507760	50
NPT 1/2"	7-12	5507761	50
NPT 3/4"	12-18	5507762	20
NPT 1"	16-25	5507763	20

Metric Thread*

Outer thread	Clamping range mm	Cat. No. Blue	Std. Pk.
M 12 x 1.5	4-6.5	5507560	50
M 16 x 1.5/9	5-8	5507561	50
M 16 x 1.5/11	5-10	5507562	50
M 20 x 1.5/13	7-12	5507563	50
M 20 x 1.5/16	10-14	5507564	50
M 25 x 1.5/16	10-14	5507565	20
M 25 x 1.5/21	12-18	5507566	20
M 32 x 1.5	16-25	5507567	20
M 40 x 1.5	22-32	5507568	20
M 50 x 1.5	28-38.5	5507569	10
M 63 x 1.5	40-48	5507570	5

Thread Size	H mm	E mm	Dimensions			
			L mm	ØC mm	ØP mm	ØThread mm
NPT 3/8	19	11	38	8.5	8.7	17.1
NPT 1/2	24	14	44	12.5	12.5	21.2
NPT 3/4	33	15	54	18.5	18.5	26.7
NPT 1	42	18	60	25.5	25.5	33.3
M12x1.5	15	8	32	6.7	6.8	12.0
M16x1.5/9	19	10	37	8.5	8.5	16.0
M16x1.5/11	22	10	39	10.5	10.5	16.0
M20x1.5/13	24	10	40	12.5	12.5	20.0
M20x1.5/16	27	10	43	14.5	14.5	20.0
M25x1.5/16	27	10	45	14.5	14.5	25.0
M25x1.5/21	33	10	49	18.5	18.5	25.0
M32x1.5	42	10	52	25.5	25.5	32.0
M40x1.5	53	10	62	32.5	32.5	40.0
M50x1.5	60	12	67	39.0	39.0	50.0
M63x1.5	70	12	68	48.5	48.5	63.0



* Extended thread available consult Altech

Locknuts sold separately, see page 24.

Cable Gland ATEX - Polyamide

Material:

- Body: Polyamide PA 6
25 % Glass fiber Reinforced
- Seal: Neoprene
- ECA clamping ring: Polycarbonate

Characteristics:

- PG/Metric thread
- Extended thread available
- Strain relief through clamping ring

Applications:

- For explosion endangered areas according to EN 50014 and EN 50019
- Machines and devices
- Measuring and control engineering
- Plant installations

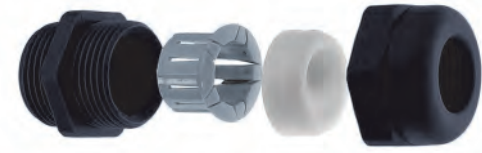
Temperature Range

-20 to 55°C
(-4 to 131°F)

ECA Clamping Ring (Punch-out Seal)

Outer thread	Clamping range mm	Cat. No. Black	Std. Pk.
PG			
PG 9	3.5 - 8.5	5507050	50
PG 11	4.0 - 10.5	5507051	50
PG 13.5	5.0 - 12.5	5507052	50
PG 16	6.5 - 14.0	5507053	50
PG 21	8.0 - 18.5	5507054	20
PG 29	10.0 - 25.0	5507055	20
Metric			
M 16 x 1.5	3.5 - 8.5	5507250	50
M 20 x 1.5/13	5.0 - 12.5	5507251	50
M 20 x 1.5/16	6.5 - 14.0	5507252	50
M 25 x 1.5	8.0 - 18.5	5507253	20
M 32 x 1.5	10.0 - 25.0	5507254	20

Thread Size	Dimensions					
	H mm	E mm	L mm	ØC mm	ØP mm	ØPG/M mm
PG9	19	8	32	8.5	9.0	15.2
PG11	22	8	35	11.5	11.0	18.6
PG13.5	24	9	36	12.5	13.5	20.4
PG16	27	10	40	14.5	15.0	22.5
PG21	33	11	44	18.5	19.0	28.3
PG29	42	12	55	25.0	25.0	37.0
M 16x1.5	19	8	32	8.5	9.0	16.0
M 20x1.5/13	24	9	36	12.5	13.5	20.0
M 20x1.5/16	27	9	39	14.5	15.0	20.0
M 25x1.5	33	11	44	18.5	19.0	25.0
M 32x1.5	42	12	55	25.0	25.0	32.0



Gland must be mounted with flat seal and locknut.

L.C.I.E. ATEX

PROTECTION
IP68
RATING

ATEX Characteristics:

Certificate: LCIE 99 ATEX 6030X

Type of protection: Ex e

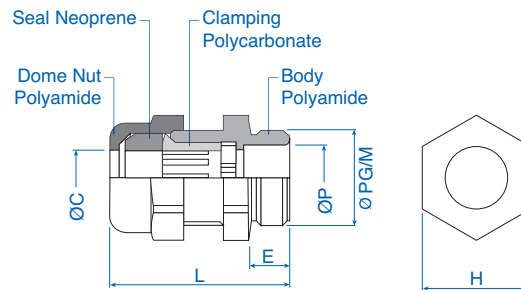
Test Standards: EN60079-0
EN60079-7
EN61241-0
EN61241-1

Device Group: II

Category: 2 and 3

Atmosphere: G/D

Zone: 1 and 2 (21 and 22 with seal ring)



Locknuts and seal rings sold separately, see page 24 and 35.

Material:

- Body: Nickel-plated brass
- Seal: Tefabloc
- Clamping ring for grounding connection: Tin-plated plastic
- Seal ring for outer thread: Nitril

Characteristics:

- PG/Metric thread

Technical properties:

- Continuous EMC protection due to tin-plated plastic
- Gas tight and watertight
- Completely twist protected

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations
- Telecommunications



Temperature Range
-25 to 120°C (-13 to 248°F)

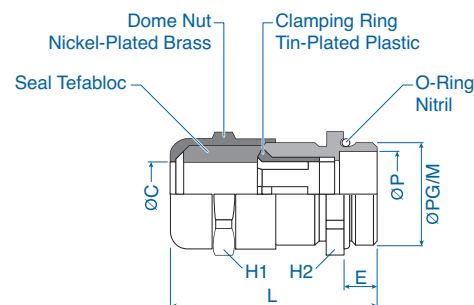


Outer thread	Cable Clamping range mm	Shield Clamping range mm	Cat. No.	Std. Pk.
PG				
PG 7	4 - 6.5	4 - 6.5	4264007	100
PG 9	5 - 8.5	4.5 - 8.5	4264009	50
PG 11	7 - 10.5	6 - 10.5	4264011	50
PG 13.5	8 - 12.5	8 - 12.5	4264013	50
PG 16	10 - 14.5	10 - 14.5	4264016	20
PG 21	13.5 - 18	13.5 - 18	4264021	25
PG 29	17 - 24	17 - 24	4264029	10
PG 36	24 - 30	24 - 30	4264036	10

Metric

M 12 x 1.5/7	4 - 6.5	4 - 6.5	4264112	100
M 16 x 1.5/7	4 - 6.5	4 - 6.5	4264116	100
M 16 x 1.5/9	5 - 8.5	4.5 - 8.5	4264117	50
M 20 x 1.5/11	7 - 10.5	6 - 10.5	4264120	50
M 20 x 1.5/13	8 - 12.5	8 - 12.5	4264121	50
M 25 x 1.5/16	10 - 14.5	10 - 14.5	4264125	25
M 25 x 1.5/21	13.5 - 18	13.5 - 18	4264126	25
M 32 x 1.5/21	13.5 - 18	13.5 - 18	4264132	10
M 32 x 1.5/29	17 - 24	17 - 24	4264133	10
M 40 x 1.5/29	17 - 24	17 - 24	4264134	10
M 40 x 1.5/36	24 - 30	24 - 30	4264135	10

Thread Size	Dimensions							
	H1 mm	H2 mm	E mm	L mm	ØC mm	ØP mm	ØPG/M mm	
PG7	14	14	5	35	6.5	7.2	12.5	
PG9	17	17	6	37	8.5	9.2	15.2	
PG11	20	20	6	40	10.5	11.2	18.6	
PG13.5	22	22	6.5	40	12.5	13.1	20.4	
PG16	24	24	6.5	40	15.2	15.6	22.5	
PG21	30	30	7	50	18.5	20.1	28.3	
PG29	40	40	8	60	25.0	26.2	37.0	
PG36	50	50	9	70	30.5	33.0	47.0	
M 12x1.5/7	14	14	7	37	6.5	7.2	12.0	
M 16x1.5/7	14	17	7	37	6.5	7.2	16.0	
M 16x1.5/9	17	17	7	38	8.5	9.2	16.0	
M 20x1.5/11	20	22	7	41	10.5	11.2	20.0	
M 20x1.5/13	22	22	7	41	12.5	13.1	20.0	
M 25x1.5/16	24	26	8	41	15.2	15.6	25.0	
M 25x1.5/21	30	30	8	51	18.5	20.1	25.0	
M 32x1.5/21	30	33	8.5	51.5	18.5	20.1	32.0	
M 32x1.5/29	40	40	8.5	60.5	25.0	26.2	32.0	
M 40x1.5/29	40	42	8.5	60.5	25.0	26.2	40.0	
M 40x1.5/36	50	50	8.5	67	30.5	33.0	40.0	



This is one of our most popular series and is usually kept in stock.

Locknuts sold separately, see page 25.

Cable Gland EMC - Nickel-Plated Brass

Material:

- Body: Nickel-plated brass
- Seal: Santoprene
- O-ring: Perbunan

Characteristics:

- PG thread

Technical properties:

- EMC protection due to pressure rings and circular spring
- Gas tight and watertight
- Completely twist protected

Applications:

- Machines and devices
- Measuring and control engineering
- Plant installations



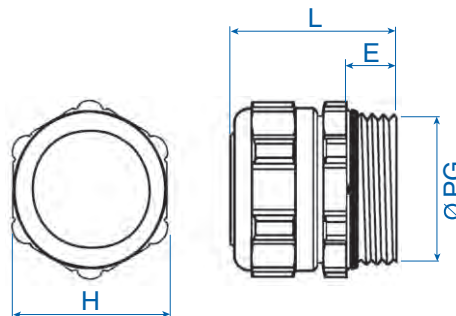
Temperature Range

-25 to 100°C
(-13 to 212°F)



Outer thread	Cable Clamping range mm	Shield Clamping range mm	Cat. No.	Std. Pk.
PG				
PG 9	4 - 6	2.5 - 6	4266 003	25
PG 9	6.5 - 9.5	2.2 - 6.5	4266 004	25
PG 9	6.5 - 9.5	3.5 - 8.5	4266 005	25
PG 11	7 - 10.5	4 - 8.5	4266 008	25
PG 13.5	6 - 9	3.5 - 7.5	4266 011	25
PG 13.5	7 - 10.5	4 - 8	4266 013	25
PG 16	6 - 10.5	6 - 9	4266 014	25
PG 16	8 - 12	6 - 9.5	4266 018	25
PG 16	10 - 14	9 - 13	4266 016	25
PG 21	14 - 18	12.5 - 17.5	4266 025	20
PG 21	17 - 20	12.5 - 17.5	4266 022	20
PG 29	19 - 23	15 - 21	4266 028	20
PG 36	25 - 29	18 - 25.5	4266 031	10

Thread Size	Dimensions			ØPG
	H mm	E mm	L mm	
PG9	20	6	34	15.2
PG11	24	10	41	18.6
PG13.5	24	10	41	20.4
PG16	30	11	43	22.5
PG21	30	12	44	28.3
PG29	40	13	53	37.0
PG36	50	14	61	47.0
PG42	60	15	65	54.0



This is one of our most popular series and is usually kept in stock.

Locknuts sold separately, see page 25.

Material:

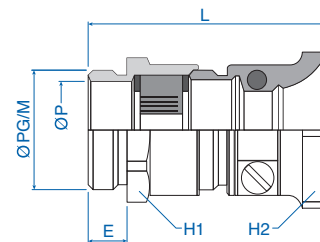
- Nickel-plated brass
- Sealing ring: Neoprene

Characteristics:

- PG/Metric thread
- Sealing ring, punchable

Applications:

- Tension proof grip
- Grounding connection possible
- Protects bent cable



Type ZEBV Nickel-Plated Brass

with traction relief and kink protection

Outer thread	Clamping range Seal mm	Clamping range traction relief mm	Cat. No.	Std. Pk.
PG				
PG 9	2 - 9	6 - 9.5	4308093	50
PG 11	4 - 11	8 - 11.5	4308115	50
PG 13.5	4.5 - 12	9 - 13	4308131	50
PG 16	5.5 - 14.5	10 - 15	4308166	25
PG 21	8 - 19	14 - 20	4308212	25
PG 29	12 - 27	19 - 30	4308298	10
Metric				
M 16 x 1.5	2 - 9	6 - 9.5	4308516	100
M 20 x 1.5	4 - 11	8 - 11.5	4308520	100
M 20 x 1.5	4.5 - 12	9 - 13	4308521	100
M 25 x 1.5	5.5 - 14.5	10 - 15	4308525	50
M 25 x 1.5	8 - 18	14 - 20	4308526	25
M 32 x 1.5	8 - 19	14 - 20	4308532	25
M 32 x 1.5	12 - 27	19 - 30	4308533	25

Temperature Range

-25 to 100°C
(-13 to 212°F)

Dimensions

Thread Size	H1 mm	H2 mm	E mm	L mm	ØP mm	ØPG/M mm
PG9	17	22	6	34	12.5	15.2
PG11	20	24	6	36	15	18.6
PG13.5	22	28	6.5	37	17	20.4
PG16	24	30	6.5	40	18.5	22.5
PG21	30	38	7	43	24	28.3
PG29	40	50	8	48	32	37
M16	18	22	7	35	12.5	16
M20	22	24	7	37	15	20
M20	22	28	7	37.5	16	20
M25	27	30	8	41.5	18.5	25
M25	32	38	8	44	18.5	25
M32	34	38	8.5	44.5	24	32
M32	40	50	8.5	48.5	28	32

