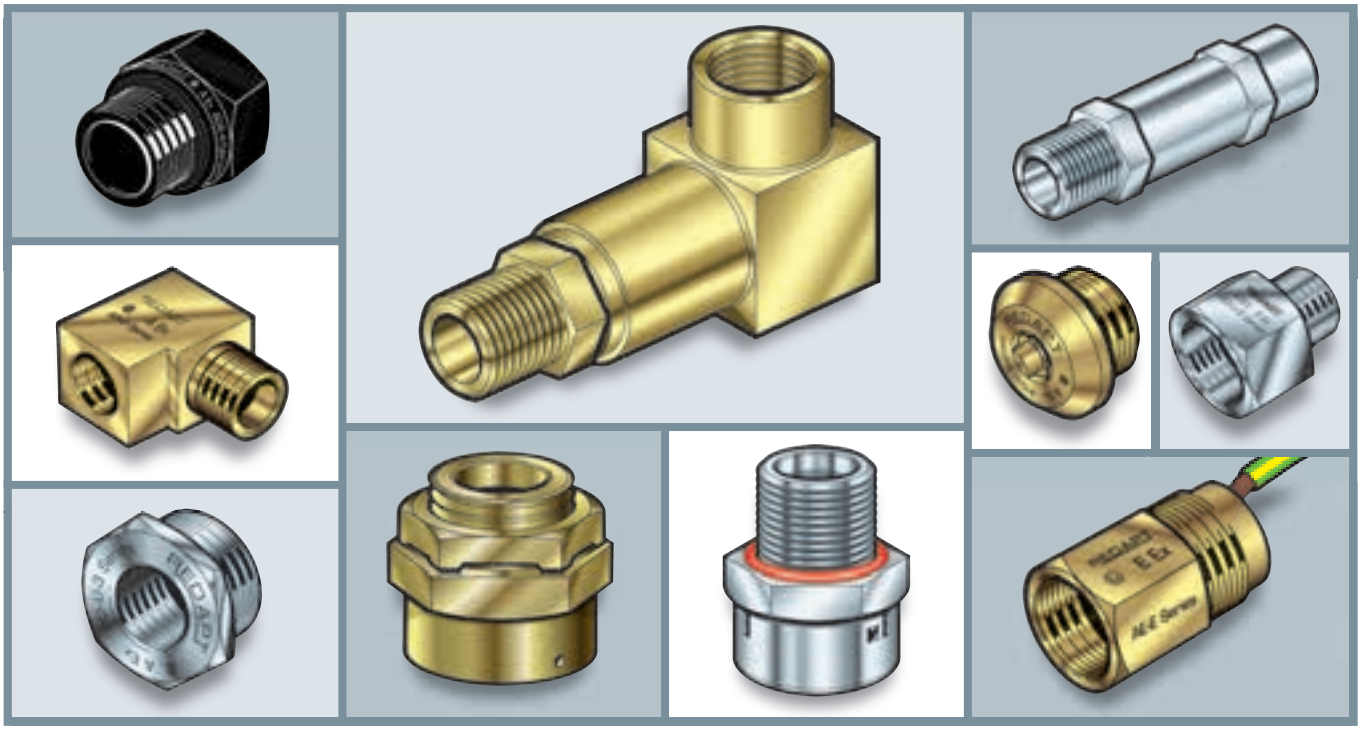
REDAPT

Thread Conversion Products

Equipment for Hazardous Areas and Potentially Explosive Environments

COOPER Safety



Ex

NPT

ISO

BSP

ET

PG

How can Redapt help you?

What do we do ?

- Redapt specialise in the manufacture and supply of Thread Converting Adaptors & Reducers that are Ex certified for use in potentially explosive, hazardous areas.

Which threadforms do we cover ?

- Redapt cover the five main electrical threadforms in use around the world ISO Metric, National Pipe Taper, ISO Pipe Thread (BSP), PG & ET Imperial Conduit.

Which materials can we offer ?

- Redapt manufacture Ex products in Brass, Nickel Plated, 316 Stainless Steel, Aluminium, Zinc Plated, Mild Steel and Glass Filled Nylon.

Blanking off or filling of unused entries into Ex Equipment ?

- Redapt manufacture a full range of stopping plugs that are designed specifically to blank off or fill unused entries into Ex Equipment.

Earthing or grounding problems ?

- Redapt's product range includes adaptors which can provide a method of insulating between a termination and the equipment, or alternatively a method of earth connection between a termination and the equipment.

Full range of accessories to complement our products ?

- Redapt offer a full range of accessories including locknuts, earth tags, IP washers & serrated locking washers.

What's new ?

- Redapt have developed a new Swivel Adaptor that achieves correct alignment without twisting the cable. The product is produced such that the flame-path is maintained at both ends and the spinning components.

What are we like to work with ?

- Redapt are established as one of the world's leading manufacturers of Ex components with a reputation for delivering the highest possible standards of both product quality and customer service.

Our Quality System

- To ensure consistent product quality Redapt work within a Quality Assurance System that is approved to BS EN ISO 9001:2008.

Typical customers

- Typical users of Redapt's products include Oil & Gas operators, petrochemical & pharmaceutical companies, engineering contractors and hazardous area equipment manufacturers worldwide.

- When dust is a potential hazard all Redapt products are also approved for installation in industries such as aggriculture, food processing, synthetics etc.

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Product Selection Guide

When selecting Ex certified accessories for use in Hazardous Areas it is important to ensure that the product selected not only performs the task required, i.e. adapting the thread, but must also **maintains the overall integrity of the equipment** into which it will be fitted.

To help with selection of Redapt's product we have prepared the following as a guide. However, when selecting equipment for use in hazardous areas the appropriate national or international standards or codes of practice must be considered.

Certification (see pages 27 & 28)

- Redapt products are manufactured to comply with the relevant standards for which they are designed. This means Redapt products meet with the exacting standards found within hazardous area environments.
- In an attempt to make life easier for users, Redapt's range of Adaptors, Reducers, Stopping Plugs and Breather Drains are approved Exd I&IIC & Exe I&IIC and tested to IP66 68.

Equipment Certificates, Ex Thread Adaptors and Ex Stopping Plugs

- Redapt's Adaptors & Reducers with metric female threads (Ex Adaptors) and full range of Stopping Plugs (Ex Stopping Plugs) are certified as apparatus and granted Equipment Certificates. This means that they can be fitted into Ex apparatus enclosures without further certification.

Component Certificates

- Redapt's Adaptors & Reducers with non-metric female threads are certified as components and as such require further approval before they can be fitted to Ex apparatus enclosures. This applies to all products that have a 'u' at the end of the certificate number.

Worldwide compatibility

- Keeping pace with the rapidly changing approvals and to ensure worldwide compatibility, Redapt have the following approvals. North American Ex approvals for both methods of hazardous location classification, Zones and Divisions, in addition to our existing CENELEC approvals. Redapt can therefore offer Adaptors & Reducers Exd I&IIC & Exe I&IIC and/or Class I Division 1 ABCD, or Ex e II, Class I Division 2 etc.
  - ATEX
  - IECEx
  - CSA
  - GOST
  - CENELEC

Ingress Protection (see page 29)

- To ensure that the ingress protection of the equipment is maintained the accessories need to satisfy the same level of protection as the equipment.
- Redapt's Exd I&IIC & Exe I&IIC range of Adaptors, Reducers, Stopping Plugs and Breather Drains are fitted with an integral 'O' ring seal and have been independently tested to IP66 68.

Material

- To ensure the long term integrity of the installation care should be taken in selecting the product material. In particular taking into account any corrosive atmosphere present and/or the potential for corrosion brought about by mating dissimilar metals.
- As standard we supply brass, which is suitable for most applications. Although in certain atmospheres, most notably ammonia, or to avoid bi-metallic corrosion and electrolytic action it may be advisable to select an alternative material or request plated brass.

Product Selection Guide (continued)

Thread Fit, Gauging and Length

- Parallel threads are gauged to a medium fit (6g, 6H) and are manufactured to provide a minimum of 8 full threads, unless otherwise specified.
- Tapered threads are gauged and dimensioned to provide for 5 fully engaged threads, unless otherwise specified.

Male Thread First (see page 26)

- When ordering or inquiring after Adaptors and Reducers it helps avoid confusion if the male thread size is quoted first, followed by the female.

Dimensions

- It is advisable to check the dimensions of the product to ensure that it can be installed into the equipment without fouling.

Product Marking

- To ensure clarity the relevant product information is marked on the product, and/or shown on the packaging and/or within the installation instructions as tabulated below:

Marking	Product	Packaging	Installation Instructions
Redapt Logo	✓	✓	✓
Full Address	✗	✗	✓
Ex	✓	✓	✓
Category	✗	✗	✓
Method of Protection	✓	✓	✓
Gas Group	✓	✓	✓
Series (PA-D etc)	✓	Full Part No.	Full Part No.
Size	✓	✓	✓
Ex Certificate No.	✓	✗	✓
CE	✗	✓	✓
Notified Body Name	✓	✓	✓
Notified Body No.	✗	✗	✓
Year of Manufacture	✗	✓	✗
SP	✓	✓	✓
IECEx	✓	✓	✓
PG Available on request	✓ Optional	✓ Optional	✓

European Directives

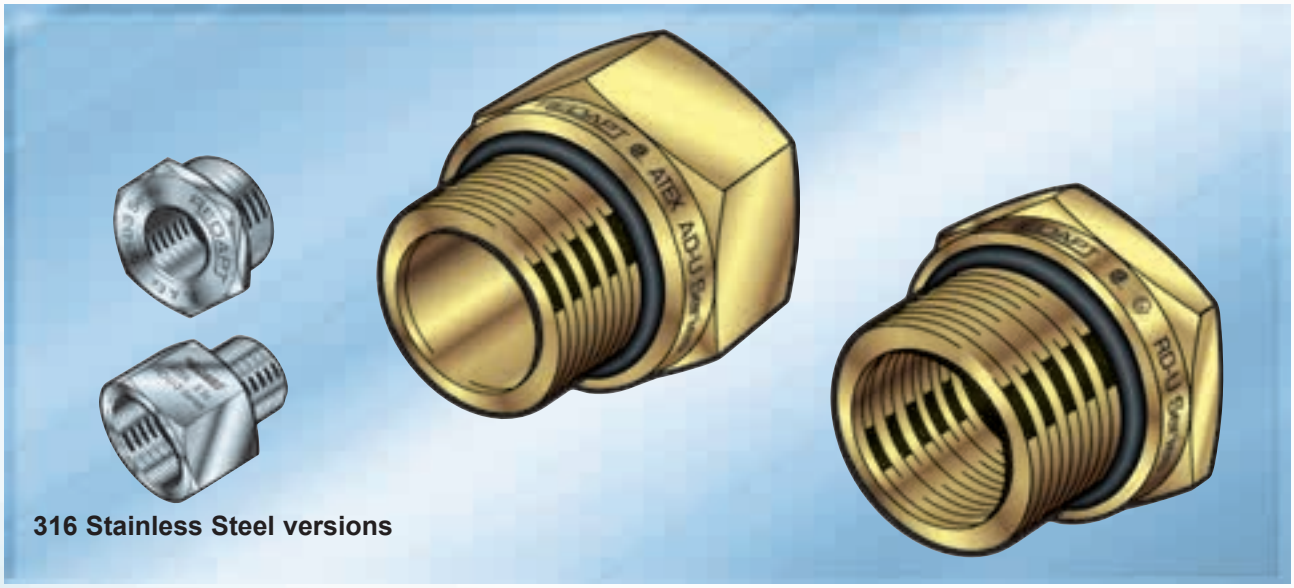
- Products approved within the ATEX Directive will be shipped with detailed installation instructions.
- The CE mark is applied to the packaging and confirms that Redapt's products meet with the essential health and safety requirements of the applicable European Directives.
- Redapt's products are outside the scope of the Electromagnetic Compatibility Directive (EMC) as they are passive.