Material:

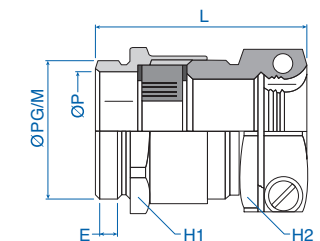
- Nickel-plated brass
- Sealing ring: Neoprene

Characteristics:

- PG/Metric thread

Applications:

- Centered traction relief
- No cable twisting while clamping
- Tension proof grip
- Grounding connection possible



Type ZA Nickel-Plated Brass

with centered traction relief and kink protection

Outer thread	Clamping range Seal mm	Clamping range traction relief mm	Cat. No.	Std. Pk.
PG				
PG 7	4 - 6	5.5 - 7.5	4305078	100
Pg 9	2 - 9	6.5 - 9.5	4305094	50
PG 11	4 - 11	7.5 - 11.5	4305116	50
PG 13.5	4.5 - 12	8.5 - 13.5	4305132	50
PG 16	5.5 - 14.5	10.5 - 16.5	4305167	25
PG 21	8 - 19	12 - 20.5	4305213	25
PG 29	12 - 27	19 - 29.5	4305299	10
PG 36	22 - 33	24 - 36.5	4305361	10
PG 42	25 - 40	33 - 42.5	4305426	5
PG 48	30 - 45	36 - 47.5	4305485	5
Metric				
M 12 x 1.5	4 - 6	5.5 - 7.5	4305500	50
M 16 x 1.5	2 - 9	6.6 - 9.5	4305501	50
M 16 x 1.5	4 - 11	7.5 - 11.5	4305502	50
M 16 x 1.5	4.5 - 12	8.5 - 13.5	4305503	50
M 20 x 1.5	4 - 11	7.5 - 11.5	4305504	50
M 20 x 1.5	4.5 - 12	8.5 - 13.5	4305505	50
M 20 x 1.5	5.5 - 14.5	10.5 - 16.5	4305506	50
M 25 x 1.5	5.5 - 14.5	10.5 - 16.5	4305507	20
M 32 x 1.5	8 - 19	12 - 20.5	4305508	20
M 32 x 1.5	12 - 27	19 - 29.5	4305509	20
M 40 x 1.5	12 - 27	19 - 29.5	4305510	20
M 50 x 1.5	22 - 33	24 - 36.5	4305511	10
M 50 x 1.5	25 - 40	33 - 42.5	4305512	10
M 63 x 1.5	25 - 40	33 - 42.6	4305513	5
M 63 x 1.5	30 - 45	36 - 47.5	4305514	5
M 75 x 1.5	30 - 45	36 - 47.5	4305515	1

Temperature Range

-25 to 100°C
(-13 to 212°F)

Dimensions

Thread Size	H1 mm	H2 mm	E mm	L mm	ØP mm	ØPG/M mm
PG7	14	16	5	29	10	12.5
PG9	17	19	6	34	12.5	15.2
PG11	20	22	6	35	15	18.6
PG13.5	22	24	6.5	36	17	20.4
PG16	24	27	6.5	36	18.5	22.5
PG21	30	33	7	42	24	28.3
PG29	40	42	8	47	32	37
PG36	50	52	9	53	42	47
PG42	57	60	10	65	48	54
PG48	64	64	10	68	52.5	59.3
M12	14	16	7	29	8	12
M16	18	19	7	34	12.5	16
M16	20	22	7	34	12.5	16
M16	22	24	7	35	12.5	16
M20	22	22	7	34	15	20
M20	22	24	7	39	16	20
M20	24	27	7	34	16	20
M25	27	27	8	40	18.5	25
M32	34	33	8.5	43	24	32
M32	40	42	8.5	46	28	32
M40	42	42	8.5	45	32	40
M50	52	52	9.5	50	42	50
M50	58	60	9.5	54	42	50
M63	65	60	10.5	55	48	63
M63	65	64	10.5	56	48	63
M75	80	64	11.5	56	52.5	75

Locknuts and seal rings sold separately, see page 25 and 35.

Cable Gland Traction Relief - Polyamide

Material:

- Body: Polyamide 6
- Seal: Neoprene

Characteristics:

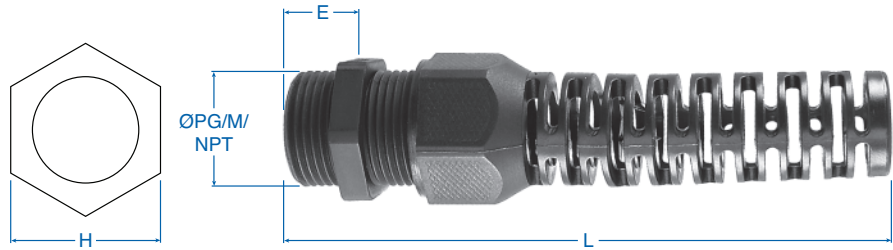
- PG/Metric/NPT threads
- Metric extended thread available

Technical properties:

- Optimal strain relief through clamping range
- Seals against housing through sealing lip (PG and Metric only)*
- Trapezoidal threading with high torque guarantees tight and permanent fit of the dome nut
- Also available with reduction insert
- Gas tight and watertight

Applications:

- Machines and devices



Temperature Range

-30 to 100°C
(-22 to 212°F)

Outer thread	Clamping range mm	Cat. No. Dark Grey	Cat. No. Black	Std. Pk.
PG				
PG 7	2.5 - 6.5	5306007	5306107	50
PG 9	3 - 8	5306009	5306109	50
PG 11	4 - 10	5306011	5306111	50
PG 11	2 - 7	5306012	5306112	50
PG 13.5	5.5 - 12	5306013	5306113	50
PG 13.5	3 - 7	-	5306114	50
PG 16	8.5 - 14	5306016	5306116	25
PG 16	5 - 11	5306017	5306117	25
Metric				
M 12 x 1.5	2.5 - 6.5	5306030	5306130	50
M 16 x 1.5	4 - 8	5306031	5306131	50
M 20 x 1.5	3 - 7	5306032	5306132	50
M 20 x 1.5	5.5 - 12	5306033	5306133	50
NPT				
NPT 3/8"	3 - 8	5306050	5306150	50
NPT 1/2"	3 - 7	5306051	5306151	50
NPT 1/2"	5.5 - 12	5306052	5306152	50

Thread Size	Dimensions			ØPG/M/NPT mm
	H mm	E mm	L mm	
PG7	15	8	62	12.5
PG9	19	8	72	15.2
PG11	22	8	85	18.6
PG13.5	24	9	97	20.4
PG16	27	10	112	22.5
M 12x1.5	15	6	60	12
M 16x1.5	19	6	70	16
M 20x1.5	24	8	96	20
NPT 3/8"	19/22	15	79	17.1
NPT 1/2"	24	15	103	21.2

This is one of our most popular series and is usually kept in stock.

* Seal rings for NPT sold separately, see page 35.

Locknuts sold separately, see page 24.

Material:

- Polystyrene

Seal:

- Neoprene

Characteristics:

- Hexagon base
- PG Thread

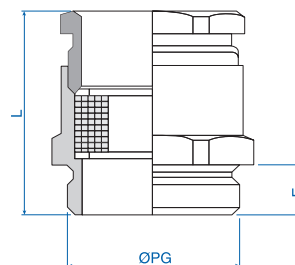


once according to DIN 46320

Outer thread	Clamping range mm	Cat. No. Lt. Gray	Std. Pk.
PG			
PG 7	3.5 - 6	5202078	50
PG 9	4.5 - 7	5202094	50
PG 11	6 - 9	5202116	50
PG 13.5	9 - 12	5202132	50
PG 16	11 - 14	5202167	50
PG 21	14 - 18	5202213	20
PG 29	18 - 25	5202299	10
PG 36	25 - 32	5202361	10
PG 42	30 - 38	5202434	10
PG 48	36 - 44	5202485	10



Temperature Range
-20 to 100°C
(-4 to 212°F)



Dimensions

Thread Size	E mm	L mm
PG7	8	29
PG9	8	31.5
PG11	8	33
PG13.5	9.5	36
PG16	10	40.5
PG21	11	43.5
PG29	11	46
PG36	13	57
PG42	13	61
PG48	14	60

Locknuts and seal rings sold separately, see page 24 and 35.

Locknuts *Polyamide / Stainless Steel*

Material:

- Polyamide 6
- 25 % glass fiber reinforced

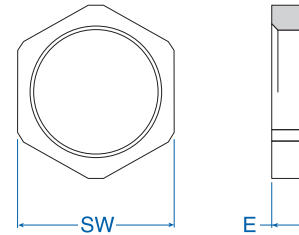
Characteristic feature:

- PG / metric and NPT thread



Temperature Range
-40 to 100°C
(-40 to 212°F)

Thread	Thickness (E) mm	SW mm	Cat. No. Light grey	Cat. No. Black	Std. Pk.
PG (once according to DIN 46 320)					
PG 7	5	19	7211 881	7211 851	50
PG 9	5	22	7211 882	7211 852	50
PG 11	5	24	7211 883	7211 853	50
PG 13.5	6	27	7211 884	7211 854	50
PG 16	6	30	7211 885	7211 855	50
PG 21	6.5	36	7211 886	7211 856	20
PG 29	7.5	46	7211 887	7211 857	20
PG 36*	8	60	7211 888	7211 858	10
PG 42*	9	65	7211 889	7211 859	5
PG 48*	9.5	70	7211 890	7211 860	5
Metric					
M 12 x 1.5	5	19	7211 979	7211 974	50
M 16 x 1.5	5	22	7211 980	7211 975	50
M 20 x 1.5	5	24	7211 981	7211 976	50
M 25 x 1.5	6	30	7211 982	7211 977	50
M 32 x 1.5	7.5	38	7211 983	7211 978	50
M 40 x 1.5	8	50	7211 984	7211 990	20
M 50 x 1.5*	9	60	7211 985	7211 991	10
M 63 x 1.5*	10	75	7211 986	7211 992	5
NPT					
NPT 3/8"	5	22	7211 485	7211 495	50
NPT 1/2"	6	27	7211 486	7211 496	50
NPT 3/4"	6.5	36	7211 487	7211 497	25
NPT 1"	7	41	7211 488	7211 498	20



* Not glass fiber reinforced

Material:

- Stainless Steel
- 1.4404 / INOX 316L

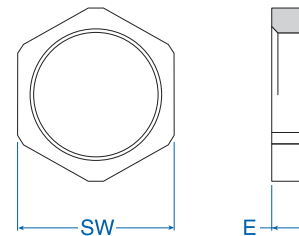
Characteristic feature:

- Metric thread



Stainless Steel

Thread	Thickness (E) mm	SW mm	Cat. No.	Std. Pk.
Metric				
M 12 x 1.5	3	15	6010112	50
M 16 x 1.5	3	19	6010116	50
M 20 x 1.5	3.5	24	6010120	50
M 25 x 1.5	3.5	30	6010125	25
M 32 x 1.5	4.5	35	6010132	20
M 40 x 1.5	4.5	45	6010140	10
M 50 x 1.5	5.5	55	6010150	10
M 63 x 1.5	6	70	6010163	5



This is one of our most popular series and is usually kept in stock.

Material:

- Nickel-plated brass

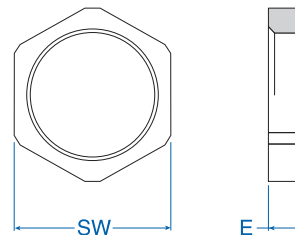
Characteristics:

- PG and Metric thread



Nickel-Plated Brass

Thread	Thickness (E) mm	SW mm	Cat. No.	Std. Pk.
PG (once according to DIN 46320)				
PG 7	2.9	15	6000070	50
PG 9	2.9	18	6000096	50
PG 11	2.9	21	6000118	50
PG 13.5	3.1	23	6000134	50
PG 16	3.1	26	6000169	50
PG 21	3.6	32	6000215	20
PG 29	4.1	41	6000290	20
PG 36	5.1	51	6000363	10
PG 42	5.1	60	6000428	5
PG 48	5.6	64	6000487	5
Metric				
M 12 x 1.5	3	15	6004121	50
M 16 x 1.5	3	20	6004164	50
M 20 x 1.5	3.5	24	6004202	50
M 25 x 1.5	3.5	30	6004253	25
M 32 x 1.5	4.5	35	6004326	20
M 40 x 1.5	4.5	45	6004407	10
M 50 x 1.5	4.5	55	6004504	10
M 63 x 1.5	6	70	6004636	5


Material:

- Nickel-plated brass

Characteristics:

- PG and Metric thread

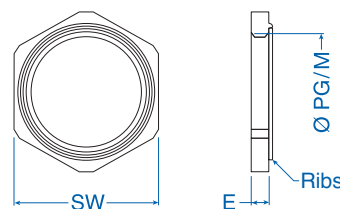
Applications:

- EMC applications



Nickel-Plated Brass, Ribbed

Thread	Thickness (E) mm	SW mm	Cat. No.	Std. Pk.
PG				
PG 7	2.9	15	6011007	50
PG 9	2.9	18	6011009	50
PG 11	3.1	21	6011011	50
PG 13.5	3.1	23	6011013	50
PG 16	3.1	26	6011016	50
PG 21	3.6	32	6011021	20
PG 29	4.1	41	6011029	20
PG 36	5.1	51	6011036	10
PG 42	5.1	60	6011042	10
PG 48	5.6	64	6011048	10
Metric				
M 12 x 1.5	3	15	6011112	50
M 16 x 1.5	3	20	6011116	50
M 20 x 1.5	3.5	24	6011120	50
M 25 x 1.5	3.5	30	6011125	25
M 32 x 1.5	4.5	35	6011132	20
M 40 x 1.5	4.5	45	6011140	10
M 50 x 1.5	5.5	55	6011150	10
M 63 x 1.5	6	70	6011163	10



This is one of our most popular series and is usually kept in stock.