Dual Certified Adaptors & Reducers IP66 68 & 4X 6P

AD-U & RD-U Series Adaptors and Reducers provide a method of matching electrical threadforms on Ex Equipment while maintaining certification.

Adaptors are used where the thread size of the cable gland or connection device is larger than, or of an equivalent size to the entry thread of the enclosure.

Reducers are used to reduce the entry thread of an enclosure to accept a cable gland or connection device with a smaller thread.



Worldwide compatibility

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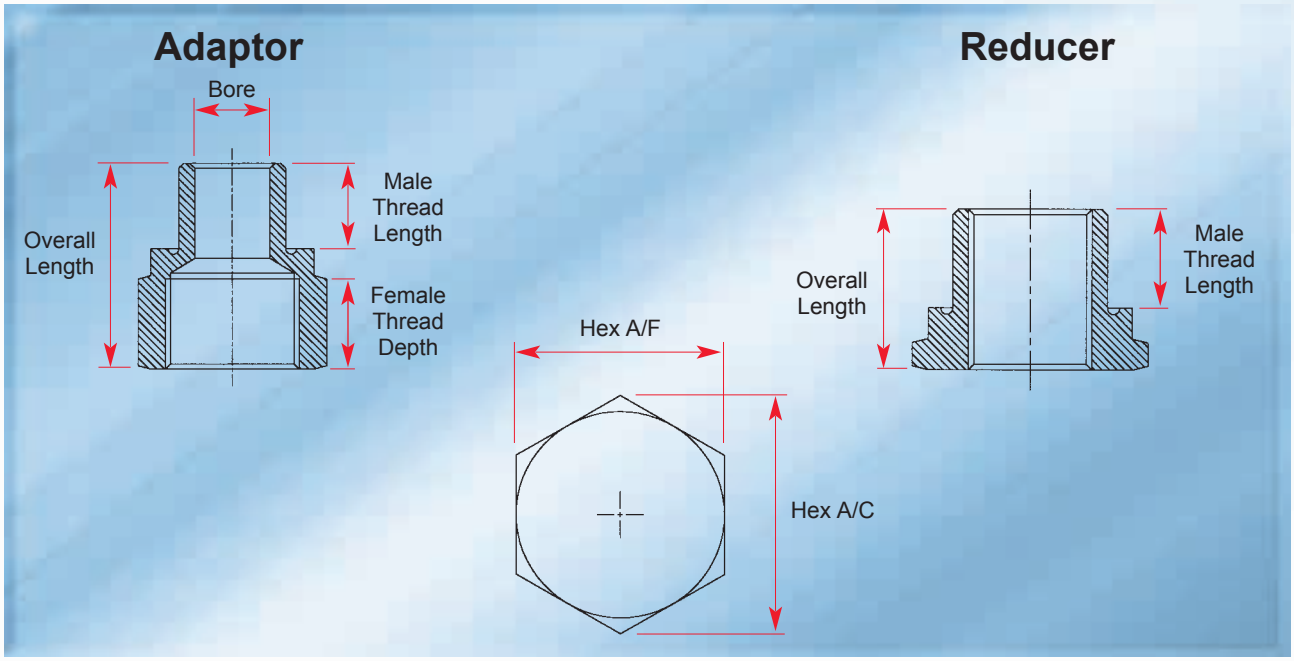
  - ATEX
  - IECEx
  - CSA
  - GOST
  - CENELEC
- **Captive 'O' Ring Seal –** is located within a recess on the face of the product helping protect the 'O' ring from the environmental damage, ensuring the 'O' ring is not displaced during installation and to optimise ingress protection.

Please Note:
Tapered male thread options are not normally supplied c/w 'O' ring seal, thread sealant should be used to maintain the desired level of ingress protection. If an 'O' ring seal is required (Clearance holes) this can be available as an option.

316 Stainless Steel versions do not feature a marking band. This reduces the overall length of Reducers by 5mm, it does not affect the overall length of Adaptors.

Quality: SIRA 00ATEXM083, BS EN ISO9001:2008

Approvals:	SIRA	00ATEX1094X (Equipment)
	SIRA	99ATEX1115U (Component)
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U
Ingress Protection:		IP66 68, CSA Enclosure Type (NEMA) 4X 6P
Impact Resistance:		20Nm
Application Temperature Range:		Available on request
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium
'O' Ring Material:		Nitrile (others available)
Plating:		Electroless Nickel, Zinc, others on application
Part Number:		Please refer to page 26 for Part Numbering System



Please see pages 8 & 9 for dimension tables.

Available thread sizes and corresponding bore size

Metric	Bore	NPT	Bore	ISO Pipe	Bore	ET	Bore	PG	Bore
M16	10.0			**⅜"**	10.0	**⅝"**	10.0	**PG7**	8.0
M20	14.0	**½"**	15.0	**½"**	15.0	**¾"**	14.0	**PG9**	10.0
M25	18.0	**¾"**	19.0	**¾"**	19.0	**1"**	18.0	**PG11**	13.5
M32	24.0	**1"**	25.0	**1"**	25.0	**1¼"**	24.0	**PG13.5**	14.0
M40	32.0	**1¼"**	32.0	**1¼"**	32.0	**1½"**	32.0	**PG16**	16.0
M50	41.0	**1½"**	38.0	**1½"**	38.0	**2"**	41.0	**PG21**	21.0
M63	53.0	**2"**	49.0	**2"**	49.0	**2½"**	53.0	**PG29**	29.0
M75	64.0	**2½"**	60.0	**2½"**	60.0	**3"**	64.0	**PG36**	38.0
M80x2.0	69.0	**3"**	75.0	**3"**	75.0			**PG42**	45.0
M85x2.0	73.0	**3½"**	88.0	**3½"**	88.0			**PG48**	50.0
M90x2.0	78.0	**4"**	100.0	**4"**	100.0				
M100x2.0	88.0								
M110x2.0	98.0								
M120x2.0	108.0								

MALE	FEMALE SIZE																														
	METRIC														NPT									PG								
Metric	M16	M20	M25	M32	M40	M50	M63	M75	M80	M85	M90	M100	M110	M120	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	PG7&9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48
M16	201	201													216										201	201	201						
M20	301	202	203												217	218									301	202	202	202	204				
M25	303	303	257	206											303	219	221								303	303	303	257	204				
M32	305	305	305	206	208										305	305	221	223							305	305	305	305	207	258			
M40	307	307	307	307	208	209									307	307	307	223	224						307	307	307	307	307	208	209		
M50	309	309	309	309	309	259	211								309	309	309	309	225	226					309	309	309	309	309	309	210	210	211
M63	310	310	310	310	310	310	211	212							310	310	310	310	310	226	227				310	310	310	310	310	310	310	310	211
M75	311	311	311	311	311	311	311	212	261	213	213				311	311	311	311	311	311	360	228			311	311	311	311	311	311	311	311	311
M80	311	311	311	311	311	311	311	261	261	214	214																				
M85	312	312	312	312	312	312	312	214	214	214	214																				
M90	312	312	312	312	312	312	312	312	214	214	214	215			312	312	312	312	312	312	312	229	230	231									
M100	313	313	313	313	313	313	313	313	313	313	215	215	262	263	313	313	313	313	313	313	313	313	230	231									
M110	325	325	325	325	325	325	325	325	325	325	325	262	262	263																			
M120	326	326	326	326	326	326	326	326	326	326	326	326	263	263																			

M32 Male x M40 Female = 208

MALE	FEMALE SIZE																														
	METRIC										NPT													PG								
NPT	M16	M20	M25	M32	M40	M50	M63	M75	M90	M100	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	5"	PG7&9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48		
½"	314	232	234								245	246										314	232	232	232	261						
¾"	315	315	234	235							315	246	247									315	315	315	234	235						
1"	316	316	316	236	237						316	316	248	249								316	316	316	316	236	237					
1¼"	317	317	317	317	237	238					317	317	317	249	250							317	317	317	317	317	237	238				
1½"	318	318	318	318	318	238	240				318	318	318	318	250	251						318	318	318	318	318	318	238	239	240		
2"	319	319	319	319	319	319	240	241			319	319	319	319	319	251	252					319	319	319	319	319	319	319	319	240		
2½"	320	320	320	320	320	320	320	242	243		320	320	320	320	320	320	253	254				320	320	320	320	320	320	320	320	320		
3"	321	321	321	321	321	321	321	321	243	244	321	321	321	321	321	321	321	254	255			321	321	321	321	321	321	321	321	321		
3½"	322	322	322	322	322	322	322	322	322	244	322	322	322	322	322	322	322	322	255	256		322	322	322	322	322	322	322	322	322		
4"	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	256	264	323	323	323	323	323	323	323	323	323		
5"	–	–	–	–	–	–	–	–	–	–	327	327	327	327	327	327	327	327	327	327	–	–	–	–	–	–	–	–	–	–		

MALE	FEMALE SIZE																														
	METRIC								NPT													PG										
PG	M16	M20	M25	M32	M40	M50	M63	M75	½"	¾"	1"	1¼"	1½"	2"	2½"	PG7&9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48								
PG7&9	201	201							216							201	201	201														
PG11	202	202	203						217	218						301 / 202	202	202	202													
PG13.5	301	202	203						217	218						301	202	202	202	203												
PG16	302	203	203						218	218	221					302	302	203	203	257												
PG21	304	304	205	206	208				304	220	221					304	304	304	304	205	258											
PG29	306	306	306	306	208	209			306	306	223	223	224			306	306	306	306	306	208	209										
PG36	308	308	308	308	308	209	211		308	308	308	224	224			308	308	308	308	308	308	209	210	211								
PG42	324	324	324	324	324	210	211		324	324	324	324	324	226		324	324	324	324	324	324	324	210	211								
PG48	310	310	310	310	310	310	211	211	310	310	310	310	310	226	227	310	310	310	310	310	310	310	310	211								