Reducer *Polyamide*

Material:

- Polyamide
- Glass fiber reinforced

Characteristics:

- PG Thread
- Metric Thread

Temperature Range

-40 to 100°C
(-40 to 212°F)

External thread	Internal thread	SW mm	Thread length mm	Cat. No. Light Grey	Std. Pk.
PG 1					
Type A					
PG 9	PG 7	19	8	7005301	100
PG 11	PG 9	22	8	7005303	100
PG 13.5	PG 11	24	9	7005306	100
PG 16	PG 13.5	27	10	7005309	100
Type B					
PG 11	PG 7	22	8	7005302	100
PG 13.5	PG 7	24	9	7005304	100
PG 13.5	PG 9	24	9	7005305	100
PG 16	PG 9	27	10	7005307	100
PG 16	PG 11	27	10	7005308	100
PG 21	PG 11	32	11	7005310	100
PG 21	PG 13.5	32	11	7005311	100
PG 21	PG 16	32	11	7005312	100
PG 29	PG 13.5	40	11	7005313	50
PG 29	PG 16	40	11	7005314	50
PG 29	PG 21	40	11	7005315	50
PG 36	PG 16	50	13	7005316	50
PG 36	PG 21	50	13	7005317	50
PG 36	PG 29	50	18	7005318	50
PG 42	PG 21	55	18	7005319	25
PG 42	PG 29	55	18	7005320	25
PG 42	PG 36	55	18	7005321	25
PG 48	PG 29	60	18	7005322	25
PG 48	PG 36	60	14	7005323	25
PG 48	PG 42	60	17	7005324	25



Type B



Type A

External thread	Internal thread	SW mm	Thread length mm	Cat. No. Light Grey	Std. Pk.
Metric 1					
Metric 2					
M 16 x 1.5	M 12 x 1.5	20	8	7008516	50
M 20 x 1.5	M 12 x 1.5	24	8	7008519	50
M 20 x 1.5	M 16 x 1.5	24	9	7008520	50
M 25 x 1.5	M 12 x 1.5	29	8	7008523	50
M 25 x 1.5	M 16 x 1.5	29	8	7008524	50
M 25 x 1.5	M 20 x 1.5	30	10	7008525	20
M 32 x 1.5	M 16 x 1.5	36	10	7008530	50
M 32 x 1.5	M 20 x 1.5	36	10	7008531	50
M 32 x 1.5	M 25 x 1.5	36	11	7008532	20
M 40 x 1.5	M 20 x 1.5	46	10	7008538	50
M 40 x 1.5	M 25 x 1.5	46	10	7008539	20
M 40 x 1.5	M 32 x 1.5	44	12	7008540	20
M 50 x 1.5	M 25 x 1.5	55	12	7008548	20
M 50 x 1.5	M 32 x 1.5	55	12	7008549	20
M 50 x 1.5	M 40 x 1.5	55	13	7008550	10
M 63 x 1.5	M 32 x 1.5	68	12	7008561	20
M 63 x 1.5	M 40 x 1.5	68	12	7008562	20
M 63 x 1.5	M 50 x 1.5	70	15	7008563	5



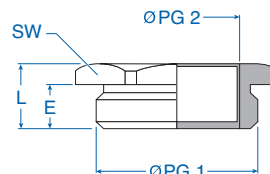
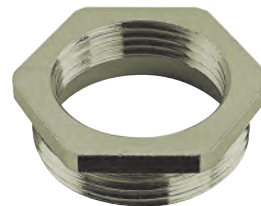
Material:

- Nickel-plated brass

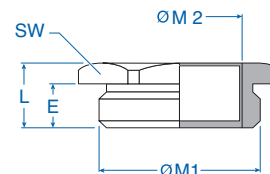
Characteristics:

- PG thread
- Metric thread
- Hexagon

External thread	Internal thread	SW mm	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
PG 1	PG 2					
PG 9	PG 7	17	5	8	6102018	100
PG 11	PG 9	19	6	9	6102034	100
PG 11	PG 7	19	6	9	6102030	100
PG 13.5	PG 11	21	6	9	6102077	100
PG 13.5	PG 9	21	6	9	6102042	100
PG 13.5	PG 7	21	6	8.5	6102026	100
PG 16	PG 13.5	23	6	9	6102115	100
PG 16	PG 11	23	6	9	6102085	100
PG 16	PG 9	23	6	9	6102050	100
PG 21	PG 7	24	7	10	6102158	100
PG 21	PG 13.5	29	7	10	6102123	50
PG 21	PG 11	29	7	10	6102093	20
PG 21	PG 9	29	7	10	6102069	50
PG 29	PG 21	39	8	11	6102190	25
PG 29	PG 16	39	8	11	6102166	25
PG 29	PG 13.5	39	8	11	6102131	25
PG 29	PG 11	39	8	11	6102107	25
PG 36	PG 29	50	8	11	6102220	25
PG 36	PG 21	50	8	11	6102204	25
PG 36	PG 13.5	50	8	11	6102140	25
PG 42	PG 36	64	10	14	6102241	25
PG 42	PG 29	64	10	14	6102239	25
PG 48	PG 42	64	10	14	6102258	25
PG 48	PG 36	64	10	14	6102255	25
PG 48	PG 29	64	10	14	6102247	25
PG 48	PG 21	64	10	14	6102212	25
PG 48	PG 16	64	10	14	6102182	25



Metric 1	Metric 2					
M 16 x 1.5	M 12 x 1.5	20	7	10	6102400	50
M 20 x 1.5	M 12 x 1.5	24	7	10	6102404	50
M 20 x 1.5	M 16 x 1.5	24	7	10	6102405	50
M 25 x 1.5	M 16 x 1.5	30	8	11.5	6102409	20
M 25 x 1.5	M 20 x 1.5	30	8	11.5	6102410	20
M 32 x 1.5	M 16 x 1.5	36	8.5	12.5	6102414	20
M 32 x 1.5	M 20 x 1.5	36	8.5	12.5	6102413	20
M 32 x 1.5	M 25 x 1.5	36	8.5	12.5	6102415	20
M 40 x 1.5	M 25 x 1.5	42	8.5	12.5	6102419	10
M 40 x 1.5	M 32 x 1.5	42	8.5	12.5	6102420	10
M 50 x 1.5	M 32 x 1.5	55	9.5	14.5	6102424	10
M 50 x 1.5	M 40 x 1.5	55	9.5	14.5	6102425	5
M 63 x 1.5	M 40 x 1.5	70	10.5	17.5	6102429	1
M 63 x 1.5	M 50 x 1.5	70	10.5	17.5	6102430	1
M 75 x 1.5	M 63 x 1.5	80	11.5	19.5	6102435	1


Material:

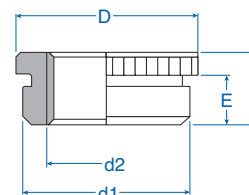
- Nickel-plated brass

Characteristics:

- PG/Metric external thread
- PG/Metric internal thread
- Round ribbed

Nickel-Plated Brass, Ribbed

External thread (d1)	Internal thread (d2)	Diameter mm (D)	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
Metric	PG					
M 16 x 1.5	PG 7	20	6	9	6104716	100
M 20 x 1.5	PG 9	24	6.5	9.5	6104720	50
M 25 x 1.5	PG 11	30	7	10	6104725	50
M 25 x 1.5	PG 13.5	30	7	10	6104726	50
M 25 x 1.5	PG 16	30	7	10	6104727	50
M 32 x 1.5	PG 16	34	8	11.5	6104732	20
M 32 x 1.5	PG 21	34	8	11.5	6104733	20
M 40 x 1.5	PG 21	50	9	12	6104740	10
M 50 x 1.5	PG 29	57	9	12	6104750	5
M 63 x 1.5	PG 36	70	10.5	14.5	6104763	1
M 63 x 1.5	PG 42	70	10.5	14.5	6104764	1



Enlarger *Polyamide*

Material:

- Polyamide glass fiber reinforced

Characteristics:

- PG/Metric external thread
- PG/Metric internal thread

External thread	Internal thread	SW mm	Thread length mm	Complete length mm	Cat. No. Light Gray	Std. Pk.
PG 1	PG 2					
PG 7	PG 9	19	7	20	7004200	100
PG 9	PG 11	22	8	23	7004201	100
PG 11	PG 13.5	24	8	23	7004202	100
PG 13.5	PG 16	27	9	26	7004203	100
PG 16	PG 21	32	9	29	7004204	100
PG 21	PG 29	42	10	32	7004205	50
PG 29	PG 36	53	11	35.5	7004206	25
PG 36	PG 42	60	13	40.5	7004207	10
PG 42	PG 48	65	13	41	7004208	10
Metric 1	Metric 2					
M12 x 1.5	M16 x 1.5	20	8	18.5	7004300	50
M16 x 1.5	M20 x 1.5	24	8	20	7004301	50
M20 x 1.5	M25 x 1.5	30	9	22	7004302	50
M25 x 1.5	M32 x 1.5	36	10	24	7004303	20
M32 x 1.5	M40 x 1.5	44	11	26	7004304	20
M40 x 1.5	M50 x 1.5	55	12	28	7004305	20
M50 x 1.5	M63 x 1.5	70	13	31.5	7004306	10



Temperature Range
-30 to 100°C
(-22 to 212°F)

Material:

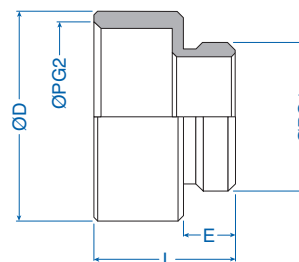
- Nickel-plated brass

Characteristics:

- PG external thread
- PG internal thread
- Round

According to DIN 259 and formerly by DIN 46320

External thread	Internal thread	Diameter mm (D)	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
PG 1	PG 2					
PG 7	PG 9	17	5	15	6200010	50
PG 9	PG 11	20	6	16.5	6200028	50
PG 9	PG 13.5	22	6	17.5	6200036	50
PG 11	PG 13.5	22	6	17.5	6200044	50
PG 11	PG 16	24	6	18.5	6200052	25
PG 13.5	PG 16	24	6.5	19	6200060	25
PG 13.5	PG 21	30	6.5	21	6200079	20
PG 16	PG 21	30	6.5	21	6200087	20
PG 21	PG 29	39	7	23	6200095	15
PG 29	PG 36	50	8	28	6200109	10
PG 36	PG 42	57	9	31	6200117	10
PG 42	PG 48	64	10	33	6200125	10

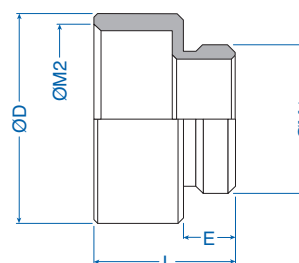

Material:

- Nickel-plated brass

Characteristics:

- Metric external thread
- Metric internal thread
- Round

External thread	Internal thread	Diameter mm (D)	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
Metric 1	Metric 2					
M 12 x 1.5	M 16 x 1.5	18	5	15	6200212	50
M 16 x 1.5	M 20 x 1.5	22	6	17.5	6200216	50
M 20 x 1.5	M 25 x 1.5	27	6.5	19	6200220	50
M 25 x 1.5	M 32 x 1.5	34	8	20.5	6200225	20
M 32 x 1.5	M 40 x 1.5	42	7	23	6200232	20
M 40 x 1.5	M 50 x 1.5	53	9	31	6200240	10
M 50 x 1.5	M 63 x 1.5	65	9.5	24	6200250	5
M 63 x 1.5	M 75 x 1.5	80	10.5	26	6200263	1

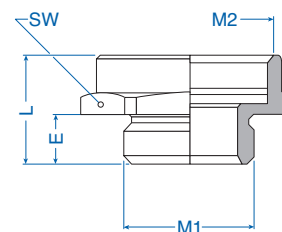

Material:

- Nickel-plated brass

Characteristics:

- Metric external thread
- Metric internal thread
- Hexagon

External thread	Internal thread	SW mm	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
Metric 1	Metric 2					
M12 x 1.5	M16 x 1.5	19	7	19	6200312	50
M16 x 1.5	M20 x 1.5	22	7	19	6200316	50
M20 x 1.5	M25 x 1.5	28	7	20	6200320	50
M25 x 1.5	M32 x 1.5	36	8	21.5	6200325	20
M32 x 1.5	M40 x 1.5	42	8.5	22	6200332	20
M40 x 1.5	M50 x 1.5	52	8.5	23	6200340	10
M50 x 1.5	M63 x 1.5	65	9.5	25	6200350	5
M63 x 1.5	M75 x 1.5	80	10.5	27.5	6200363	1



Adapter *Nickel-Plated Brass*

Material:

- Nickel-plated brass

Characteristics:

- PG external thread
- Metric internal thread
- Hexagon

External thread	Internal thread	SW mm	Thread length mm	Complete length mm	Cat. No.	Std. Pk.
PG Form A	Metric					
PG 7	M 12 x 1.5	17	6.5	16.5	6604807	50
PG 7	M 16 x 1.5	19	6.5	16.5	6604808	50
PG 9	M 16 x 1.5	19	6.5	16.5	6604810	50
PG 9	M 20 x 1.5	22	6.5	18.5	6604811	50
PG 11	M 20 x 1.5	22	7	17	6604813	50
PG 11	M 25 x 1.5	27	7	18	6604814	50
PG 13.5	M 20 x 1.5	24	7	17	6604816	50
PG 13.5	M 25 x 1.5	27	7	18	6604817	50
PG 16	M 20 x 1.5	27	7	16	6604818	50
PG 16	M 25 x 1.5	27	7	18	6604819	50
PG 16	M 32 x 1.5	36	7	18.5	6604820	50
PG 21	M 32 x 1.5	36	8	19.5	6604822	20
PG 21	M 40 x 1.5	42	8	19.5	6604823	20
PG 29	M 40 x 1.5	42	8.5	20	6604831	20
PG 29	M 50 x 1.5	55	8.5	21	6604832	20
PG 36	M 50 x 1.5	55	8.5	21	6604837	10
PG 42	M 63 x 1.5	65	10	23.5	6604843	5
PG 48	M 63 x 1.5	65	10	24.5	6604849	5
PG 48	M 75 x 1.5	80	10	24.5	6604850	5
Form B						
PG 9	M 12 x 1.5	19	6.5	10	6604809	50
PG 11	M 16 x 1.5	22	7	11	6604812	50
PG 13.5	M 16 x 1.5	24	7	11	6604815	50
PG 21	M 25 x 1.5	32	8	13	6604821	20
PG 29	M 25 x 1.5	40	8.5	14	6604829	20
PG 29	M 32 x 1.5	40	8.5	14	6604830	20
PG 36	M 40 x 1.5	55	8.5	15	6604836	10
PG 42	M 50 x 1.5	58	10	16.5	6604842	5
PG 48	M 50 x 1.5	65	10	17	6604848	5