STEP 1 (page 8) To obtain the correct reference number select the male size from the left hand column, then refer horizontally across the page to the female size. i.e. M32 (Male) x M40 (Female) = 208

Adaptors

Metric x Metric, Metric x PG, PG x Metric, PG x PG																			
Reference Numbers	201	202	205	204	205	206	207	208	209	210	211	212	213	214	215	216	257	258	259
Hex Across Flats	23.4	27	30.5	33	36	37.6	37.6	47.2	55.9	61.2	70.1	90.2	106.4	106.4	114.3	23.4	31.3	41.3	57.2
Hex Across Corners	26.8	31	35	38	41.5	43.2	43.2	53.4	64.3	70.4	81.8	103.7	122.4	122.4	131.4	26.8	36.1	47.7	66
Male Thread Length	16	16	16	16	16	16	16	16	16	16	16	16	16	20	20	16	16	16	16
Female Thread Length	17	17	17	17	17	17	17	17	17	17	17	17	22	22	22	20	17	17	17
Total Length	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	39.5	39.5	39.5	39.5	45	49	49	42	38.5	38.5	39.5

Metric x NPT, PG x NPT																			
Reference Numbers	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	261	262	263	
Hex Across Flats	27	30.5	32	37.6	37.6	41.3	47.2	55.9	57.2	70.1	80	106.4	106.4	114.3	127	90.2	120.7	139.7	
Hex Across Corners	31	35	36.7	43.2	43.2	47.5	53.4	64.3	66	81.8	92	122.4	122.4	131.4	147	104.1	139.4	161.3	
Male Thread Length	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	20	20	
Female Thread Length	20	20	20	20	25	25	25	25	25	25	35	35	35	35	35	22	22	22	
Total Length	42	42	42	42	47	47	47	48	48	48	58	58	62	62	62	48	48	49	

NPT x Metric, NPT x PG																			
Reference Numbers	232	233	234	235	236	237	238	239	240	241	242	243	244	260					
Hex Across Flats	23.4	28.6	30.5	37.6	37.6	44.5	55.9	61.2	70.1	90.2	90.2	106.4	114.3	90.2					
Hex Across Corners	26.8	32.9	35	43.2	43.2	51.1	64.3	70.4	81.8	103.7	103.7	122.4	131.4	103.7					
Male Thread Length	20	20	20	20	25	25	25	25	25	25	35	35	35	16					
Female Thread Length	17	17	17	17	17	17	17	17	17	17	17	22	22	35					
Total Length	43	43	43	43	48	48	49	49	49	49	59	64	64	58					

NPT x NPT																			
Reference Numbers	245	246	247	248	249	250	251	252	253	254	255	256	264						
Hex Across Flats	23.4	30.5	37.6	37.6	47.2	55.9	70.1	80	80	106.4	114.3	127	158.8						
Hex Across Corners	26.8	35	43.2	43.2	53.4	64.3	81.8	92	92	122.4	131.4	146	183.3						
Male Thread Length	20	20	20	25	25	25	25	25	35	35	35	35	35						
Female Thread Length	20	20	25	25	25	25	25	40	40	42	43	44	47						
Total Length	46	46	51	56	56	57	57	70	80	80	80	80	81						

Reducers

Metric and PG																	
Reference Numbers	301	302	303	304	305	306	307	308	309	310	311	312	313	324	325	326	
Hex Across Flats	27	30.5	31.8	36	37.6	44.5	47.2	55.9	57.2	70.1	90.2	106.4	114.3	61.2	120.7	127	
Hex Across Corners	31	35	36.7	41.5	43.2	51.1	53.4	64.3	66	81.8	103.7	122.4	131	70.7	139.4	146.6	
Male Thread Length	16	16		16	16	16	16	16	16	16	16	16	16	16	16	16	
Total Length	26	26		26	26	26	26	27	27	27	27	28	28	27	28	28	

NPT											
Reference Numbers	314	315	316	317	318	319	320	321	322	323	327
Hex Across Flats	23.4	27.9	34.9	44.5	52.1	61.2	80	90.2	106.4	120.7	146
Hex Across Corners	26.8	32.1	40.2	51.1	59.9	70.4	92	103.7	122.4	138.8	168.6
Male Thread Length	20	20	25	25	25	26	35	35	35	35	35
Total Length	30	30	35	35	35	36	46	46	46	47	47

STEP 2 (page 9) – Having obtained the reference number, go to the relevant column within the dimension tables to obtain the Adaptor or Reducer's dimensions.

Glass Filled Nylon Adaptors & Reducers IP66 68 NEMA 4X 6P

AD-E-4 & RD-E-4 Series Glass filled nylon Adaptors and Reducers provide a method of matching electrical threadforms on Ex Equipment while maintaining increased safety certification.

Adaptors are used where the thread size of the cable gland or connection device is larger than, or of an equivalent size to the entry thread of the enclosure.

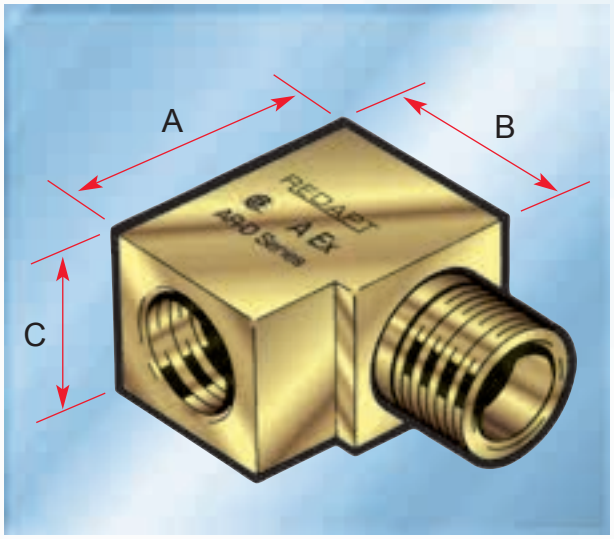
Reducers are used to reduce the entry thread of an enclosure to accept a cable gland or connection device with a smaller thread.

Approvals:	SIRA	00ATEX3091X (Equipment)
	SIRA	99ATEX3116U (Component)
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
Ingress Protection:		IP66 68, CSA Enclosure Type (NEMA) 4X 6P
Impact Resistance:		4Nm
Application Temperature Range:		Available on request
Materials:		Glass Filled Nylon
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
'O' Ring Material:		Nitrile (others available see page 29)
Part Number:		Please refer to page 26 for Part Numbering System

Available thread sizes and corresponding bore size

Metric	Bore	NPT	Bore	ISO Pipe	Bore	ET	Bore	PG	Bore
M16	9.3			⅜"	9.3	⅝"	9.3	**PG9**	9.0
M20	11.0	½"	12.0	½"	12.0	¾"	11.0	**PG11**	10.0
M25	16.0	¾"	13.0	¾"	13.0	**1"**	16.0	**PG13.5**	11.5
M32	21.0	**1"**	18.0	**1"**	18.0	**1¼"**	21.0	**PG16**	13.5
M40	31.0	**1¼"**	33.0	**1¼"**	33.0	**1½"**	31.0	**PG21**	19.0
M50	40.0	**1½"**	38.0	**1½"**	38.0	**2"**	40.0	**PG29**	28.0
								PG36	37.0
								PG42	44.0

90° Adaptors IP54 NEMA 3



AR-D Series 90º Adaptors provide a method of facilitating a cable gland or conduit termination entry where spacing precludes conventional entry.

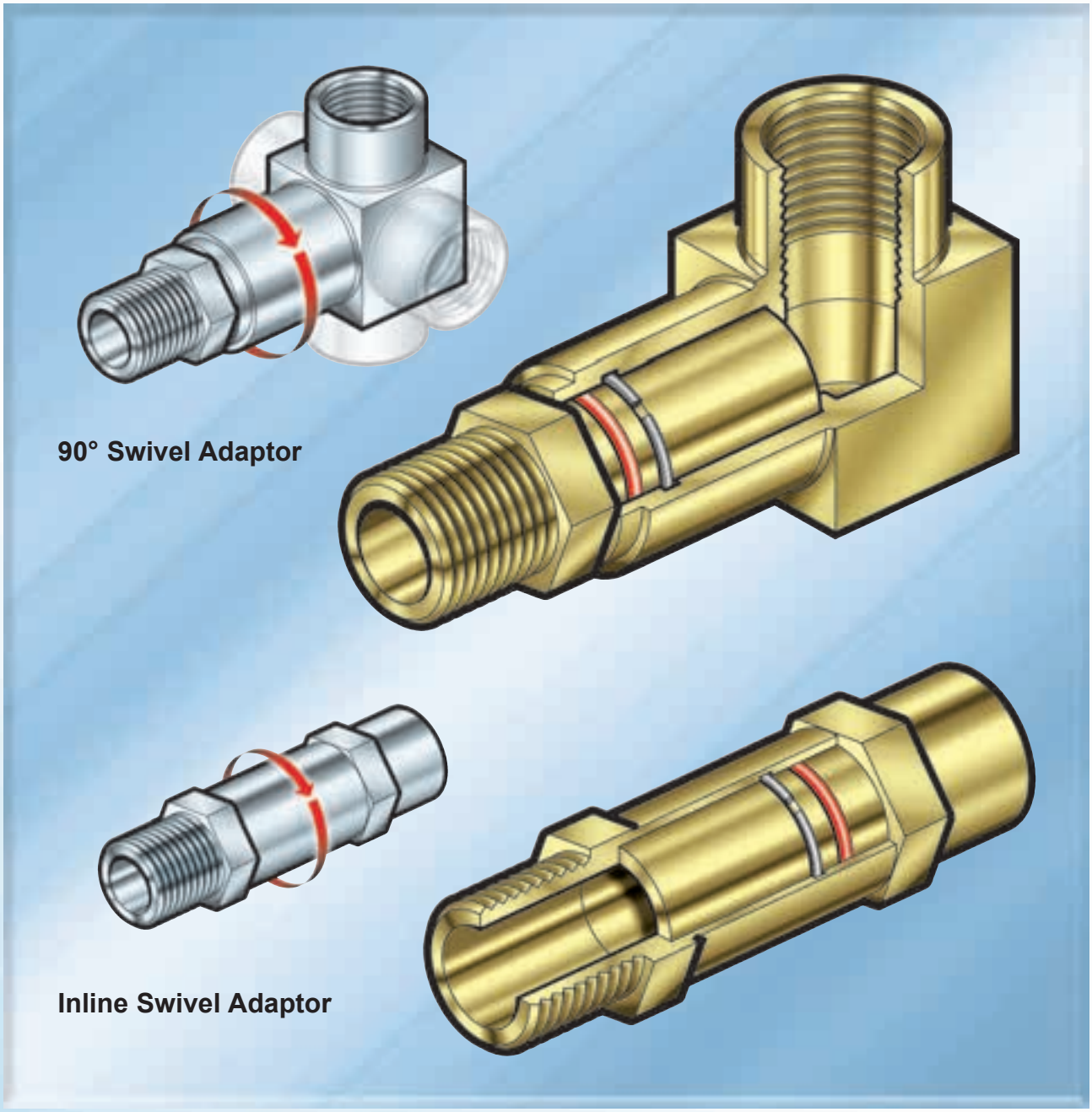
These adaptors are also available where the male thread is replaced with a female thread.