Form A



Form B

Material:

- Nickel-plated brass

Characteristics:

- Metric external thread
- PG internal thread
- Hexagon

External thread	Internal thread	SW mm	Thread length mm	Complete length mm	Cat. No.	Std. Pk.
Metric Form A						
M 12 x 1.5	PG 7	14	7	17	6604712	100
M 16 x 1.5	PG 9	18	7	17.5	6604716	50
M 16 x 1.5	PG 11	20	7	18	6604715	50
M 16 x 1.5	PG 13.5	22	7	19.5	6604709	50
M 20 x 1.5	PG 11	22	7	18	6604720	50
M 20 x 1.5	PG 13.5	22	7	19.5	6604721	50
M 20 x 1.5	PG 16	24	7	20.5	6604722	50
M 20 x 1.5	PG 21	32	7	22.5	6604708	50
M 25 x 1.5	PG 16	27	8	21.5	6604726	50
M 25 x 1.5	PG 21	32	8	23.0	6604725	50
M 25 x 1.5	PG 29	40	8	25	6604727	20
M 32 x 1.5	PG 21	34	8.5	23.5	6604729	20
M 32 x 1.5	PG 29	40	8.5	25.0	6604732	10
M 50 x 1.5	PG 36	52	9.5	29	6604742	10
M 50 x 1.5	PG 42	58	9.5	31.5	6604750	5
M 63 x 1.5	PG 48	65	10.5	32.5	6604763	1
Form B						
M 20 x 1.5	PG 9	22	7	11	6604719	50
M 25 x 1.5	PG 13.5	27	8	12	6604724	50
M 32 x 1.5	PG 13.5	34	8.5	12.5	6604706	20
M 32 x 1.5	PG 16	34	8.5	12.5	6604728	20
M 32 x 1.5	PG 21	34	8.5	12.5	6604730	20
M 40 x 1.5	PG 16	42	8.5	13.5	6604705	10
M 40 x 1.5	PG 21	42	8.5	13.5	6604733	10
M 40 x 1.5	PG 29	42	8.5	13.5	6604735	20
M 50 x 1.5	PG 21	52	9.5	15.5	6604704	10



Form A



Form B

Adapter *Nickel-Plated Brass*

Material:

- Nickel-Plated Brass

Characteristics:

- PG/Metric external thread
- NPT internal thread
- Hexagon

External thread	Internal thread	SW mm	Thread length mm	Complete length mm	Cat. No.	Std. Pk.
PG Form A						
PG 7	NPT 3/8"	19	5	19.5	6400400	50
PG 9	NPT 1/2"	24	6	24	6400401	50
PG 11	NPT 1/2"	24	6	24	6400402	50
PG 13.5	NPT 1/2"	24	6.5	24.5	6400403	50
PG 13.5	NPT 3/4"	30	6.5	25	6400404	50
PG 16	NPT 1/2"	24	6.5	24.5	6400405	50
PG 16	NPT 3/4"	30	6.5	25	6400406	50
PG 21	NPT 3/4"	30	7	23	6400407	20
PG 21	NPT 1"	36	7	30	6400408	20
PG 29	NPT 1 1/4"	50	8	32	6400410	20
PG 36	NPT 1 1/2"	55	9	34	6400412	10
PG 48	NPT 2"	64	10	35	6400415	5
Form B						
PG 29	NPT 1"	40	8	18	6400409	20
PG 36	NPT 1 1/4"	50	9	18.5	6400411	10
PG 42	NPT 1 1/2"	60	10	19.5	6400413	5
PG 48	NPT 1 1/2"	64	10	19.5	6400414	5
Metric Form A						
M16 x 1.5	NPT 3/8"	19	7	21.5	6402316	50
M16 x 1.5	NPT 1/2"	24	7	25	6402317	50
M20 x 1.5	NPT 1/2"	24	7	25	6402321	50
M25 x 1.5	NPT 3/4"	30	8	27	6402326	20
M32 x 1.5	NPT 1"	36	8.5	31	6402333	10
Form B						
M20 x 1.5	NPT 3/8"	24	7	13	6402320	50
M25 x 1.5	NPT 1/2"	30	8	15	6402325	20
M32 x 1.5	NPT 3/4"	36	8.5	15.5	6402332	10



Form A



Form B

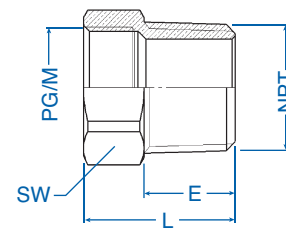
Material:

- Nickel-plated brass

Characteristics:

- NPT external thread
- PG or M internal thread
- Hexagon

External Thread	Internal Thread	SW mm	Thread Length mm (E)	Complete Length mm (L)	Cat. No.	Std. Pk.
NPT	PG					
3/8"	PG 7	19.0	15.0	20.0	6402020	50
1/2"	PG 9	22.0	20.0	25.0	6402038	50
1/2"	PG 11	22.0	20.0	28.0	6402046	50
1/2"	PG 13.5	24.0	20.0	30.0	6402054	50
1/2"	PG 16	24.0	20.0	30.0	6402055	50
3/4"	PG 11	29.0	20.0	30.0	6402060	50
3/4"	PG 13.5	29.0	20.0	30.0	6402062	50
3/4"	PG 16	29.0	20.0	30.0	6402070	50
3/4"	PG 21	32.0	20.0	32.0	6402072	50
1"	PG 16	36.0	25.0	35.0	6402087	20
1"	PG 21	36.0	25.0	35.0	6402089	20
1"	PG 29	42.0	25.0	38.0	6402091	20
1 1/4"	PG 29	46.0	25.0	35.0	6402097	20
1 1/4"	PG 36	50.0	25.0	42.0	6402099	10
1 1/2"	PG 36	52.0	26.0	42.0	6402100	10
1 1/2"	PG 48	65.0	26.0	49.0	6402102	5
2"	PG 48	65.0	27.0	50.0	6402119	5
NPT	Metric					
3/8"	M 20	23.0	15.0	26.0	6402214	50
3/8"	M 25	28.0	15.0	27.0	6402215	50
1/2"	M 20	23.0	20.0	30.0	6402216	50
1/2"	M 25	28.0	20.0	32.0	6402217	50
1"	M 20	36.0	25.0	31.0	6402218	20
1"	M 25	36.0	25.0	31.0	6402219	20



Plug

Material:

- Polyamide
- 25 % glass fiber reinforced

Characteristics:

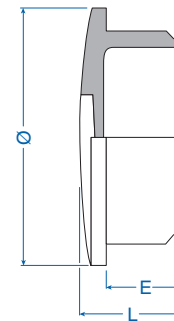
- PG/Metric
- Round, with slot

Temperature Range

-30 to 120°C
(-22 to 248°F)

Polyamide

External thread	Diameter mm	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
PG					
PG 7	15	6	8	7215517	100
PG 9	19	6	9	7215525	100
PG 11	22	6	9	7215533	100
PG 13.5	25	6	9.5	7215541	100
PG 16	27	6	9.5	7215550	100
PG 21	33	8	11	7215568	100
PG 29	44	8	12	7215576	100
PG 36	55	10	15	7215584	50
PG 42	62	10	16	7215592	50
PG 48	69	12	18.5	7215606	50
Metric					
M 12 x 1.5	16	6	8	7217312	50
M 16 x 1.5	20	6	8	7217316	50
M 20 x 1.5	26	8	10.5	7217320	50
M 25 x 1.5	32	8	11	7217325	20
M 32 x 1.5	40	10	13.5	7217332	20
M 40 x 1.5	48	10	14	7217340	20
M 50 x 1.5	55	12	17	7217350	10
M 63 x 1.5	70	12	18	7217363	5



Material:

- Nickel-plated brass
- O-ring, Nitril

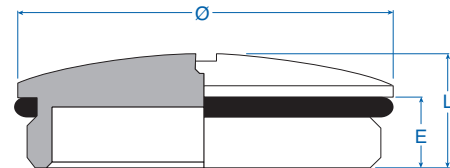
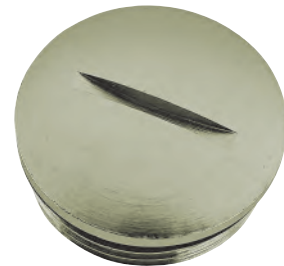
Characteristics:

- PG/Metric thread
- Round, with slot



Nickel-Plated Brass

External thread	Diameter mm	Thread length mm (E)	Complete length mm (L)	Cat. No.	Std. Pk.
PG					
PG 7	14	5	8	6700507	50
PG 9	17	6	9	6700509	50
PG 11	20	6	9	6700511	50
PG 13.5	22	6.5	9.5	6700513	50
PG 16	24	6.5	9.5	6700516	25
PG 21	30	7	11	6700521	20
PG 29	39	8	12	6700529	15
PG 36	50	9	15	6700536	10
PG 42	57	10	16	6700542	10
PG 48	64	10	16	6700548	10
Metric					
M 12 x 1.5	14	5	7	6700612	100
M 16 x 1.5	18	6	8	6700616	100
M 20 x 1.5	22	6.5	8.5	6700620	100
M 25 x 1.5	27	7	10	6700625	100
M 32 x 1.5	34	8	11	6700632	50
M 40 x 1.5	44	9	13	6700640	50
M 50 x 1.5	54	10	14.5	6700650	25
M 63 x 1.5	67	10	15	6700663	25

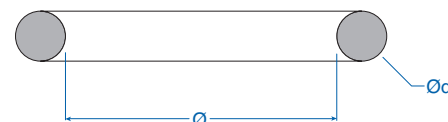
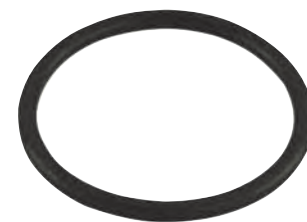


Material:
• Perbunan

Characteristics:
• PG and metric

Temperature Range
-25 to 120°C (-13 to 248°F)

Connecting thread		Internal Diameter mm	Thickness mm (d)	Cat. No.	Std. Pk.
PG	Metric				
PG 7	M 12	10	1.5	8112070	1000
PG 9	M 16	13	1.5	8112096	1000
PG 11		16	1.5	8112118	1000
PG 13.5	M 20	18	1.5	8112134	1000
PG 16		20	1.5	8112169	1000
PG 21		25	2	8112215	1000
	M 25	22	2	8112250	100
	M 32	28	2	8112320	100
PG 29		33	2	8112290	1000
	M 40	37	2	8112400	100
PG 36		43	2	8112363	1000
	M 50	48	2	8112500	100
PG 42		50	2	8112428	1000
PG 48	M 63	55	2	8112630	1000
	M 75	68	2.6	8112675	100



Sealing Ring *Neoprene*

Material:
• Neoprene, black

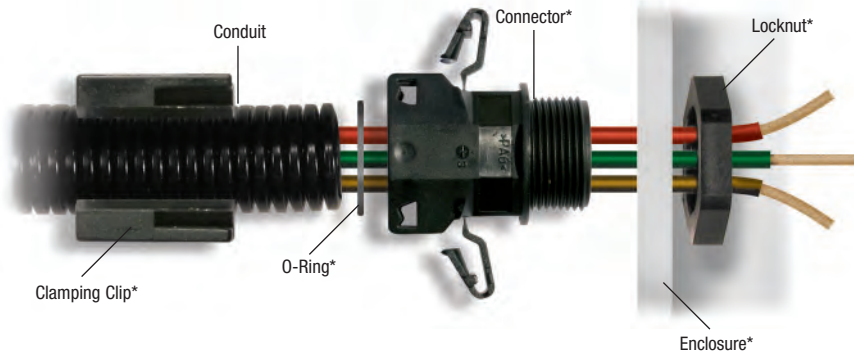
Characteristics:
• PG, metric and NPT

Temperature Range
-40 to 100°C (-40 to 212°F)

Connecting thread	External diameter mm	Internal diameter mm	Thickness mm	Cat. No.	Std. Pk.
PG					
PG 7	17	11.3	1.2	8113301	100
PG 9	20	13.9	1.2	8113302	100
PG 11/NPT 3/8	23	17.1	1.2	8113303	100
PG 13.5	25	19.0	1.2	8113304	100
PG 16/NPT 1/2	27	21.0	1.2	8113305	100
PG 21/NPT 3/4	34	26.6	1.5	8113306	50
PG 29/NPT 1	45	35.2	1.5	8113307	50
PG 36	56	45.2	1.5	8113308	50
PG 42	67	52.2	1.5	8113309	50
PG 48	72	57.7	1.5	8113310	50
Metric					
M 12	15	10	1.2	8113490	100
M 16	20	13.9	1.2	8113302	100
M 20	24	18	1.2	8113492	100
M 25	30	23	1.2	8113493	100
M 32	40	30	1.5	8113494	100
M 40	48	38	1.5	8113495	100
M 50	58	48	1.5	8113496	100
M 63	75	61	1.5	8113497	100
M 75	90	73	1.5	8113498	100



This is one of our most popular series and is usually kept in stock.