Approvals:	SIRA	99ATEX1195U
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U
Ingress Protection:		IP54, CSA Enclosure Type (NEMA) 3
		To maintain higher levels of ingress protection additional sealing maybe required, available on request.
Impact Resistance:		7Nm
Application Temperature Range:		–50 to +180°C
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
Plating:		Electroless Nickel, Zinc, other on application
Part Number:		Please refer to page 26 for Part Numbering System
Additional Information:		Where the thread in the equipment into which the 90º Adaptor is fitted is a tapered form care should be taken to ensure that the threads are fully engaged to maintain Ex integrity.

Dimensions of Metric Versions

Size	Bore	Male Length	A Height	B Length	C Width
M16 x M16	10.0	16.0	32.0	27.0	23.0
M20 x M20	14.0	16.0	38.0	29.0	25.4
M25 x M25	18.0	16.0	44.0	35.0	32.0
M32 x M32	24.0	16.0	50.0	44.0	40.0
M40 x M40	32.0	16.0	60.0	52.0	48.0
M50 x M50	41.0	16.0	72.0	65.0	60.0
M63 x M63	53.0	16.0	85.0	77.0	73.0
M75 x M75	64.0	16.0	98.0	94.0	87.0

Swivel Adaptor Type T

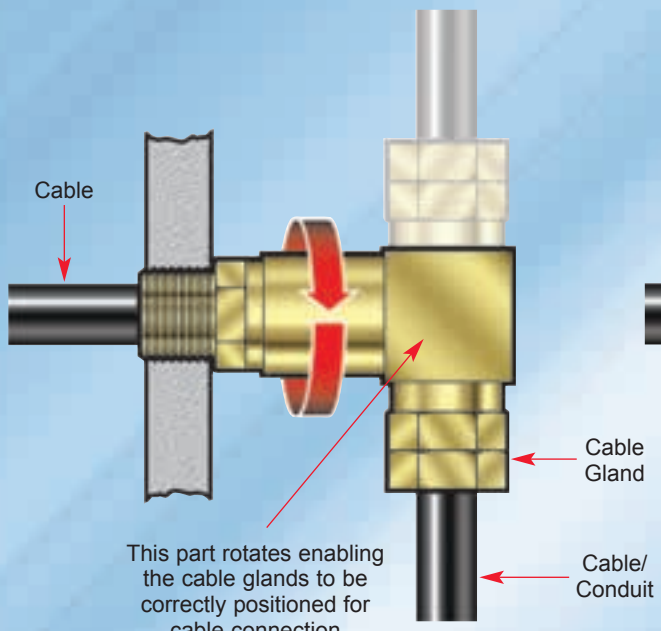


The new Redapt Swivel Adaptor has all the advantages of the standard inline and fixed 90º Adaptors, with the addition of the new “swivel feature”.

The 90º Swivel Adaptor has been designed to allow a full 360º choice of cable entry/exit positions. This enables the installer to run the cable in any direction which greatly improves ease of installation in confined or difficult situations. The cable entry/exit can be aligned without the over or under torque compromise imposed by the direction of cable. The inline type allows independent connection at both ends.

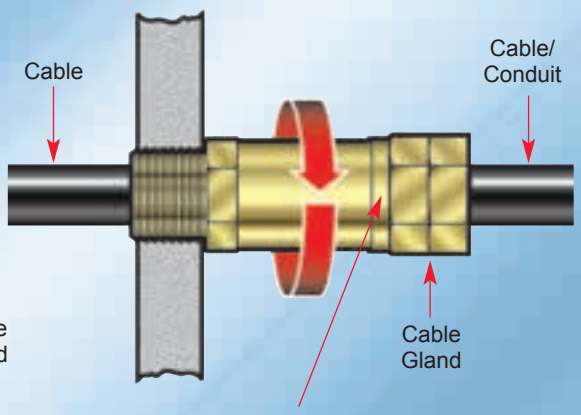
The temperature range of -50º C to +230º C is governed by the use of an internal silicon “O” ring which maintains the integrity of the product ensuring that it conforms to the over pressure requirement of the latest standard.

90° Swivel Adaptor



TP – Male/Female
TQ – Female/Female
TR – Male/Male

Inline Swivel Adaptor



TA – Male/Female
TC – Female/Female
TD – Male/Male

Approvals:	SIRA	10ATEX1275U
	CSA	
	GOST	
	IECEX	SIR 05.0042U
Ingress Protection:		IP66, CSA Enclosure Type
Impact Resistance:		20Nm
Application Temperature Range:		–50 to +180°C
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium
'O' Ring Material:		Silicone
Plating:		Electroless Nickel, Zinc, other on application
Part Number:		Please refer to page 26 for Part Numbering System

Sizes Available

Metric	NPT	ISO Pipe	PG
M20	**½"**	**½"**	**PG13.5**
M25	**¾"**	**¾"**	**PG16**
M32	**1"**	**1"**	**PG21**
M40	**1¼"**	**1¼"**	**PG29**
M50	**1½"**	**1½"**	**PG36**
M63	**2"**	**2"**	**PG42**
M75	**2½"**	**2½"**	**PG48**
	3"	**3"**	

Insulating Adaptors IP54 NEMA 3

AI-D Series Insulated adaptors provide a method of insulating a cable gland or connection device from the equipment into which it has been fixed.

This is achieved by inserting a glass filled nylon dielectric between the metallic male thread entering the equipment and the metallic female thread receiving the cable gland or connection device.

Approvals: SIRA
SIRA
CSA
GOST

Ingress Protection: IP54, CSA Enclosure Type (NEMA) 3
To maintain higher levels of ingress protection additional sealing is required, available on request.

Impact Resistance: 7Nm

Application Temperature Range: –20 to +60°C

Threadforms: Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET

Materials: Brass CZ121, 316 Stainless Steel, Aluminium

Insulating Material: Glass Filled Nylon

Plating: Electroless Nickel, Zinc, other on application

Part Number: Please refer to page 26 for Part Numbering System

Dimensions of Metric Versions (Ref)

Size	Hex A/F	Hex A/C	Total Length	Male Length	Female Depth	Bore
M20	30.5	35.5	61.0	16.0	17.0	13.5
M25	37.6	43.2	61.0	16.0	17.0	19.0
M32	47.2	54.3	61.0	16.0	17.0	25.0
M40	55.9	64.1	61.0	16.0	17.0	30.0
M50	70.1	80.8	61.0	16.0	17.0	40.5
M63	80.0	92.0	61.0	16.0	17.0	53.0
M75	95.3	109.5	61.0	16.0	17.0	65.0
M80 x 2.0	100.0	114.0	61.0	20.0	22.0	70.0
M85 x 2.0	106.4	114.0	61.0	20.0	22.0	75.0
M90 x 2.0	106.4	114.0	61.0	20.0	22.0	80.0

Application

To avoid relying on the contact between cable termination & equipment enclosure for grounding the cable armour, an insulated adaptor can be fitted to both ends of the cable with a grounding device (i.e. earth tag/lug) fitted between the adaptor and the termination. The armour current can then be taken from the grounding device to ground in a controlled, positive manner that can be **inspected** easily.

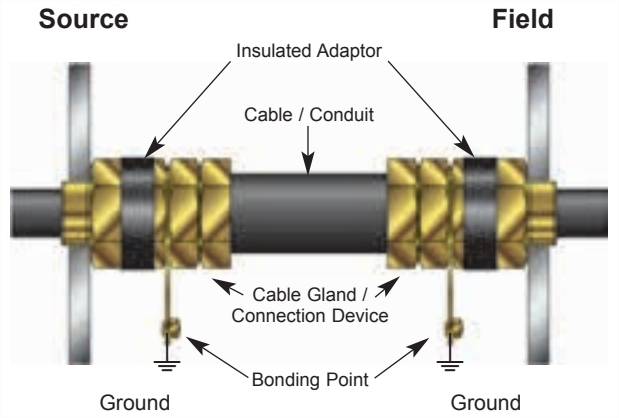
Single Point Grounding

In many applications it is sufficient to ground the cable armour at one end. For single point grounding the insulated adaptors would again be used at both ends of the cable but with the earth tag fitted only to the end where grounding is required.

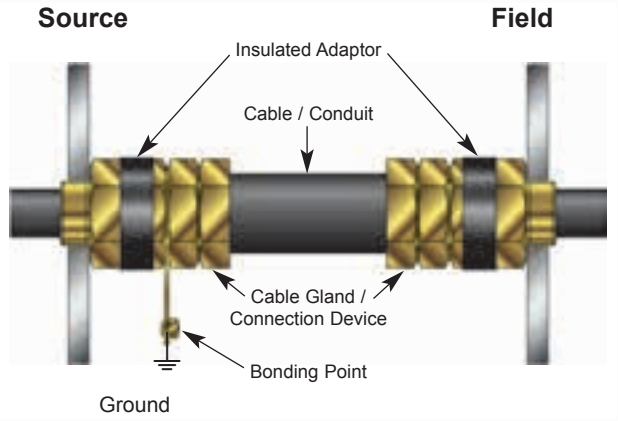
Single Point Grounding can:

- reduce the circulating currents that can cause heating of high capacity cables.
- reduce the risk of damage to electronic equipment within the enclosure in the event of a short circuit to ground through the enclosure.
- reduce the problems of electrical noise on the armour affecting the clean earth required for some sensitive instruments.

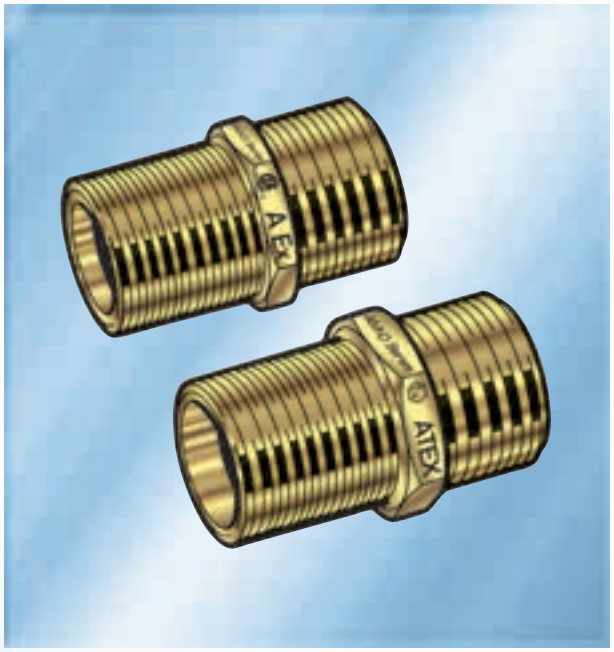
STANDARD APPLICATION



SINGLE POINT GROUNDING



Male x Male Adaptors IP54 NEMA 3



AM-D Series Male x Male Adaptors provide a method of matching female threadforms of the same size or of dissimilar size and threadform, while maintaining Ex certification. Ex Male x Male Adaptors are not certified for connecting Exd Enclosures.

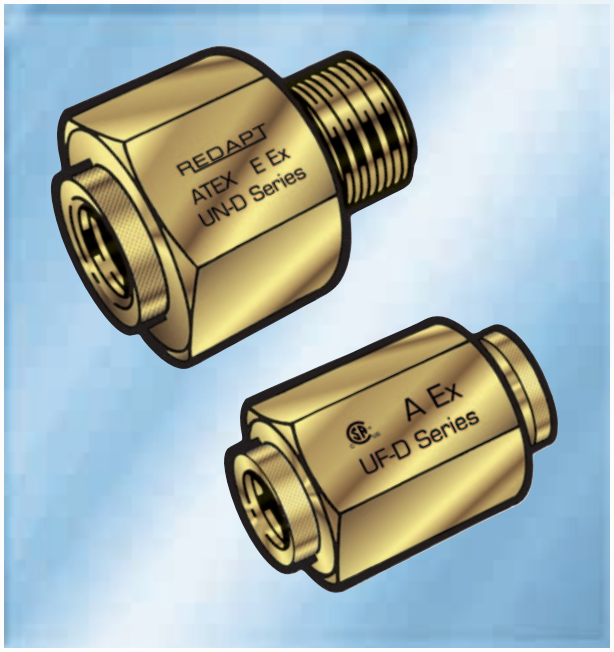
Approvals:	SIRA	99ATEX1114X
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U

Female x Female Adaptors and Reducers IP 6X

AF-U Series Female x Female Adaptors provide a method of matching male threadforms of the same size or of dissimilar size and threadform, while maintaining Ex certification.

Approvals:	IECEX	SIR 05.0042U

Unions IP54 NEMA 3

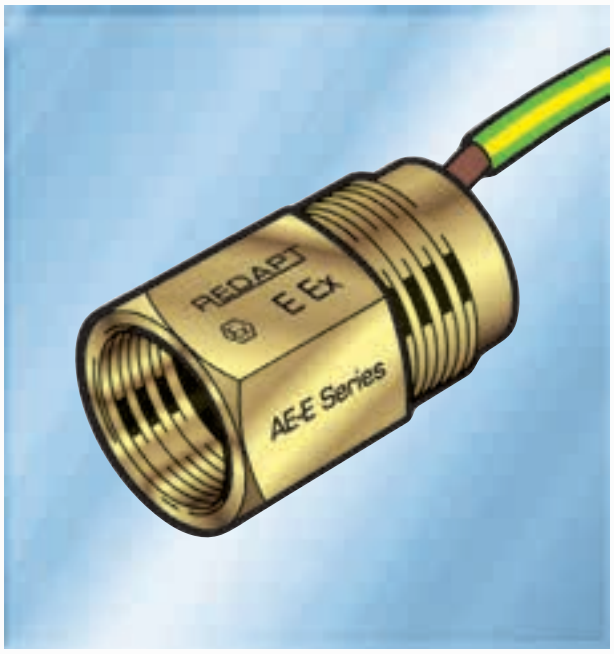


UN-D & UF-D Series Unions provide a running joint and eliminate exposed threads, while maintaining Ex certification.

Unions are available in Male x Female (UN-D) or Female x Female (UF-D) variations.

Approvals:	SIRA	00ATEX1096X (Equipment)
	SIRA	99ATEX1196U (Component)
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688

Earth Lead Adaptors IP54 NEMA 3



AE-E Series Earth Lead Adaptors provide a method of bonding a cable gland or conduit termination to a grounding or earth point within an enclosure, while maintaining Ex certification.

Approvals:	SIRA	00ATEX3093X (Equipment)
	SIRA	99ATEX3182U (Component)
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U

Dual Certified Dome Head Stopping Plugs IP66 68 & NEMA 4X 6P

PD-U Series Dual Certified Dome Head Stopping Plugs provide a method of filling unused entries in Ex equipment, maintaining the certification and integrity of the equipment.

Approvals:	SIRA	00ATEX1094X
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U
Ingress Protection:		IP66 68, CSA Enclosure Type (NEMA) 4X 6P
Impact Resistance:		20Nm (7Nm Aluminium)
Application Temperature Range:		Available on request
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium
'O' Ring Material:		Nitrile (others available see page 29)
Plating:		Electroless Nickel, Zinc, other on application
Part Number:		Please refer to page 26 for Part Numbering System

Sizes Available & Dimension References

Metric	Dim Ref	NPT	Dim Ref	ISO Pipe	Dim Ref	PG	Dim Ref
M16	**B**					**PG7**	**A**
M20	**C**	½"	**D**	½"	**D**	**PG9**	**B**
M25	**C**	¾"	**D**	¾"	**D**	**PG11**	**C**
M32	**C**	1"	**F**	1"	**D**	**PG13.5**	**C**
M40	**C**	1¼"	**F**	1¼"	**D**	**PG16**	**C**
M50	**C**	1½"	**F**	1½"	**D**	**PG21**	**C**
M63	**C**	2"	**F**	2"	**D**	**PG29**	**C**
M75	**C**	2½"	**G**	2½"	**D**	**PG36**	**C**
M80x2.0	**E**	3"	**G**	3"	**D**	**PG42**	**C**
M85x2.0	**E**	3½"	**G**			**PG48**	**C**
M90x2.0	**E**	4"	**G**				
M100x2.0	**E**						

Type ‘A’ & Type ‘B’ Stopping Plugs IP54 NEMA 3

PA-D Series A Type -
Externally accessible hexagon recess

PB-D Series B Type -
Internally accessible hexagon recess

Type A & B Stopping Plugs provide a method of filling unused entries in Ex equipment, maintaining the certification and integrity of the equipment.

Approvals:	SIRA	99ATEX1113X
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U
Ingress Protection:		IP54, CSA Enclosure Type (NEMA) 3
Impact Resistance:		7Nm
Application Temperature Range:		–50 to +180°C
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium
Plating:		Electroless Nickel, Zinc, other on application
Part Number:		Please refer to page 26 for Part Numbering System

Sizes Available & Dimension References

Metric	Dim Ref	NPT	Dim Ref	ISO Pipe	Dim Ref	PG	Dim Ref
M16	**B**					**PG7**	**A**
M20	**C**	½”	**D**	½”	**F**	**PG9**	**B**
M25	**C**	¾”	**D**	¾”	**F**	**PG11**	**C**
M32	**C**	1”	**E**	1”	**H**	**PG13.5**	**C**
M40	**C**	1¼”	**E**	1¼”	**H**	**PG16**	**C**
M50	**C**	1½”	**E**	1½”	**H**	**PG21**	**C**
M63	**C**	2”	**E**	2”	**H**	**PG29**	**C**
M75	**C**	2½”	**G**	2½”	**H**	**PG36**	**C**
M80x2.0	**G**	3”	**G**	3”	**H**	**PG42**	**C**
M85x2.0	**G**	3½”	**G**			**PG48**	**C**
M90x2.0	**G**	4”	**G**				
M100x2.0	**G**						

Glass Filled Nylon Stopping Plugs IP66 68 & NEMA 4X 6P

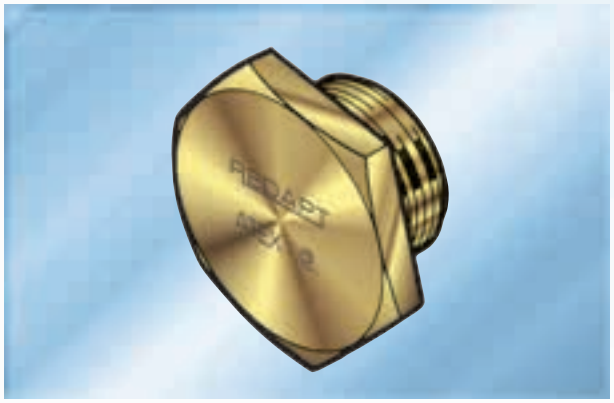
PD-E-4 Series Glass Filled Nylon Dome Head Stopping Plugs provide a method of filling unused entries in increased safety equipment, maintaining the certification and integrity of the equipment.

Approvals:	SIRA	00ATEX3091X
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 05.0042U
Ingress Protection:		IP66 68, CSA Enclosure Type (NEMA) 4X 6P
Impact Resistance:		4Nm
Application Temperature Range:		Available on request
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
Materials:		Glass Filled Nylon
'O' Ring Material:		Nitrile (others available see page 29)
Part Number:		Please refer to page 26 for Part Numbering System

Sizes Available & Dimension References

Metric	Dim Ref	NPT	Dim Ref	PG	Dim Ref
M16	**B**			**PG7**	**A**
M20	**C**	**½"**	**C**	**PG9**	**B**
M25	**C**	**¾"**	**C**	**PG11**	**C**
M32	**C**	**1"**	**C**	**PG13.5**	**C**
M40	**C**	**1¼"**	**C**	**PG16**	**C**
M50	**C**	**1½"**	**C**	**PG21**	**C**
M63	**C**	**2"**	**C**	**PG29**	**C**
M75	**C**	**2½"**	**C**	**PG36**	**C**
				PG42	**C**
				PG48	**C**

Increased Safety Hex Head Stopping Plugs IP54 (66) & NEMA 3



PH-E Series Increased Safety Hex Head Stopping Plugs provide a method of filling unused entries in Ex equipment, maintaining the certification and integrity of the equipment.