PROTECTION RATING

IP65 without sealing

IP68 with O-Ring

Material:

- Polyamide 6

Upper temperature range:

- Short-term: 150°C (302°F)

Characteristics:

- Parallel corrugated
- Gray available

Technical properties:

- Flame retardant according to FMVSS302 and UL94
- Halogen free
- Durable
- UV resistant according to DIN EN ISO 8580

Applications:

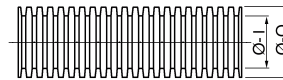
Engine compartment, car body and interior, machines, instruments, devices, ship and train building, switch cabinet and movable machine parts.



Other materials and styles available, please consult Altech.

Temperature Range	
-40 to 120°C	(-40 to 248°F)

NW	Ø-I mm	Ø-O mm	Bending Radius mm	Cat. No. Black	Std. Pk. Meters
7.5	6.7	10.0	13	1200070	50
8.5	8.4	11.7	15	1200089	50
10	9.9	13.0	20	1200100	50
12	12.2	15.7	30	1200127	50
13	12.7	15.8	35	1200135	50
14	14.2	18.5	40	1200143	50
16	15.0	18.9	45	1200160	50
17	16.6	21.2	45	1200178	50
19	19.3	24.3	50	1200194	50
22	21.3	25.4	50	1200224	50
23	23.2	28.3	55	1200232	50
26	25.8	31.2	60	1200267	25
29	29.0	34.5	65	1200291	25
37	36.0	42.4	90	1200372	25
50	47.7	54.0	100	1200500	25



*Fitting conduit glands and accessories: see pages 37-39.

This is one of our most popular series and is usually kept in stock.

Conduit Gland Straight

Quick-Mounting System for Polyflex PA 6 Conduit

Material:

- Polyamide 66

Technical properties:

- Easy and tight single hand mounting
- Insert tube in the "closed" gland
- Special click-in system
- Conical sealing on the corrugated tube
- Gray available
- Thread side sealed by integral sealing ridges
- Conduit can be rotated within the mounting gland
- Halogen free

Applications:

- All fields using conduit

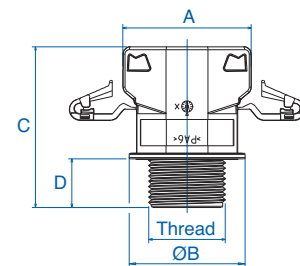
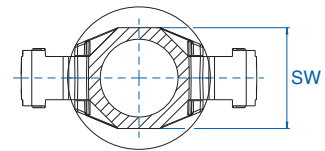
Mounting instructions:

Insert the conduit with a short twist all the way into the end of the SEM conduit gland.
Pull the tube back slightly to latch it securely.

Temperature Range
-40 to 120°C (-40 to 248°F)



Thread	Fits for NW	D mm	SW mm	A mm	B mm	C mm	Cat. No. Black	Std. Pk.
PG								
PG 7	7.5	11.0	14.0	19.0	18.0	34.0	3805028	50
PG 7	8.5	11.0	16.0	20.6	20.0	35.0	3805012	50
PG 9	10	12.0	17.0	21.6	22.0	36.0	3805004	50
PG 11	12 + 13	12.0	20.0	25.5	25.0	38.0	3805009	50
PG 13.5	17	13.0	27.0	34.5	31.0	43.0	3805005	50
PG 16	17	13.0	27.0	34.5	31.0	43.0	3805006	50
PG 21	22	13.0	32.0	40.5	36.0	48.0	3805023	25
PG 21	23	13.0	34.0	42.5	38.0	48.0	3805014	25
PG 29	29	15.0	41.0	49.5	46.0	52.0	3805016	20
PG 36	37	17.0	50.0	59.0	55.0	62.0	3805018	10
PG 48	50	19.0	64.0	72.0	72.0	68.0	3805021	5
Metric								
M 12 x 1.5	7.5	11.0	14.0	19.0	18.0	34.0	3805047	50
M 12 x 1.5	8.5	11.0	16.0	20.6	20.0	35.0	3805011	50
M 16 x 1.5	10	12.0	17.0	21.6	22.0	36.0	3805001	50
M 16 x 1.5	12 + 13	12.0	20.0	25.5	25.0	38.0	3805007	50
M 20 x 1.5	12 + 13	12.0	20.0	25.5	25.0	38.0	3805008	50
M 20 x 1.5	17	13.0	27.0	34.5	31.0	43.0	3805002	50
M 25 x 1.5	22	13.0	32.0	40.5	36.0	48.0	3805022	25
M 25 x 1.5	23	13.0	34.0	42.5	38.0	48.0	3805013	25
M 32 x 1.5	29	15.0	41.0	49.5	46.0	52.0	3805015	20
M 40 x 1.5	37	17.0	50.0	59.0	55.0	62.0	3805017	10
M 63 x 1.5	50	19.0	64.0	72.0	72.0	68.0	3805020	5



This is one of our most popular series and is usually kept in stock.

*With O-ring, see page 39.
Locknuts sold separately, see page 24.

Conduit Gland angled 90°

Quick-Mounting System for Polyflex PA 6 Conduit

Material:

- Polyamide 66

Technical properties:

- Easy and tight single hand mounting
- Insert tube in "closed" gland
- Special click-in system
- Conical sealing on the corrugated tube
- Thread side sealed by integral sealing ridges
- Gray available
- Conduit can be rotated within the mounting gland
- Halogen free

Applications:

All fields using conduit

Mounting instructions:

Insert the conduit with a short twist all the way into the end of the SEM conduit gland.
Pull the tube back slightly to latch it securely.

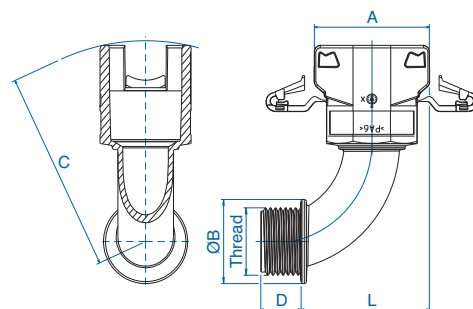
PROTECTION RATING
IP65 / **IP68** *



Temperature Range

-40 to 120°C
(-40 to 248°F)

Thread	Fits NW	D mm	L mm	A mm	B mm	C mm	Cat. No. Black	Std. Pk.
PG								
PG 9	10	12.0	29.0	21.6	20.0	50.0	3805201	50
PG 11	12 + 13	12.0	34.0	25.5	25.0	54.6	3805207	50
PG 16	17	13.0	44.5	34.5	31.0	65.8	3805213	25
PG 21	23	13.0	51.5	42.5	38.0	74.1	3805219	20
PG 29	29	15.0	63.5	49.5	48.0	86.8	3805225	10
PG 36	37	17.0	74.5	59.0	56.0	104.8	3805231	10
PG 48	50	19.0	99.8	72.0	72.0	129.0	3805237	5
Metric								
M 16 x 1.5	10	12.0	29.0	21.6	20.0	50.0	3805200	50
M 20 x 1.5	12 + 13	12.0	34.0	25.5	25.0	54.6	3805206	50
M 20 x 1.5	17	12.0	38.5	34.5	25.0	59.7	3805211	25
M 25 x 1.5	23	13.0	48.5	42.5	31.0	71.3	3805217	20
M 32 x 1.5	29	13.0	54.5	49.5	38.0	77.2	3805223	10
M 40 x 1.5	37	15.0	68.5	59.0	48.0	95.6	3805229	10
M 63 x 1.5	50	19.0	99.8	72.0	72.0	129.0	3805236	5



*With O-ring, see page 39.

Locknuts sold separately, see page 24.

O-Ring for Corrugated Tubes and Clamping Clips **Altech**[®]

Material:

- NBR 70

Characteristics:

- Shore: 70 ± 5

Features:

The O-ring must be mounted into the first groove of the conduit.

The conduit, with its pre-mounted sealing ring, must be inserted into the SEM gland and simply twisted into the end.



Temperature Range
-30 to 120°C (-22 to 248°F)

Fits for NW	Internal Diameter mm	Thickness mm	Cat. No.	Std. Pk.
7.5	5.0	1.5	8112800	50
8.5	7.0	1.2	8112801	50
10	7.0	1.5	8112802	50
12	9.0	1.5	8112804	50
13	8.0	1.6	8112803	50
17	14.0	1.8	8112807	50
22	14.0	2.0	8112808	25
23	18.0	2.0	8112809	25
29	20.0	2.5	8112810	20
37	24.0	2.5	8112811	10
50*	28.0	2.5	8112813	5

* NW50 parts require 2 o-rings (one in first and one in second groove of corrugated tube).

Clamping Clip for conduit tubes

Material:

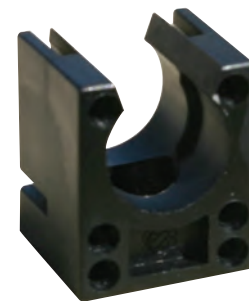
- Polyamide

Color:

- Black

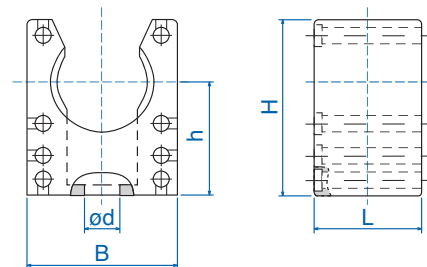
Technical Properties:

- Stackable
- Quick mounting of conduits
- Center rib for traction relief



Temperature Range
-40 to 105°C (-40 to 221°F)

Suitable for NW	B mm	H mm	h mm	L mm	d mm	Cat. No.	Std. Pk.
7.5	20.0	18.0	12.0	20.0	4.2	8221050	100
10	20.0	23.0	15.5	20.0	5.5	8221051	100
12 + 13	22.0	26.0	17.1	20.0	5.5	8221052	50
14 + 16	28.0	33.0	21.1	20.0	6.5	8221053	50
17	28.0	33.0	21.4	20.0	6.5	8221054	50
23	35.0	40.0	24.8	20.0	6.5	8221055	50
29	43.0	45.0	26.8	20.0	6.5	8221056	50
37	54.0	53.0	30.8	20.0	6.5	8221057	20
50	68.0	66.0	37.8	20.0	6.5	8221058	20



Technical Annex *Chemical resistance of plastic materials*

+ stands for: resistant o stands for: conditionally resistant - stands for: not resistant	Concentration %	at temp. +°C	Poly- amide	Poly- amide	Poly- amide	Thermo- plastic Polyurethane	Poly- propylene	Poly- ethylene	Poly- ethylene	Poly- styrene	Thermo- plastic elastomere	Nitrile- butadiene- rubber
			PA 6	PA 66	PA 12	PU	PP	HD-PE	LD-PE	PS	TPE	NBR
Acetaldehyde	40	20	o	o	+		+					20°C o
Acetic acid	100	20					+	+	+			o
Acetone	100	20	+	+	+	-	+	o	o			-
Acrylic acid	100	> 30	-	-	-					-		
Allyl alcohol	96	20	o	o	+		+	+	+	20% +		
Alum, hydrous	dilute	40					+	+	+	+		20°C +
Aluminium chloride, hydrous	dilute	40					+	+	+	+		20°C +
Aluminium sulphate, hydrous	dilute	40					+	+	+	+		20°C +
Ammonia solution, hydrous	saturated	20	20% +	20% +	20% +		+	+	+	20% +		
Ammonium chloride, hydrous	saturated	60				3% o	+	+	+			20% +
Ammonium nitrate, hydrous	dilute	40					+	+	+	+		20% +
Ammonium sulphate, hydrous	dilute	40					+	+	+			-
Aniline hydrochloride, hydrous	saturated	20					+	o	o			
Aniline, pure	100	20	o	o	o		+	+	+	-	+	
Benzaldehyde, hydrous	saturated	20	pure o	pure o	pure o		+			-		-
Benzene	100	20	+	+	+		o	+	o	-	o	+
Benzoic acid, hydrous	any	40	20% o	20% o			+	+	+	+		-
Benzole	100	20	+	+	+		o	o	o	-		-
Bleaching liquor	12,5 Cl	20	-	-	o	3% -	+	+	+	+		-
Borax, hydrous	dilute	40					+	+	+	+		20% o
Boric acid, hydrous	dilute	40	o	o	o	3% o	+	+	+			20% +
Bromine, liquid	100	20	-	-	-		-	-	-	-	-	-
Butanediol, hydrous	to 10	20	pure +	pure +			+	+	+			
Butanol	to 100	20					+	+	+	+		+
Butylacetate	100	20	+	+	+		o	o	o	-		-
Calcium chloride, hydrous	saturated	40	+	+	+		+	+	+	+		20% +
Carbon bisulphide	100	20	+	+	+		+	o	o	-		-
Carbon dioxide	100	60	+	+	+							20% +
Carbon dioxide, dry	100	60					+	+	+	50°C +		20% +
Carbon tetrachloride	100	20	+	+	+		-	o	-	-		
Caustic potash solution, hydrous	50	20	+	+	+		+	+	+	+	10% +	
Caustic soda lye, hydrous	10	20	+	+	+	3% o	+	+	+	+	50% +	
Chlorine	any	20	-	-	-		-	-	-	-		-
Chrome alum, hydrous	dilute	40					+	+	+			20% +
Citric Acid	to 10	40	20% +	20% +	20% +	3% o	+	+	+	+		20% +
Cooling liquids DIN 53521		120	o	o								
Copper monochloride, hydrous	saturated	20					+	+	+			+
Copper sulphate, hydrous	saturated	60					+	+	+			20% +
Cresol, hydrous	to 90	20	pure -	pure -			+	+	o	o		-
Cyclohexanol	-	20	+	+	+		+	+	+	+		+
Diesel fuel		85	+	+	+	20% +	20% +	20% +	20% +			
Drilling oil			+	+	+							
Ethanoic acid	10	20	o	o	+	3% o	+	+	+	o	+	
Ethyl alcohol, hydrous	10	20	40 Vol.%+	40 Vol.%+	40 Vol.%+		+				+	+
Ethyl dichloride	100	20					o	-	-			-
Ethyl ether	100	20					o					o
Ethylene oxide, liquid	100	20					o					
Ferric cyanide, hydrous	saturated	60					+	+	+			
Ferrous chloride, hydrous, indiff.	10	20	+	+		+	+	+	+		+	
Fluorine	50	40	pure -	pure -	pure -		-	-	-			
Formaldehyde, hydrous	dilute	40	pure +	pure +	pure +		40% +	40% +	40% +	30% +		20°C o
Formic acid, hydrous	10	20	o	o	+		+	+		+		
Glucose, hydrous	any	50					+	+	+			
Hydraulic fluid, hardly inflammable		80	+	+	+							
Hydraulic oil H and HL (DIN 51524)		100	+	+	+							