Approvals:	SIRA	00ATEX3092X
	CSA	1248014
	GOST	РОСС GB.ГБ06.B00688
Ingress Protection:		IP54, IP66 (requires 'O' ring), CSA Enclosure Type (NEMA) 3
Impact Resistance:		7Nm
Application Temperature Range:		–50 to +150°C
Threadforms:		Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium
Plating:		Electroless Nickel, Zinc, other on application
Part Number:		Please refer to page 26 for Part Numbering System

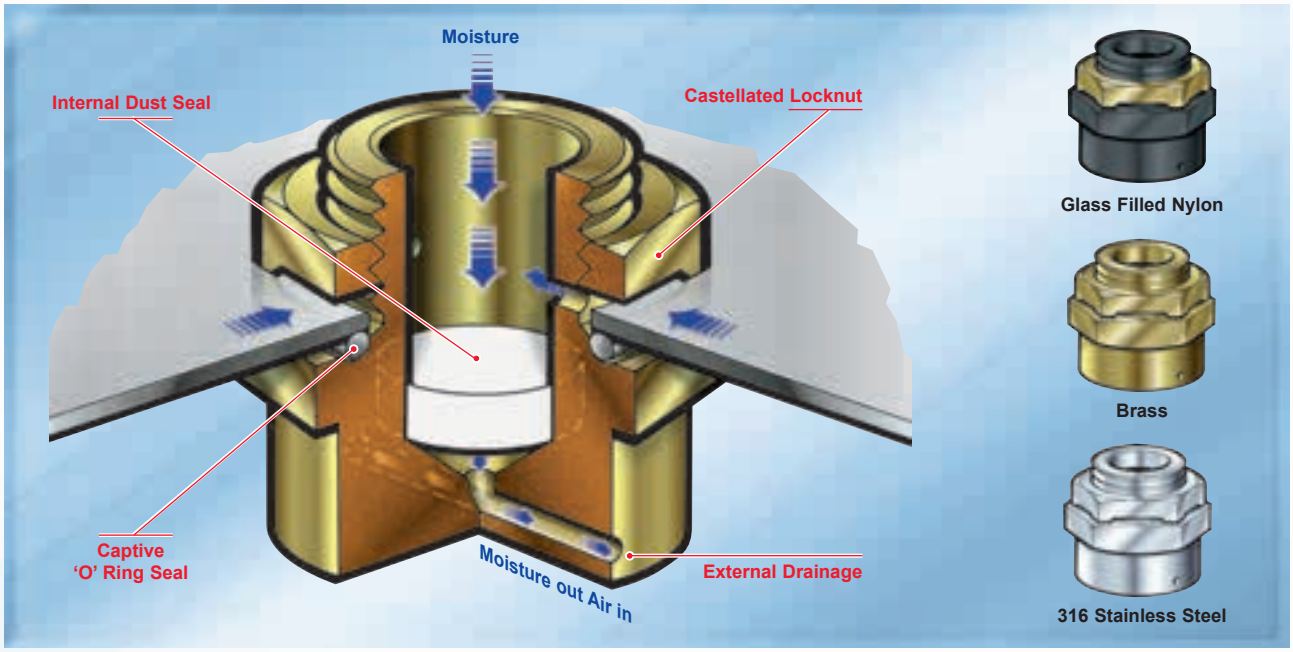
Sizes Available & Dimension References

Metric	Dim Ref	NPT	Dim Ref	ISO Pipe*	Dim Ref	PG	Dim Ref
M16	**A**					**PG7**	**A**
M20	**B**	½"	**E**	½"	**B**	**PG9**	**A**
M25	**B**	¾"	**E**	¾"	**B**	**PG11**	**B**
M32	**B**	**1"**	**F**	**1"**	**B**	**PG13.5**	**B**
M40	**C**	**1¼"**	**F**	**1¼"**	**C**	**PG16**	**B**
M50	**C**	**1½"**	**F**	**1½"**	**C**	**PG21**	**B**
M63	**D**	**2"**	**F**	**2"**	**D**	**PG29**	**C**
M75	**D**	**2½"**	**G**	**2½"**	**D**	**PG36**	**C**
		3"	**G**	**3"**	**D**	**PG42**	**C**
						PG48	**D**

* ISO pipe taper dims as NPT sizes.

Increased Safety Breather Drain IP66 & NEMA 4X

DP-E Series Breather Drain provides a method of effectively draining any moisture within an enclosure whilst allowing the air inside the enclosure to breathe with the surrounding atmosphere.



Approvals:	SIRA	99ATEX3050U
	CSA	185887
	GOST	РОСС GB.ГБ06.B00688
	IECEX	SIR 08.0024U
Ingress Protection:		IP66, CSA Enclosure Type (NEMA) 4X
Impact Resistance:		20Nm (7Nm GF Nylon & Aluminium)
Application Temperature Range:		Available on request
Materials:		Brass CZ121, 316 Stainless Steel, Aluminium, Glass Filled Nylon
Plating:		Electroless Nickel, Zinc, other on application
Part Number:		See option table below
Additional Information:		The Breather Drain is available in two styles to cater for either threaded entries or clearance holes.
Clearance Hole:		10mm length of thread, supplied complete with a castellated locknut and having 2 holes in the thread wall positioned directly opposite each other for optimum drainage.
Threaded Entry:		Supplied either with or without a castellated locknut and having 3 holes in the thread wall, offset to provide a 9mm range to accommodate differing wall thickness'.

Part Numbering System:

Product		Certification		Material		Plating		Thread Type		Thread Length		Hole Position	Castellated L/Nut
DP	Standard	E	Exe I&IIC	1	Brass	0	Unplated	04	M20	S1	10mm	2 Holes	With
				3	S/Steel	1	E/Nickel	05	M25	S2	10mm	2 Holes	Without
				4	GF Nylon	2	Zinc	06	M32	S3	15mm	3 Holes	With
								29	½" NPT	S4	15mm	3 Holes	Without
								30	¾" NPT				
								31	1" NPT				

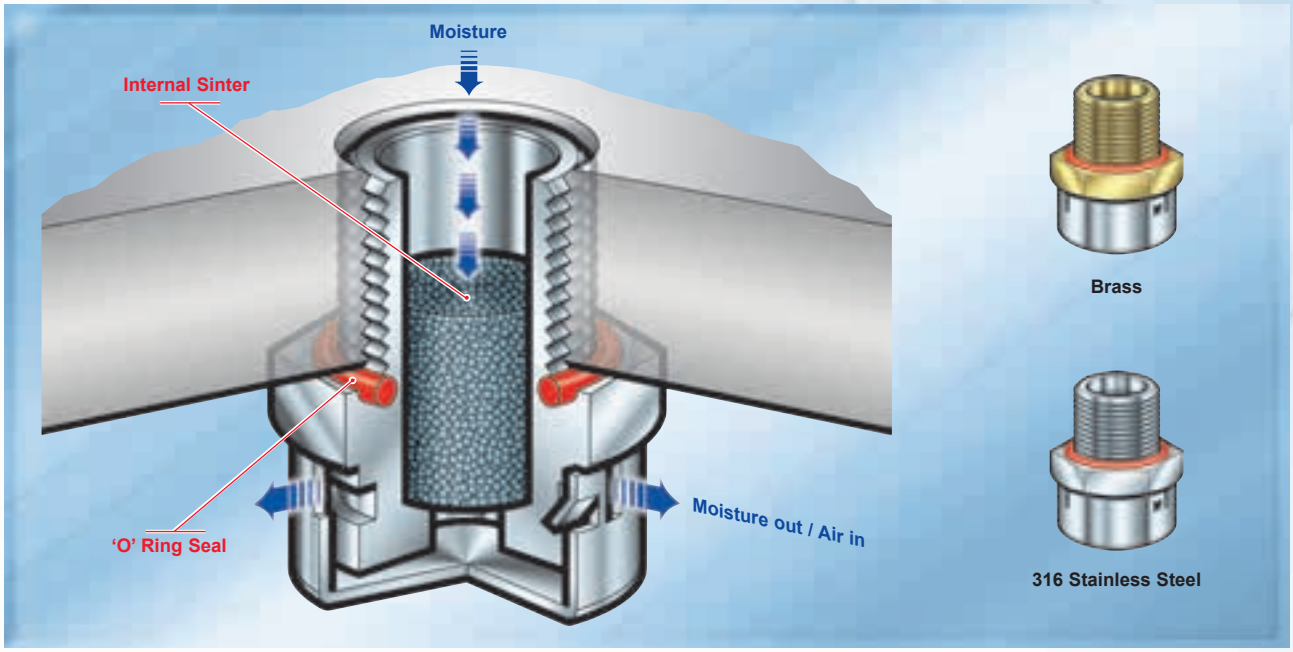
Note: Glass filled nylon version is only available in S3 & S4 options and is supplied complete with a brass castellated locknut.
NPT Threaded Breather Drains are only available in S3 and S4 options.

Example:

DP	-	E	-	3	-	0	-	04	-	S1
Standard		Exe I&IIC		Stainless Steel		Unplated		M20		10mm

Flameproof Breather IP66 Drain

BD-U Series The primary function is to effectively drain any water present within the enclosure, whilst allowing air in the enclosure to breath with the surrounding atmosphere, minimizing moisture build up within the enclosure.



Approvals: SIRA 08ATEX1240U
IECEX SIR 08.0096U

Protection Method: Exd Flameproof & Exe Increased Safety

Ingress Protection: IP66

Impact Resistance: 20Nm

Application Temperature Range: Available on request

Threadforms: ISO Metric to BS 2874, NPT to ANSI.ASME B1.20.1

Materials: Brass CZ121, Stainless Steel 316

'O' Ring Material: Silicone – others available on request

Plating: Electroless Nickel and Zinc

Part Number: See option table below

Standard Approved to: IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7, IEC/EN 61241-0, IEC/EN 61241-1

Dimensions (mm)			
Size	Hex A/F	Male Thread Length	Overall Length
M20	27.0	16	31
M25	31.75	16	31
½" NPT	27.0	20	35
¾" NPT	31.75	20	35

Part Numbering System:

Product		Certification		Material		Plating		Thread		'O' Ring	
BD	Standard Model	U	Exd I&IIC Exe I&IIC	1 3	Brass Stainless Steel	0 1 2	Unplated Electroless Nickel Zinc	04 05 29 30	M20 M25 ½" NPT ¾" NPT	D1 D2 D3 D4 D5 D6	Silicone Fluorosilicone Viton EPDM Neoprene Nitrile

Example:

BD - **U** - **3** - **0** - **04** - **D1**

Standard | Exd I&IIC & Exe I&IIC | Stainless Steel | Unplated | M20 | Silicone 'O' Ring

Accessories Locknuts

LN-Z Series locknuts provide a method of securing a threaded entry component into a piece of equipment.