	Concentration %	at temp. +°C	Polyamide	Polyamide	Polyamide	Thermoplastic Polyurethane	Polypropylene	Polyethylene	Polyethylene	Polystyrene	Thermoplastic elastomere	Nitrile-butadiene-rubber
Reagens			PA 6	PA 66	PA 12	PU	PP	HD-PE	LD-PE	PS	TPE	NBR
Hydrobromic acid, hydrous	to 10	40	-	-	-		+	+	+			-
Hydrochloric acid, hydrous	30	20	20% -	20% -	20% -	3% -	+	+	+	15% +	10% +	0
Hydrogen	100	60	20°C +	20°C +	20°C +		+	+	+			20°C +
Hydrosilicofluoric acid, hydrous	to 30	20	-	-			+	+	+			
Hydroxylamine sulphate, hydrous	to 12	30					+					
Kerosine	100	80	+	+	+		20°C +	20°C +	20°C o	-		
Lactic acid, hydrous	to 90	20	10% +	10% +	10% +	3% o	+	+	+	80% +		+
Lubricating grease, base diester oil		110	o	o								
Lubricating grease (base polyphenyle ester)		110	+	+	+							
Lubricating grease, base silicone oil		110	+	+	+							
Magnesium carbonate, hydrous	saturated	100					+			50°C +		
Magnesium chloride, hydrous	saturated	20	10% +	10% +	10% +		+	+	+	+		+
Mercury	pure	20	+	+	+		+	+	+	+		+
Methyl alcohol	100	20	+	+	+		40°C +	+	+	+	+	+
Methylene chloride	100	20	o	o	o		o	o	-			
Mineral oil			+	+	+		20°C +	20°C +	20°C +			
Nickel chloride, hydrous	saturated	20	10% o	10% o	10% o		+			+		+
Nickel sulphate, hydrous	saturated	20	10% o	10% o	10% o		+	+	+			+
Nitric acid, hydrous	50	20	-	-	-	3% -	o	o	o	30% +		-
Nitro glycerin	dilute	20						-	-			
Oil and grease		20	+	+	+		o				o	
Oleic acid	-	20	+	+	+		+	+	+	+		o
Oxalic acid	any	20	10% o	10% o	10% o	3% o	+	+	+	+		o
Ozone	pure		-	-	-		o	o	o			
Phosgene, gaesous	100	20					o	o	o			
Phosphoric acid, hydrous	dilute	20	10% -	10% -	10% -	3% o	+	+	+	86% +		-
Phosphorus pentoxide	100	20					+					
Potassium bromide, hydrous	any	20	10% +	10% +	10% +		+	+	+	+		
Potassium chloride, hydrous	10	20	+	+	+		+	+	+	+		+
Potassium dichromate, hydrous	40	20	5% o	5% o	5% o		+	+	+			+
Potassium nitrate, hydrous	any	20	10% +	10% +	10% +		+	+	+	+		+
Potassium permanganate, hydrous	saturated	20					+			+		
Sea water		40	+	+	+	20°C +	+	+	+	+	+	20°C +
Soap solution, hydrous	any	20	dilute +	dilute +	dilute +		+	+	+			+
Sodium chlorate, hydrous	saturated	20	10% o	10% o	10% o		+	+	+			
Sodium sulphide, hydrous	dilute	40					+	+	+			
Sulphuric acid, hydrous	10	20	-	-	-	3% -	50% +	50% +	50% +	+	98% +	-
Tin dichloride, hydrous	dilute	40					+	+	+	-	10% +	20°C +
Toluene	100	20	+	+	+	-		o	o	o		-
Trichloroethylene	100	20	o	o	o		o	o	-			
Urea, hydrous	to 10	40	20% +	20% +	20% +		+	+	+	+		
Vinyl acetate	100	20					+					
Waste Gas tight, containing carbon dioxide	any	60						+	+			
Waste Gas tight, containing SO2	low	60						+	+			
Xylene	100	20	+	+	+		-	o	o	-		-
Zinc chloride, hydrous	dilute	60	10% o	10% o			+	+	+	50°C +		20°C +
Zinc sulphate, hydrous	dilute	60					+	+	+			20°C +

Source: Plastic Table, B. Carlowitz, Carl Hanser Verlag, et. al.

The above mentioned data enable a preselection. However it is not the use of the data, to promise definite properties of the products or their suitability for a concrete application purpose. The data doesn't release the purchaser to control the quality conformance.

Protection Modes to EN 60529 DIN VDE 0470 Part 1		Second Digit – Degree of Water Protection								
		IP X0 No Protection	IP X1 Protection against dripping water falling vertically	IP X2 Protection against dripping water even when tilted 15° vertically	IP X3 Protection against dripping water even when tilted 60°	IP X4 Protection against splashing water from any direction	IP X5 Protection against water jets from any direction	IP X6 Protection against heavy seas from any direction	IP X7 Protection against effects of immersion	IP X8 Protection against submersion
First Digit	Protection against penetration of foreign bodies									
	Person touching									
IP 0X	No protection	No protection	IP 00							
IP 1X	Protection against touching with the hand	Protection against large solid bodies > 50mm Ø	IP 10	IP 11	IP 12					
IP 2X	Protection against touching with the finger	Protect. against med., solid bodies > 12.5 mm Ø	IP 20	IP 21	IP 22	IP 23				
IP 3X	Protection against touching with tools, wires, etc., > 2.5 mm Ø	Protection against small, solid bodies > 2.5 mm Ø	IP 30	IP 31	IP 32	IP 33	IP 34			
IP 4X	Protection against touching with tools, wires, etc., > 1 mm Ø	Protection against small, solid bodies > 1 mm Ø	IP 40	IP 41	IP 42	IP 43	IP 44			
IP 5X	Protection against touching with tools, wires, etc., > 1 mm Ø	Protection against internal dust accumulation	IP 50				IP 54	IP 55		
IP 6X	Protection against touching with tools, wires, etc., > 1 mm Ø	Protection against all dust penetration								

In some countries a third digit is added. It gives information about the mechanical properties of the equipment. This designation has not yet been standardized according to current DIN and IEC regulations. Devices in this catalogue correspond to digit IP .7.

CHART II NEMA / IP Cross Reference

The chart below provides a cross-reference from NEMA to International Protection (IP) Ratings. This cross-reference is an approximation based on the most current information available. It is not sanctioned by NEMA, IEC, or any other regulatory body. This chart should be used only as a guideline.

IEC 529 Protection Ratings	NEMA Ratings									
	1	2	3	3R	4	4X	5	6	12	13
IP 00	↓									
IP 10		↓								
IP 11										
IP 20										
IP 21										
IP 22										
IP 23										
IP 30										
IP 31				↓						
IP 32										
IP 33										
IP 40										
IP 41										
IP 42										
IP 43										
IP 50										
IP 51							↓			
IP 52										
IP 53										
IP 54										↓
IP 55										
IP 56										
IP 60										
IP 61										
IP 62			↓							
IP 63										
IP 64										
IP 65					↓	↓				
IP 66								↓	↓	
IP 67										
IP 68										

CHART III International Protection (IP) Ratings to IEC 262

The standard EN 50 262 was issued on 01.04.1998 and published in April 1999 in Germany as DIN-EN 50 262/VDE 0619. The well-known standards for cable glands, such as DIN VDE 0619 (VDE 0619): 1987-09, DIN 46 319: 1989-12, DIN 46 320-1: 1985-09 and DIN 46 320-2...-4: 1973-01 etc, are only applicable until 31.12.1999. Approved technical drawings using these standards are valid until 01.03.2001.

- 1.) Fields of application for standard EN 50 262: This European standard contains the requirements and tests for the construction and design of metric cable glands. This standard covers the cable gland as a complete part, but not the parts of cable glands.
- 2.) The screw-in thread of cable glands must be constructed according to chart 1 of EN 60 423. The dimensions of the thread are M6x0,75; M8x1; M10x1; M12x1.5; M16x1.5; M20x1.5; M25x1.5; M32x1.5; M40x1.5; M50x1.5; M63x1.5 and M75x1.5.
- 3.) The mounting holes must be dimensioned according to **Chart A**.
- 4.) Cable glands must be able to guarantee the retaining power for cables and conduits for the complete sealing section. Cable glands with traction relief for cables and conduits must free the conduits from the load of tension and twist. The tests are carried out, with in each case the smallest and largest mentioned value of the seal resp. tension relief section of the according loads and torque values in **Chart B**.

These tests are performed with test pins reproducing the outer diameters of the cables and conduits. The test pins consist of a metal rod with an elastomere sheath.

- 5.) Cable glands must be impact resistant. A test pin according to the smallest value of the sealing section is fastened to the test probe and then the test is carried out a lowest temperature according to the energy in accordance with category of **Chart C**. All specifications, charts and values are excerpts from standard DIN 50 262. Obviously further tests (electric properties, IP-Code etc.), which are necessary to classify and mark cable glands are described in this standard. It would although go beyond the scope of this catalogue.

Chart A: Mounting holes for cable glands

Thread size	12	16	20	25	32	40	50	63
Diameter of Mounting hole	M12	M16	M20	M25	M32	M40	M50	M63
+ 0.2/- 0.4 mm	12.5	16.5	20.5	25.5	32.5	40.5	50.5	63.5

Chart B: Tensile load for retaining power and tension relief, torque for turning tests

Cable and Conduit diameter [mm]	Retaining Power [N]	Tensile relief Type A [N]	Tensile relief Type B [N]	Torque Type A and B [Nm]
thru 4	5	-	-	-
> 4 thru 8	10	30	75	0,10
> 8 thru 11	15	42	120	0,15
> 11 thru 16	20	55	130	0,35
>16 thru 23	25	70	140	0,60
> 23 thru 31	30	80	250	0,80
> 31 thru 43	45	90	350	0,90
> 43 thru 55	55	100	400	1,00
> 55	70	115	450	1,20

Chart C: Value for impact test

Categories	1	2	3	4	5	6	7	8
Load [N]	2	2	2	2	10	10	10	20
Weight [Kg]	0.2	0.2	0.2	0.2	1.0	1.0	1.0	2.0
Energy [J]	0.2	0.5	1.0	2.0	4.0	7.0	10.0	20.0
Height [m]	0.1	0.25	0.5	1.0	0.4	0.7	1.0	1.0

CHART IV Tightening torque for cable glands

In casing with female thread or hole with lock nut.

Dome nuts may be tightened with max half of the locknut tightening torque according to the chart.

Note:

The values in the chart serve as a general guideline, the exact procedure depends upon the material.

Nominal size	Metal	Plastic moulded parts
	Tightening torque [Nm]	Tightening torque [Nm]
Pg 7/M12	6.25	2.5
Pg 9/M16	6.25	3.75
Pg 11/NPT3/8	6.25	3.75
Pg 13.5/M20/NPT1/2	6.25	3.75
Pg 16	7.5	5.0
Pg 21/M25/NPT3/4	10.0	7.5
Pg 29/M32/NPT1	10.0	7.5
Pg 36/M40	10.0	7.5
Pg 42/M50	10.0	7.5
Pg 48/M63	10.0	7.5

Index

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
1200070	36	4220309	5	4220861	6	4224716	14	4248665	15
1200089	36	4220311	5	4220862	6	4224717	14	4248666	15
1200100	36	4220313	5	4220863	6	4224720	14	4248667	15
1200127	36	4220316	5	4220864	6	4224721	14	4248668	15
1200135	36	4220321	5	4220865	6	4224722	14	4248669	15
1200143	36	4220329	5	4220866	6	4224726	14	4248670	15
1200160	36	4220336	5	4220867	6	4224727	14	4248671	15
1200178	36	4220342	5	4221079	13	4224751	14	4248672	15
1200194	36	4220348	5	4221095	13	4224755	14	4248673	15
1200224	36	4220351	5	4221117	13	4248404	15	4248674	15
1200232	36	4220352	5	4221133	13	4248405	15	4248675	15
1200267	36	4220353	5	4221168	13	4248407	15	4248677	15
1200291	36	4220354	5	4221214	13	4248409	15	4248678	15
1200372	36	4220355	5	4221290	13	4248529	15	4248679	15
1200500	36	4220356	5	4221362	13	4248531	15	4248680	15
3805001	37	4220357	5	4221427	13	4248539	15	4248681	15
3805002	37	4220358	5	4221486	13	4248541	15	4248682	15
3805004	37	4220359	5	4221714	13	4248542	15	4248683	15
3805005	37	4220360	5	4221716	13	4248543	15	4248684	15
3805006	37	4220612	5	4221717	13	4248610	15	4248685	15
3805007	37	4220616	5	4221720	13	4248612	15	4248686	15
3805008	37	4220620	5	4221721	13	4248614	15	4248687	15
3805009	37	4220625	5	4221725	13	4248627	15	4248688	15
3805011	37	4220632	5	4221726	13	4248629	15	4248689	15
3805012	37	4220640	5	4221732	13	4248631	15	4248690	15
3805013	37	4220650	5	4221733	13	4248632	15	4248691	15
3805014	37	4220663	5	4221740	13	4248634	15	4248692	15
3805015	37	4220712	5	4221750	13	4248640	15	4248693	15
3805016	37	4220716	5	4221760	13	4248641	15	4248694	15
3805017	37	4220720	5	4224300	14	4248642	15	4248695	15
3805018	37	4220725	5	4224305	14	4248643	15	4248696	15
3805020	37	4220732	5	4224306	14	4248644	15	4248697	15
3805021	37	4220740	5	4224307	14	4248645	15	4248698	15
3805022	37	4220750	5	4224310	14	4248646	15	4248699	15
3805023	37	4220763	5	4224311	14	4248647	15	4248700	15
3805028	37	4220800	5	4224315	14	4248648	15	4248701	15
3805047	37	4220801	5	4224316	14	4248649	15	4248702	15
3805200	38	4220802	5	4224317	14	4248650	15	4248703	15
3805201	38	4220803	5	4224320	14	4248651	15	4248704	15
3805206	38	4220810	5	4224321	14	4248652	15	4248705	15
3805207	38	4220811	5	4224322	14	4248653	15	4248706	15
3805211	38	4220812	5	4224326	14	4248654	15	4248707	15
3805213	38	4220813	5	4224327	14	4248655	15	4248708	15
3805217	38	4220850	6	4224351	14	4248656	15	4248709	15
3805219	38	4220851	6	4224355	14	4248657	15	4248710	15
3805223	38	4220852	6	4224700	14	4248658	15	4248711	15
3805225	38	4220853	6	4224705	14	4248659	15	4248712	15
3805229	38	4220854	6	4224706	14	4248660	15	4248713	15
3805231	38	4220855	6	4224707	14	4248661	15	4248714	15
3805236	38	4220856	6	4224710	14	4248662	15	4248715	15
3805237	38	4220857	6	4224711	14	4248663	15	4248716	15
4220307	5	4220860	6	4224715	14	4248664	15	4248717	15

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
4248719	15	4249661	16	4264134	19	4308093	21	5308 507	4
4248720	15	4249662	16	4264135	19	4308115	21	5308 509	4
4248721	15	4249663	16	4266 003	20	4308131	21	5308 511	4
4248722	15	4249664	16	4266 004	20	4308166	21	5308 513	4
4248723	15	4249670	16	4266 005	20	4308212	21	5308 516	4
4248724	15	4249671	16	4266 006	20	4308298	21	5308 521	4
4248725	15	4249672	16	4266 007	20	4308516	21	5308 529	4
4249600	16	4249673	16	4266 008	20	4308520	21	5308 536	4
4249601	16	4249674	16	4266 010	20	4308521	21	5308 537	4
4249602	16	4249675	16	4266 011	20	4308525	21	5308 538	4
4249603	16	4249676	16	4266 013	20	4308526	21	5308 707	4
4249604	16	4249677	16	4266 014	20	4308532	21	5308 709	4
4249610	16	4249678	16	4266 015	20	4308533	21	5308 711	4
4249611	16	4249679	16	4266 016	20	5202078	23	5308 713	4
4249612	16	4249680	16	4266 018	20	5202094	23	5308 716	4
4249613	16	4249681	16	4266 020	20	5202116	23	5308 721	4
4249614	16	4249682	16	4266 021	20	5202132	23	5308 729	4
4249615	16	4249683	16	4266 022	20	5202167	23	5308 736	4
4249616	16	4249684	16	4266 023	20	5202213	23	5308 737	4
4249617	16	4249685	16	4266 024	20	5202299	23	5308 738	4
4249618	16	4249686	16	4266 025	20	5202361	23	5308 900	4
4249619	16	4249687	16	4266 028	20	5202434	23	5308 901	4
4249620	16	4249688	16	4266 029	20	5202485	23	5308 902	4
4249621	16	4249689	16	4266 031	20	5306007	22	5308 903	4
4249622	16	4249690	16	4266 033	20	5306009	22	5308 904	4
4249623	16	4249691	16	4266 035	20	5306011	22	5308 905	4
4249624	16	4249692	16	4305078	21	5306012	22	5308 906	4
4249625	16	4249693	16	4305094	21	5306013	22	5308 907	4
4249626	16	4249694	16	4305116	21	5306016	22	5308 920	4
4249627	16	4249695	16	4305132	21	5306017	22	5308 921	4
4249628	16	4249696	16	4305167	21	5306030	22	5308 922	4
4249640	16	4249697	16	4305213	21	5306031	22	5308 923	4
4249641	16	4249698	16	4305299	21	5306032	22	5308 924	4
4249642	16	4249699	16	4305361	21	5306033	22	5308 925	4
4249643	16	4249701	16	4305426	21	5306050	22	5308 926	4
4249644	16	4264007	19	4305485	21	5306051	22	5308 927	4
4249645	16	4264009	19	4305500	21	5306052	22	5308 940	4
4249646	16	4264011	19	4305501	21	5306107	22	5308 941	4
4249647	16	4264013	19	4305502	21	5306109	22	5308 942	4
4249648	16	4264016	19	4305503	21	5306111	22	5308 943	4
4249649	16	4264021	19	4305504	21	5306112	22	5308 944	4
4249650	16	4264029	19	4305505	21	5306113	22	5308 945	4
4249651	16	4264036	19	4305506	21	5306114	22	5308 946	4
4249652	16	4264112	19	4305507	21	5306116	22	5308 947	4
4249653	16	4264116	19	4305508	21	5306117	22	5308 948	4
4249654	16	4264117	19	4305509	21	5306130	22	5308 949	4
4249655	16	4264120	19	4305510	21	5306131	22	5308 950	4
4249656	16	4264121	19	4305511	21	5306132	22	5308 951	4
4249657	16	4264125	19	4305512	21	5306133	22	5308 952	4
4249658	16	4264126	19	4305513	21	5306150	22	5308 953	4
4249659	16	4264132	19	4305514	21	5306151	22	5308 954	4
4249660	16	4264133	19	4305515	21	5306152	22	5308 955	4

Index

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
5308 956	4	5313614	8	5315504	10	5315638	10	5315813	10
5308 957	4	5313615	8	5315510	10	5315639	10	5315814	10
5308 958	4	5313616	8	5315515	10	5315640	10	5315815	10
5308 959	4	5313620	8	5315516	10	5315641	10	5315816	10
5308 960	4	5313621	8	5315520	10	5315642	10	5315817	10
5308 962	4	5313622	8	5315521	10	5315650	10	5315820	10
5309 107	4	5313623	8	5315522	10	5315651	10	5315821	10
5309 109	4	5313624	8	5315523	10	5315652	10	5315822	10
5309 111	4	5313625	8	5315524	10	5315653	10	5315823	10
5309 113	4	5313626	8	5315525	10	5315654	10	5315824	10
5309 116	4	5313640	8	5315526	10	5315655	10	5315825	10
5309 121	4	5313641	8	5315527	10	5315656	10	5315826	10
5309 129	4	5313642	8	5315528	10	5315658	10	5315827	10
5309 136	4	5313643	8	5315529	10	5315659	10	5315828	10
5309 142	4	5313644	8	5315530	10	5315660	10	5315829	10
5309 148	4	5313650	8	5315531	10	5315661	10	5315830	10
5309 207	4	5313651	8	5315532	10	5315662	10	5315831	10
5309 209	4	5313652	8	5315540	10	5315663	10	5315832	10
5309 211	4	5313653	8	5315542	10	5315664	10	5315833	10
5309 213	4	5313654	8	5315543	10	5315665	10	5315834	10
5309 216	4	5315110	10	5315544	10	5315666	10	5315835	10
5309 221	4	5315111	10	5315545	10	5315667	10	5315836	10
5309 229	4	5315112	10	5315546	10	5315668	10	5315837	10
5309 236	4	5315113	10	5315547	10	5315669	10	5315838	10
5309 242	4	5315114	10	5315600	10	5315670	10	5315839	10
5309 248	4	5315130	10	5315601	10	5315671	10	5315840	10
5309 612	4	5315160	10	5315610	10	5315672	10	5315841	10
5309 615	4	5315210	10	5315611	10	5315673	10	5315842	10
5309 616	4	5315211	10	5315612	10	5315674	10	5315850	10
5309 619	4	5315212	10	5315613	10	5315675	10	5315851	10
5309 620	4	5315213	10	5315614	10	5315676	10	5315852	10
5309 624	4	5315214	10	5315615	10	5315677	10	5315853	10
5309 625	4	5315215	10	5315616	10	5315678	10	5315854	10
5309 632	4	5315216	10	5315617	10	5315679	10	5315855	10
5309 640	4	5315217	10	5315620	10	5315683	10	5315856	10
5309 650	4	5315218	10	5315621	10	5315684	10	5315857	10
5309 663	4	5315219	10	5315622	10	5315690	10	5315858	10
5309 712	4	5315220	10	5315623	10	5315691	10	5315859	10
5309 715	4	5315221	10	5315624	10	5315692	10	5315860	10
5309 716	4	5315222	10	5315625	10	5315693	10	5315861	10
5309 719	4	5315289	10	5315626	10	5315694	10	5315862	10
5309 720	4	5315290	10	5315627	10	5315695	10	5315863	10
5309 724	4	5315292	10	5315628	10	5315696	10	5315864	10
5309 725	4	5315293	10	5315629	10	5315697	10	5315865	10
5309 732	4	5315294	10	5315630	10	5315698	10	5315866	10
5309 740	4	5315295	10	5315631	10	5315699	10	5315867	10
5309 750	4	5315296	10	5315632	10	5315700	10	5315868	10
5309 763	4	5315297	10	5315633	10	5315800	10	5315869	10
5313610	8	5315500	10	5315634	10	5315801	10	5315870	10
5313611	8	5315501	10	5315635	10	5315810	10	5315871	10
5313612	8	5315502	10	5315636	10	5315811	10	5315872	10
5313613	8	5315503	10	5315637	10	5315812	10	5315873	10

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
5315874	10	5316311	11	5318308	11	5320351	9	5320555	9
5315875	10	5316312	11	5318309	11	5320355	9	5320560	9
5315876	10	5316313	11	5318310	11	5320360	9	5320561	9
5315877	10	5316400	11	5318311	11	5320361	9	5320565	9
5315878	10	5316401	11	5318312	11	5320365	9	5320566	9
5315879	10	5316402	11	5318313	11	5320366	9	5320570	9
5315880	10	5316403	11	5318400	11	5320370	9	5320571	9
5315881	10	5316404	11	5318401	11	5320371	9	5320575	9
5315891	10	5316405	11	5318402	11	5320375	9	5320576	9
5315892	10	5316406	11	5318403	11	5320376	9	5320580	9
5315893	10	5316407	11	5318404	11	5320380	9	5320581	9
5315894	10	5316408	11	5318405	11	5320381	9	5320582	9
5315895	10	5316409	11	5318406	11	5320382	9	5320583	9
5315896	10	5316410	11	5318407	11	5320383	9	5320584	9
5315897	10	5316411	11	5318408	11	5320384	9	5320585	9
5315898	10	5316412	11	5318409	11	5320385	9	5320586	9
5315899	10	5316413	11	5318410	11	5320386	9	5320587	9
5315900	10	5316414	11	5318411	11	5320387	9	5320590	9
5316100	11	5316415	11	5318412	11	5320390	9	5320593	9
5316101	11	5316416	11	5318413	11	5320393	9	5320594	9
5316102	11	5316417	11	5318414	11	5320394	9	5320596	9
5316103	11	5318100	11	5318415	11	5320396	9	5320597	9
5316104	11	5318101	11	5318416	11	5320397	9	5320710	9
5316200	11	5318102	11	5318417	11	5320500	9	5320715	9
5316201	11	5318103	11	5320300	9	5320505	9	5320716	9
5316202	11	5318104	11	5320305	9	5320506	9	5320717	9
5316203	11	5318200	11	5320306	9	5320507	9	5320718	9
5316204	11	5318201	11	5320307	9	5320510	9	5320720	9
5316205	11	5318202	11	5320310	9	5320511	9	5320721	9
5316206	11	5318203	11	5320311	9	5320515	9	5320722	9
5316207	11	5318204	11	5320315	9	5320516	9	5320723	9
5316208	11	5318205	11	5320316	9	5320517	9	5320730	9
5316209	11	5318206	11	5320317	9	5320520	9	5320731	9
5316210	11	5318207	11	5320320	9	5320521	9	5320770	9
5316211	11	5318208	11	5320321	9	5320522	9	5320771	9
5316212	11	5318209	11	5320322	9	5320525	9	5320772	9
5316213	11	5318210	11	5320325	9	5320526	9	5320773	9
5316214	11	5318211	11	5320326	9	5320527	9	5320774	9
5316215	11	5318212	11	5320327	9	5320528	9	5320775	9
5316216	11	5318213	11	5320328	9	5320530	9	5320776	9
5316217	11	5318214	11	5320330	9	5320531	9	5320777	9
5316300	11	5318215	11	5320331	9	5320532	9	5320780	9
5316301	11	5318216	11	5320332	9	5320533	9	5320785	9
5316302	11	5318217	11	5320333	9	5320534	9	5320786	9
5316303	11	5318300	11	5320334	9	5320535	9	5320810	9
5316304	11	5318301	11	5320335	9	5320536	9	5320815	9
5316305	11	5318302	11	5320336	9	5320537	9	5320816	9
5316306	11	5318303	11	5320337	9	5320542	9	5320817	9
5316307	11	5318304	11	5320342	9	5320543	9	5320818	9
5316308	11	5318305	11	5320343	9	5320544	9	5320820	9
5316309	11	5318306	11	5320344	9	5320545	9	5320821	9
5316310	11	5318307	11	5320345	9	5320551	9	5320822	9