Threadforms: Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET

Materials: Brass CZ121, 316 Stainless Steel, Aluminium, Steel, Nylon 6

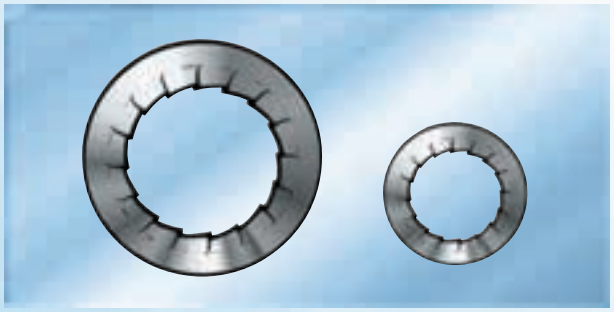
Plating: Electroles Nickel, Zinc, other on application

Part Number: Please refer to page 26 for Part Numbering System

Dimensions of Metric and NPT Versions
(All dimensions are for reference use only and may differ from published table)

Dimensions of Metric and NPT Versions (Metallic)			
	Hex A/F	Hex A/C	Thickness
M16	20.0	23.0	3.0
M20	24.0	26.7	3.0
M25	30.0	33.5	3.5
M32	36.0	39.0	4.0
M40	46.0	50.0	4.5
M50	60.0	69.0	5.5
M63	75.0	86.2	7.0
M75	90.2	103.7	7.0
M80x2.0	90.2	103.7	8.0
M85x2.0	106.4	122.3	8.0
M90x2.0	106.4	122.3	8.0
M100x2.0	114.3	131.5	9.0
½" NPT	27.0	31.0	3.0
¾" NPT	30.5	35.0	3.5
1" NPT	37.6	43.4	5.0
1¼" NPT	52.0	60.0	5.5
1½" NPT	60.0	69.0	6.0
2" NPT	75.0	86.2	7.0
2½" NPT	80.0	92.0	9.0
3" NPT	106.4	122.3	9.0
3½"NPT	114.3	131.5	10.0
4" NPT	127.0	146.1	10.0

Accessories Serrated Washers



SR-Z Series serrated washers can be used in conjunction with a locknut to provide additional fixing security and aid in bonding an entry component to the equipment.

Thread Types: Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET

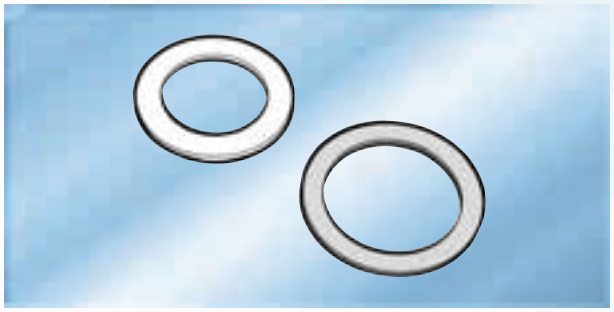
Materials: 316 Stainless Steel, Steel/Zinc

Part Number: Please refer to page 26 for Part Numbering System

Dimensions of Metric and NPT Versions
(All dimensions are for reference use only and may differ from published table)

Dimensions of Metric and NPT Versions			
Size	O/D	Thickness	
		Min	Max
M16	25.5	1.0	2.5
M20	32.5	1.5	3.0
M25	39.5	1.5	3.75
M32	49.5	1.5	4-5
M40	64.5	1.5	4-5
M50	70.8	1.5	4-5
M63	100.0	1.5	4-5
M75	112.0	1.5	4-5
½" NPT	32.5	1.5	3.0
¾" NPT	39.5	1.5	3.75
1" NPT	49.5	1.5	4-5
1¼" NPT	64.5	1.5	4-5
1½" NPT	80.5	1.5	4-5
2" NPT	100.0	1.5	4-5
2½" NPT	112.0	1.5	4-5
3" NPT	125.0	1.5	4-5

Accessories Sealing Washers



SW-Z Series IP Sealing Washers are fitted between an entry component and the equipment to maintain the ingress protection of the equipment.

Thread Types: Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET

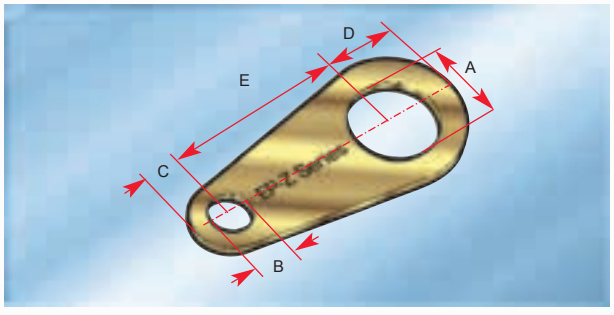
Materials: Nylon, Red Fibre, Teflon, (PTFE), Neoprene

Part Number: Please refer to page 26 for Part Numbering System

Dimensions of Metric and NPT Versions
(All dimensions are for reference use only and may differ from published table)

Dimensions of Metric and NPT Versions (Nylon 6 & Red Fibre)		
Size	O/D	Thickness
M16	26.0	1.5
M20	30.5	1.5
M25	38.0	1.5
M32	42.6	1.5
M40	56.0	1.5
M50	64.0	1.5
M63	78.0	1.5
M75	90.0	1.5
½" NPT	32.0	1.5
¾" NPT	38.5	1.5
1" NPT	45.0	1.5
1¼" NPT	55.5	1.5
1½" NPT	65.0	1.5
2" NPT	79.0	1.5
2½" NPT	90.0	1.5
3" NPT	116.0	1.5

Accessories Earth Tags



EP-Z Series Earth Tags are used to provide an earth-bond connection for an entry component.
(This illustration is for pictorial representation only, The outside shape may differ without affecting the functionality.)

Available Sizes: Metric, NPT, NPSM, ISO Pipe (BSP), PG, ET

Materials: Brass CZ121, 316 Stainless Steel, Aluminium

Plating: Electroless Nickel, Zinc, other on application

Part Number: Please refer to page 26 for Part Numbering System

Dimensions of Metric and NPT Versions
(All dimensions are for reference use only and may differ from published table)

Dimensions of Metric and NPT Versions					
Size A	Thickness	B	C	D	E
M16	1.4	7.0	7.0	13.5	35.3
M20	1.4	7.0	7.0	13.5	35.3
M25	1.4	10.5	10.0	18.5	41.4
M32	1.4	12.0	13.0	23.3	53.9
M40	1.4	14.0	17.5	26.3	60.0
M50	1.4	14.0	17.5	32.1	76.1
M63	1.4	14.0	17.5	39.5	84.0
M75	1.4	14.0	17.5	44.0	94.5
M80	2.0	14.0	24.0	62.5	95.3
M85	2.0	14.0	24.0	62.5	95.3
M90	2.0	14.0	24.0	62.5	95.3
M100	2.0	14.0	24.0	62.5	103.5
½" NPT	1.4	7.0	7.0	15.0	34.9
¾" NPT	1.4	10.5	10.5	18.3	41.4
1" NPT	1.4	12.0	12.0	13.1	22.9
1¼" NPT	1.4	14.0	17.5	26.7	63.5
1½" NPT	1.4	14.0	17.5	32.1	76.1
2" NPT	1.4	14.0	17.5	39.6	84.0
2½" NPT	1.4	14.0	17.5	44.1	95.3
3" NPT	2.0	14.0	23.7	62.5	103.5

Part Numbering System

Product	
Adaptors & Reducers	
AD	**Adaptor**
RD	Reducer
AR	90° Adaptor
AI	Insulated Adaptor
AM	Male x Male Adpt.
AE	Earth Lead Adpt.
AF	Female x Female Adpt.
UN	Union (MxF)
UF	Union (FxF)
Swivel Adaptors	
TA	Inline Male x Female
TC	Inline Female x Female
TD	Inline Male x Male
TP	90° Male x Female
TQ	90° Female x Female
TR	90° Male x Male
Stopping Plugs	
PD	Dome Head Plug
PA	Type A Plug
PB	Type B Plug
PH	Hex Head Plug
Breather Drain	
BD	Breather Drain
DP	Breather Drain
Accessories	
LN	Locknut
SR	Serrated Washer
SW	IP Washer
EP	Pear Earth Tag

Certification	
U	**Exd I&IIC & Exe I&IIC**
D	Exd I&IIC
E	Exe I&IIC
Z	Industrial

Material	
1	Brass
2	Mild Steel
3	**Stainless Steel**
4	GF Nylon
5	Aluminium
6	Nylon 6
7	Red Fibre

Plating	
0	**Unplated**
1	Electroless Nickel
2	Zinc
3	Cadmium
6	Chromatise

Example:

AD - U - 3 - 0 - 29 - 04

Adaptor - Exd I&IIC & Exe I&IIC - Stainless Steel - Unplated - ½" NPT Male x M20 Female

Important Note: **Always Quote Male Thread First**

MALE AND FEMALE THREAD REFERENCE NUMBERS

Metric	
03	M16
04	**M20**
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75
11	M80x2.0
12	M85x2.0
13	M90x2.0
14	M100x2.0
15	M110x2.0
BZ	M120x2.0

ET Imperial Conduit	
17	⅝" ET
18	¾" ET
19	1" ET
20	1¼" ET
21	1½" ET
22	2" ET
23	2½" ET
24	3" ET

NPT	
29	**½" NPT**
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT
36	3" NPT
37	3½" NPT
38	4" NPT

NPSM	
42	½" NPSM
43	¾" NPSM
44	1" NPSM
45	1¼" NPSM
46	1½" NPSM
47	2" NPSM
48	2½" NPSM
49	3" NPSM
50	3½" NPSM
51	4" NPSM

ISO Pipe Parallel (BSPP)	
55	½" BSPP
56	¾" BSPP
57	1" BSPP
58	1¼" BSPP
59	1½" BSPP
60	2" BSPP
61	2½" BSPP
62	3" BSPP
63	3½" BSPP
64	4" BSPP

ISO Pipe Taper (BSPT)	
68	½" BSPT
69	¾" BSPT
70	1" BSPT
71	1¼" BSPT
72	1½" BSPT
73	2" BSPT
74	2½" BSPT
75	3" BSPT
76	3½" BSPT
77	4" BSPT

PG	
79	PG7
80	PG9
81	PG11
82	PG13.5
83	PG16
84	PG21
85	PG29
86	PG36
87	PG42
88	PG48

Product Approvals

ATEX Directive Compliance

- The ATEX Directive (94/9/EC) applies to equipment and protective systems intended for use in potentially explosive atmospheres within Europe. The directive outlines the Conformity Assessment Procedures and Product Classification for Ex products. All Ex products placed on the market after 30th June 2003 within Europe must comply with these requirements.

- Redapt comply with ATEX having had an EC type-examination carried out on our Ex product range and our Production QA assessed and approved. This is inline with the requirements for Ex products for use in Gas Groups I&II.

North American Approval

- The Canadian Standards Association (CSA) develop standards, test and certify products for use in Canada and Internationally. CSA International is recognised by the U.S. Occupational Safety and Health Administration (OSHA) under the Nationally Recognised Testing Laboratory (NRTL) scheme and are able to test and certify products for use in hazardous locations within the U.S.A. as well as Canada. Traditionally Ex products used within North America have been designed and tested for compliance within the 'Class and Division System'. Recent updates of both electrical codes (NEC & CEC) have incorporated the 3 zone concept of area classification or 'Zone System' for Class I.