Index

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
5320823	9	5808251	18	6102042	27	6200044	29	6402091	33
5320830	9	5808252	18	6102050	27	6200052	29	6402097	33
5320831	9	5808253	18	6102069	27	6200060	29	6402099	33
5320870	9	5808254	18	6102077	27	6200079	29	6402100	33
5320871	9	6000070	25	6102085	27	6200087	29	6402102	33
5320872	9	6000096	25	6102093	27	6200095	29	6402119	33
5320873	9	6000118	25	6102107	27	6200109	29	6402214	33
5320874	9	6000134	25	6102115	27	6200117	29	6402215	33
5320875	9	6000169	25	6102123	27	6200125	29	6402216	33
5320876	9	6000215	25	6102131	27	6200212	29	6402217	33
5320877	9	6000290	25	6102140	27	6200216	29	6402218	33
5320880	9	6000363	25	6102158	27	6200220	29	6402219	33
5320885	9	6000428	25	6102166	27	6200225	29	6402316	32
5320886	9	6000487	25	6102182	27	6200232	29	6402317	32
5330016	12	6004121	25	6102190	27	6200240	29	6402320	32
5330020	12	6004164	25	6102204	27	6200250	29	6402321	32
5330021	12	6004202	25	6102212	27	6200263	29	6402325	32
5330025	12	6004253	25	6102220	27	6200312	29	6402326	32
5330032	12	6004326	25	6102239	27	6200316	29	6402332	32
5507050	18	6004407	25	6102241	27	6200320	29	6402333	32
5507051	18	6004504	25	6102247	27	6200325	29	6604703	31
5507052	18	6004636	25	6102255	27	6200332	29	6604704	31
5507053	18	6010112	24	6102258	27	6200340	29	6604705	31
5507054	18	6010116	24	6102400	27	6200350	29	6604706	31
5507055	18	6010120	24	6102404	27	6200363	29	6604707	31
5507250	18	6010125	24	6102405	27	6400400	32	6604708	31
5507251	18	6010132	24	6102409	27	6400401	32	6604709	31
5507252	18	6010140	24	6102410	27	6400402	32	6604712	31
5507253	18	6010150	24	6102413	27	6400403	32	6604713	31
5507254	18	6010163	24	6102414	27	6400404	32	6604715	31
5507560	17	6011007	25	6102415	27	6400405	32	6604716	31
5507561	17	6011009	25	6102419	27	6400406	32	6604717	31
5507562	17	6011011	25	6102420	27	6400407	32	6604719	31
5507563	17	6011013	25	6102424	27	6400408	32	6604720	31
5507564	17	6011016	25	6102425	27	6400409	32	6604721	31
5507565	17	6011021	25	6102429	27	6400410	32	6604722	31
5507566	17	6011029	25	6102430	27	6400411	32	6604723	31
5507567	17	6011036	25	6102435	27	6400412	32	6604724	31
5507568	17	6011042	25	6104716	27	6400413	32	6604725	31
5507569	17	6011048	25	6104720	27	6400414	32	6604726	31
5507570	17	6011112	25	6104725	27	6400415	32	6604727	31
5507760	17	6011116	25	6104726	27	6402020	33	6604728	31
5507761	17	6011120	25	6104727	27	6402038	33	6604729	31
5507762	17	6011125	25	6104732	27	6402046	33	6604730	31
5507763	17	6011132	25	6104733	27	6402054	33	6604732	31
5508050	18	6011140	25	6104740	27	6402055	33	6604733	31
5508051	18	6011150	25	6104750	27	6402060	33	6604734	31
5508052	18	6011163	25	6104763	27	6402062	33	6604735	31
5508053	18	6102018	27	6104764	27	6402070	33	6604740	31
5508054	18	6102026	27	6200010	29	6402072	33	6604741	31
5508055	18	6102030	27	6200028	29	6402087	33	6604742	31
5808250	18	6102034	27	6200036	29	6402089	33	6604743	31

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
6604750	31	7004200	28	7008548	26	7215533	34	8113307	35
6604751	31	7004201	28	7008549	26	7215541	34	8113308	35
6604752	31	7004202	28	7008550	26	7215550	34	8113309	35
6604753	31	7004203	28	7008561	26	7215568	34	8113310	35
6604763	31	7004204	28	7008562	26	7215576	34	8113490	35
6604764	31	7004205	28	7008563	26	7215584	34	8113492	35
6604807	30	7004206	28	7211 485	24	7215592	34	8113493	35
6604808	30	7004207	28	7211 486	24	7215606	34	8113494	35
6604809	30	7004208	28	7211 487	24	7217312	34	8113495	35
6604810	30	7004300	28	7211 488	24	7217316	34	8113496	35
6604811	30	7004301	28	7211 495	24	7217320	34	8113497	35
6604812	30	7004302	28	7211 496	24	7217325	34	8113498	35
6604813	30	7004303	28	7211 497	24	7217332	34	8114200	7
6604814	30	7004304	28	7211 498	24	7217340	34	8114201	7
6604815	30	7004305	28	7211 851	24	7217350	34	8114202	7
6604816	30	7004306	28	7211 852	24	7217363	34	8114203	7
6604817	30	7005301	26	7211 853	24	7217701	7	8114204	7
6604818	30	7005302	26	7211 854	24	7217702	7	8114205	7
6604819	30	7005303	26	7211 855	24	7217703	7	8114206	7
6604820	30	7005304	26	7211 856	24	8112070	35	8114207	7
6604821	30	7005305	26	7211 857	24	8112096	35	8114208	7
6604822	30	7005306	26	7211 858	24	8112118	35	8114209	7
6604823	30	7005307	26	7211 859	24	8112134	35	8114210	7
6604829	30	7005308	26	7211 860	24	8112169	35	8114211	7
6604830	30	7005309	26	7211 881	24	8112215	35	8114212	7
6604831	30	7005310	26	7211 882	24	8112250	35	8114250	7
6604832	30	7005311	26	7211 883	24	8112290	35	8114251	7
6604836	30	7005312	26	7211 884	24	8112320	35	8114252	7
6604837	30	7005313	26	7211 885	24	8112363	35	8114253	7
6604842	30	7005314	26	7211 886	24	8112400	35	8221050	39
6604843	30	7005315	26	7211 887	24	8112428	35	8221051	39
6604848	30	7005316	26	7211 888	24	8112500	35	8221052	39
6604849	30	7005317	26	7211 889	24	8112630	35	8221053	39
6604850	30	7005318	26	7211 890	24	8112675	35	8221054	39
6700507	34	7005319	26	7211 974	24	8112800	39	8221055	39
6700509	34	7005320	26	7211 975	24	8112801	39	8221056	39
6700511	34	7005321	26	7211 976	24	8112802	39	8221057	39
6700513	34	7005322	26	7211 977	24	8112803	39	8221058	39
6700516	34	7005323	26	7211 978	24	8112804	39		
6700521	34	7005324	26	7211 979	24	8112807	39		
6700529	34	7008516	26	7211 980	24	8112808	39		
6700536	34	7008519	26	7211 981	24	8112809	39		
6700542	34	7008520	26	7211 982	24	8112810	39		
6700548	34	7008523	26	7211 983	24	8112811	39		
6700612	34	7008524	26	7211 984	24	8112813	39		
6700616	34	7008525	26	7211 985	24	8113301	35		
6700620	34	7008530	26	7211 986	24	8113302	35		
6700625	34	7008531	26	7211 990	24	8113302	35		
6700632	34	7008532	26	7211 991	24	8113303	35		
6700640	34	7008538	26	7211 992	24	8113304	35		
6700650	34	7008539	26	7215517	34	8113305	35		
6700663	34	7008540	26	7215525	34	8113306	35		

Standard Terms and Conditions of Sale

TITLE - Title to the products of ALTECH shall remain with ALTECH until payment is made in full by Customer. Such reservation of title is for the purpose of securing the purchase price and shall not relieve Customer of the duty to inspect the products upon receipt, to notify ALTECH of any deficiencies or defects, and to exercise due care in the use, installation, operation, and maintenance of the products when on the premise of the Customer or under the control of the Customer. Notwithstanding any reservation of title by ALTECH, risk of loss shall pass to customer at any time of shipment.

SHIPMENT AND DELIVERY - All orders for destination in the mainland United States (less Hawaii, Alaska and non-continental United States possessions) will be shipped F.O.B. Flemington, N.J. All destination, shipping and other charges shall be paid by the Customer in accordance with ALTECH's then current shipping and billing practices.

Delivery dates given in the acceptance of any order are approximate. ALTECH shall not be liable for delays in delivery or in performance due to causes beyond its reasonable control including acts of God, acts of Customer, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot or delays in transportation. In the event of such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of the delay.

PRICE - PRICES in any ALTECH publication are subject to change without prior notification. Catalog prices are based on prices published in the current price list. All written quotations are valid for thirty (30) days from the date of quotation. Customer shall pay all sales, use, excise or similar taxes whenever ALTECH must itself pay and/or collect such tax from Customer arising out of the sale.

PAYMENT - Customer agrees to make payment within thirty (30) days of date of the invoice from ALTECH. Customer agrees to pay a late payment charge of one and one-half percent (1.5% per month, or the maximum late payment charge permitted by applicable law, whichever is less, on any unpaid amount for each calendar month (or fraction thereof) that such payment is in default. Orders amounting to less than \$100.00 will be billed at \$100.00 plus freight. Full carton purchases are required. In the event of referral to an attorney for collection, reasonable attorney's fees for collection of the overdue amount shall be paid by Customer. In the event payment is not received within 30 days from the date of invoice, any discount shall be cancelled and the full list price will be due.

LIMITED WARRANTY - ALTECH warrants to Customer that the equipment purchases shall be free from defects in material and workmanship under normal use and service for a period of one year from shipment.

Written notice as an explanation of the circumstances of any claim that the equipment has proved defective in material or workmanship shall be given promptly by the Customer to ALTECH.

ALTECH will not be liable for any misuse, improper operations, improper installation, improper maintenance, alteration, modification, accident or unusual degradation of the equipment or parts due to an unsuitable installation environment.

No representation of other affirmation of facts, including but not limited to statements regarding capacity, suitability for use or performance of the equipment, shall be or be deemed to be a warranty or representation by ALTECH for any purpose, nor give rise to any liability or obligation of ALTECH whatsoever.

Customer's sole and exclusive remedy in the event of breach of warranty, as set forth herein, is expressly limited to (1) the correction of the defect by adjustment, repair, modification, or replacement, or (2) issuance of a credit or refund of the purchase price for the defective equipment at ALTECH's election and sole expense.

EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY EXTENDS ONLY TO THE CUSTOMER FROM ALTECH OR ITS AUTHORIZED DISTRIBUTOR.

LIMITATION OF LIABILITY - IN NO EVENT, SHALL ALTECH BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS AGREEMENT OR OBLIGATIONS UNDER THE AGREEMENT.

ALTECH SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN SHIPMENT, INSTALLATION OR FURNISHING OF EQUIPMENT OR SERVICES UNDER THIS AGREEMENT.

No action arising out of any claimed breach of this Agreement may be brought by either party more than two (2) years after the cause of action has accrued.

PATENT INDEMNITY - ALTECH shall defend or settle any suit or proceeding brought against Customer based on a claim that any equipment made to ALTECH design and furnished hereunder constitutes an infringement of any existing United States patent, provided (ALTECH) is notified promptly in writing and is given complete authorization and information required for the defense, and ALTECH shall pay all damages and costs awarded against Customer, but shall not be responsible for any costs, expense or compromise incurred or made by Customer without ALTECH's prior written consent. If any equipment is in ALTECH's opinion likely to or does become the subject of a claim for patent infringement, ALTECH may at its option and expense procure for Customer the right to continue using the device, modify it to become non-infringing, but in the event ALTECH is not reasonably able to modify, substitute, or otherwise procure for Customer the right to continue using it, ALTECH will remove such equipment and refund to Customer the amount paid in excess of a reasonable rental for past use.

ALTECH shall not be liable for any infringement or claim based upon use of the equipment in combination with other equipment not supplied by ALTECH or with modifications made by Customer.

The foregoing states the entire liability of ALTECH to Customer arising from patent infringement.

SELLER'S REMEDIES - Should Customer fail to make any payment within ten (10) days of its due date, or fail to perform any other of the Customer's obligation hereunder upon thirty (30) days written notice, or should Customer be or become insolvent or be a party to any bankruptcy receivership proceeding prior to full payment of all amounts payable hereunder, ALTECH may: (a) with or without demand or notice to customer declare the entire amount unpaid immediately due and payable; (b) enter upon the premises where the equipment may be found and remove it (Customer shall assemble the equipment and make it available to ALTECH at a place reasonably convenient to both parties and shall permit and assist ALTECH in effecting the retaking and removal of the equipment); and (c) sell any or all the equipment as permitted under applicable law, applying the proceeds of the sale to payment of the expenses of retaking, repairing and selling the equipment, reasonable attorney fees and to the satisfaction of all indebtedness then due and unpaid under this Agreement. Any surplus shall be paid to Customer and any deficiency shall be paid to ALTECH by Customer.

The remedies provided herein shall be cumulative and in addition to all other remedies provided by law or equity or under the Uniform Commercial Code.

GOVERNING LAW - This agreement will be governed by the Laws of the State of New Jersey.

GENERAL - This Agreement shall only become effective and binding when either (a) it has been accepted and executed by an authorized representative of ALTECH, or (b) the equipment has been shipped to Customer, with or without acceptance in writing hereon. Notice of acceptance is hereby waived by Customer. Customer hereby acknowledges receipt of a true and complete copy hereof.

No addition to or modification of any of the Terms and Conditions of Sale as they appear herein shall be binding upon ALTECH unless signed in writing by duly authorized representative of ALTECH in Flemington, N.J.

Typographical and clerical errors in quotations, orders and acknowledgments are subject to correction.

This Agreement is not assignable without the prior written consent of ALTECH. Any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability, of the remaining provisions shall not in any way be affected or impaired thereby.

ALTECH is not responsible for failure to fulfill its obligation under this Agreement due to causes beyond its control, or except as agreed herein.

THE CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. FURTHERMORE, THE CUSTOMER AGREES THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN THE PARTIES, WHICH SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

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