- Redapt's products have been assessed and certified for use throughout North America in both the 'Class and Division System' and the 'Zone System'.

IEC Ex Approval

- The International Electrotechnical Commission (IEC) have developed the IECEx International Certification Scheme in an attempt to harmonise national standards used throughout the World with the aim of producing an approval that is recognised globally. The IECEx scheme is based on the 3 zone concept of area classification. Collaboration between IEC and CENELEC has created virtually identical sets of standards that in time will become identical.

- Redapt's products have not been approved specifically under the IEC Ex scheme, however the products are compliant with the requirements of the scheme via both the CENELEC EN600701 Ex approvals and CSA E79 Ex approvals.

GOST-R Approval

- The explosion proof components are to be used in accordance with explosion proof mark, requirements of GOST R 51330.13, current "Electrical plant arrangement rules" (PUE, art. 7.3), "Technical maintenance rules for electrical plants" (PTEEP, art. 3.4), other normative documents regulating application of electrical equipment in explosive areas, and manufacturer's instruction manual.

- Applicable explosive areas and condition of use, categories and groups of explosive air mixtures with gases and vapors are in accordance with GOST R 51330.9, GOST R 51330.11 and requirements of "Electrical plants arrangement rules" (PUE, art. 7.3).

Certification Overview

	Ex, A Ex 3 Zone Classification					NEC CEC Class / Divisions				
	Method of Protection	Zone 1	Zone 2	Gas Group I	Gas Group II	Class I Div 1	ABCD Div 2	Class II EFG	Class III	Std. Loc.
Adaptors & Reducers – Dual Metallic, Metallic and Glass Filled Nylon										
AD-U, RD-U	de	Yes	Yes	*Yes	Yes	Yes	Yes	Yes	Yes	Yes
AM-D	e	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
AF-U	de	Yes	Yes	Yes	Yes	No	No	No	No	No
Stopping Plugs – Dome Head Dual Metallic, Type A & B and Glass Filled Nylon										
PD-U	de	Yes	Yes	*Yes	Yes	Yes	Yes	Yes	Yes	Yes
PD-E-4, PH-E	e	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
PA-D, PB-D	d	Yes	Yes	*Yes	Yes	Yes	Yes	Yes	Yes	Yes
Breather Drain – Metallic and Glass Filled Nylon										
DP-E	e	Yes	Yes	*Yes	Yes	No	Yes	Yes	Yes	Yes
BD-U	de	Yes	Yes	Yes	Yes	No	No	No	No	No
Other Products – Insulated, 90° Adaptors and Unions										
AI-D	d	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
AR-D	d	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
UN-D, UF-D	e	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes

- *Aluminium versions of AD-U, RD-U, PD-U, PA-D, PB-D Series and GF Nylon and Aluminium versions of DP-E Series are not suitable for Group I applications.
- Temperature Classification - Redapt's products do not carry a Temperature Class or 'T' rating as they are passive and do not generate any heat.

Revised Certificate Numbers

	Equipment	Component	CSA	GOST	IECEx
Adaptors & Reducers					
AD-U, RD-U	Sira 00ATEX 1094X	Sira 99ATEX1115U	1248014	РОСС GB.ГБ06.B00688	SIR 05.0042U
AD-E-4, RD-E-4	Sira 00ATEX3091X	Sira 99ATEX3116U	1248014	РОСС GB.ГБ06.B00688	
AR-D		Sira 99ATEX 1195U	1248014	РОСС GB.ГБ06.B00688	SIR 05.0042U
AI-D					
Stopping Plugs					
PD-U	Sira 00ATEX 1094X		1248014	РОСС GB.ГБ06.B00688	SIR 05.0042U
PD-E-4	Sira 00ATEX 3091X		1248014	РОСС GB.ГБ06.B00688	
PA-D, PB-D	Sira 99ATEX 1113X		1248014	РОСС GB.ГБ06.B00688	SIR 05.0042U
PH-E	Sira 00ATEX 3092X		1248014	РОСС GB.ГБ06.B00688	
Breather Drain					
DP-E		Sira 99ATEX 3050U	185887	РОСС GB.ГБ06.B00688	SIR 08.0024U
BD-U		Sira 08ATEX 1240U			SIR 08.0096U
Other Products					
AF-U					SIR 05.0042U
AE-E	Sira 00ATEX 3093X	Sira 99ATEX 3182U	1248014	РОСС GB.ГБ06.B00688	SIR 05.0042U
UN-D, UF-D	Sira 00ATEX 1096X	Sira 99ATEX 1196U	1248014	РОСС GB.ГБ06.B00688	
AM-D	Sira 00ATEX 1114X		1248014	РОСС GB.ГБ06.B00688	SIR 05.0042U

Equipment Certificates, Ex Thread Adaptors and Ex Stopping Plugs

- Redapt's Adaptors & Reducers with metric female threads (Ex Adaptors) and full range of Stopping Plugs (Ex Stopping Plugs) are certified as apparatus and granted Equipment Certificates. This means that they can be fitted to Ex apparatus enclosures without further certification (see installation instructions).

Component Certificates

- Products certified as components require further approval before they can be fitted to Ex apparatus enclosures. A certificate number ending with the 'U' suffix denotes a component certificate (see installation instructions).

Ingress Protection

Hazardous area standards generally state a minimum IP rating of IP54 or NEMA 3. However, it is essential when selecting Redapt's products to ensure that the product will maintain the IP or NEMA rating of the equipment and the integrity of the installation.

The following table contains definitions detailing the environmental protection levels that Redapt products are capable of maintaining:

IP Codes are based on the IEC Standard Dust/Water 50269 – Degrees of protection provided by enclosures 1st Numerical – Protection against solid objects 2nd Numerical – Protection against water	
IP 54	• Dust protected. Prevents ingress of dust sufficient to cause harm. • Protected from splashing water from any direction.
IP 66	• Dust tight. No ingress of dust possible. • Protected against heavy seas or powerful jets of water. Prevents ingress sufficient to cause harm.
IP 67	• Dust tight. No ingress of dust possible. • Protected against harmful ingress of water when immersed between a depth of 150mm to 1m.
IP 68	• Dust tight. No ingress of dust possible. • Protected against submersion. Suitable for continuous immersion in water at stated depth. (Depth stated for Redapt products = 2m)

North American and Canadian markets define environmental protection as CSA and NEMA Enclosure Types	
Type 3	• Type 3 enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust; and damage from external ice formation.
Type 4	• Type 4 enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against wind blown dust and rain, splashing water, hose directed water; and damage from external ice formation.
Type 4X	• Type 4X enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, wind blown dust and rain, splashing water, hose directed water; and damage from external ice formation.
Type 6	• Type 6 enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose directed water, the entry of water during occasional temporary submersion at a limited depth; and damage from external ice formation.
Type 6P	• Type 6P enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose directed water, the entry of water during prolonged submersion at a limited depth; and damage from external ice formation.

Integral 'O' Rings Available		
Silicone	Nitrile	Neoprene
Fluorosilicone	EPDM	Viton

Thread Dimension Charts

ISO Metric		
BS 3643 1.5mm Pitch		
Size	Major Dia.	TPI
M16	15.97	16.93
M20	19.97	16.93
M25	24.97	16.93
M32	31.97	16.93
M40	39.97	16.93
M50	49.97	16.93
M63	62.97	16.93
M75	74.97	16.93
2.0mm Pitch		
M80	79.97	12.70
M85	84.97	12.70
M90	89.97	12.70
M100	99.97	12.70
M110	109.97	12.70
M120	119.97	12.70

NPT		
ANSI.ASME B1.20.1		
Size	Pipe Dia.	TPI
½”	21.34	14
¾”	26.67	14
1”	33.40	11.5
1¼”	42.16	11.5
1½”	48.26	11.5
2”	60.33	11.5
2½”	73.03	8
3”	88.90	8
3½”	101.60	8
4”	114.30	8

PG		
DIN 40430 (Withdrawn)		
Size	Major Dia.	TPI
PG7	12.50	20
PG9	15.20	18
PG11	18.60	18
PG13.5	20.40	18
PG16	22.50	18
PG21	28.30	16
PG29	37.00	16
PG36	47.00	16
PG42	54.00	16
PG48	59.30	16

Alternate ISO Pipe Thread Designations	
UK	**BSP P**arallel or **T**aper BS2279 (BS21)
Europe	**G**(Parallel **GK**(Taper) **R**(Parallel) **RK**(Taper)
Japan	**PF**(Parallel) JIS B 303
CIS	**K mpy** (Taper)

BSP ISO Pipe Thread		
ISO R/7; UNI 6125		
Size	Major Dia.	TPI
⅜”	16.66	19
½”	20.96	14
¾”	26.44	14
1”	33.25	11
1¼”	41.91	11
1½”	47.80	11
2”	59.61	11
2½”	75.18	11
3”	87.88	11

ET Imperial Conduit		
BS31		
Size	Major Dia.	TPI
⅝”	15.88	18
¾”	19.05	16
1”	25.40	16
1¼”	31.75	16
1½”	38.10	14
2”	50.80	14
2½”	63.50	14
3”	76.20	14

THREAD DIMENSION SUBSTITUTION CHART

Metric	NPT (or NPS)	PG	BSP ISO Pipe	ET
M16	–	7, 9	–	⅝”
M20	½”	11, 13.5	½”	¾”
M25	¾”	16	¾”	1”
M32	1”	21	1”	1¼”
M40	1¼”	29	1¼”	1½”
M50	1½”	36	1½”	2”
M63	2”	42, 48	2”	2½”
M75	2½”	–	2½”	3”
M90x2.0	3”	–	3”	–
M100x2.0	3½”	–	–	–
M110x2.0	–	–	–	–
M120x2.0	–	–	–	–

Notes

- *The dimensions shown within this catalogue may vary due to material availability.*
- *All dimensions shown are in mm.*
- *A copy of Redapt's terms and conditions of sale are available on request.*

Redapt specialise in the manufacture and supply of thread turned Ex certified equipment for use in potentially explosive, hazardous areas. Products we offer include adaptors, reducers, stopping plugs and accessories in a range of threadforms and materials to meet the requirements of hazardous installation.

With over 25 years of expertise we have developed our product range to meet the needs of every installation problem and have established a reputation for delivering the highest possible standards of product quality and customer service.

Typical users of Redapt products include leading Oil & Gas operators, petrochemical and pharmaceutical companies, engineering contractors and hazardous area equipment manufacturers worldwide.

To ensure consistent product quality Redapt work within a Quality Assurance System that is approved to ISO 9001: 2000 and assessed by the British Standards Institute

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