SAFETY, MAINTENANCE AND MOUNTING INSTRUCTIONS

CESI 18 ATEX 025 X / IECEx CES 18.0013X

Diaphragm Sealed Gland



453
453O
453U
453...-LSK

Shomal Engineering & Manufacturing Co.
(Mashin Sazi Shomal (Pirooz) Co.)
Office: No. 5, 2nd Baharestan St. - Pasdaran Ave. - Tehran – Iran, Post code:
19586-54341 Factory: C2 St, Salmanshahr industrial Park, Mazandaran, Iran
www.shomal.com
Tel:+98 21 22541212

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1 MARKINGS and APPLICABLE CODES

MARKINGS

SEMC 453.	GROUP I	CE_{0035}	I M2 Ex db I Mb Ex eb I Mb IP66/68 Ta-60°C to +80°C CESI 18 ATEX 025 X IECEx CES 18.0013X
	GROUP II	CE_{0035}	II 2GD Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db Ta-60°C +80°C IP66/68 CESI 18 ATEX 025 X IECEx CES 18.0013X
SEMC 453U	GROUP II	CE_{0035}	II 2GD Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db Ta-60°C +80°C IP66/68 CESI 18 ATEX 025 X IECEx CES 18.0013X
SEMC 453O..	GROUP II	CE_{0035}	II 2GD Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db Ta-60°C +80°C IP66/68 CESI 18 ATEX 025 X IECEx CES 18.0013X

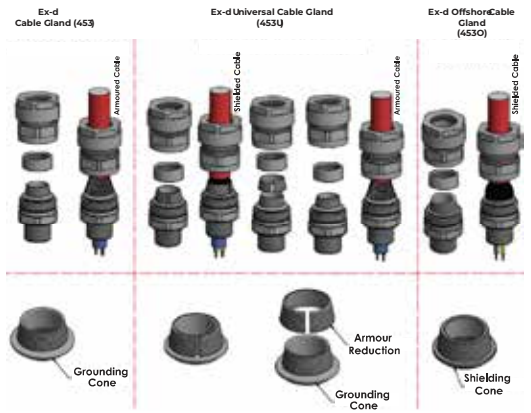
APPLICABLE STANDARDS

DIRECTIVE 2014/34/EU	EN/IEC 60079-7
EN/IEC 60079-0	EN/IEC 60079-31
EN/IEC 60079-1	EN/IEC 60529

OPERATION TEMPERATURES

The temperature range of use is Ta -60°C to +80°C for all materials.

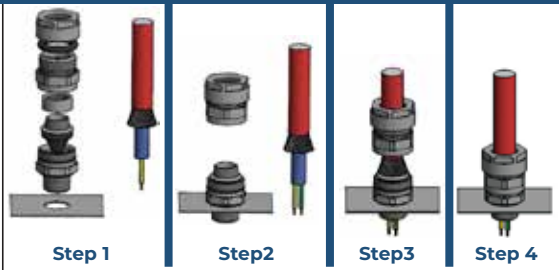
2 PRODUCT PARTS



3 453 PRODUCT PARTS



4 453 MOUNTING INSTRUCTION



Step 1) Choose the optimal cable according to clamping ranges submitted in the certificate and prepare the cable for installation. All Sub-Parts required for installation are shown respectively above.

Step 2) Separate lower body and upper body from each other so that ensure the grounding cone is visible in the lower body. Mount the lower body to the appropriate opening on enclosure and tighten with sufficient torque value. Use locknut to tighten if the enclosure is nonthreaded.

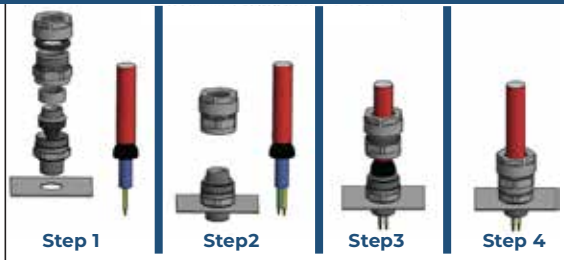
Step 3) Insert the cable to the inside of upper body and then mount with lower body as shown. Ensure that Armours of the cable remains above the grounding cone.

Step 4) Tighten the upper body with sufficient torque value . For torque values please refer the tables "Size and torque table". Visually check if armour is securely clamped. If not, repeat the clamping process.

5 453O PRODUCT PARTS



6 453O MOUNTING INSTRUCTION



Step 1) Choose the optimal cable according to clamping ranges submitted in the certifcate and prepare the cable for installation. All sub-parts required for installation are shown respectively above.

Step 2) Separate lower body and upper body from each other so that ensure the shielding cone is visible in the lower body. Mount the lower body to the appropriate opening on enclosure and tighten with sufficient torque value. Use locknut to tighten if the enclosure is non-threaded.

Step 3) Insert the shielded cable to the inside of upper body and then mount with lower body as shown.

Step 4) Tighten the upper body with sufficient torque value. For torque values please refer the tables "Size and torque table".

7 453U PRODUCT PARTS



8 453U MOUNTING INSTRUCTION

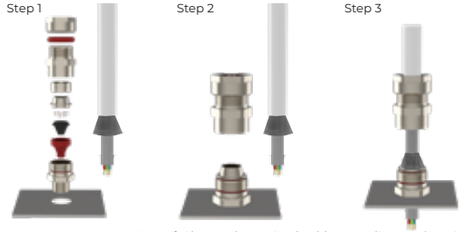


Step 1) Choose the optimal cable according to clamping ranges submitted in the certifcate and prepare the cable for installation. All sub-parts required for installation are shown respectively above.
Step 2) Seperate lower body and upper body from each other so that ensure grounding cone and universal armour reduction are visible in the lower body. Mount the lower body to the appropriate opening on enclosure and tighten with sufficient torque value.Use locknut to tighten if the enclosure is non-threaded.
Step 3) Insert the braided cable to the inside of upper body. Lift the universal armour reduction up and slip the cable through the universal armour reduction until the braids cover the grounding cone. Mount the universal armour reduction with the grounding cone over the braids.
Step 4) Ensure that braids of the cable remains between the grounding cone and universal armour reduction as shown.
Step 5) Tighten the upper body with sufficient torque value. For torque values please refer the tables "Size and torque table". Visually check if braid of the cable is securely clamped. If not , repeat the clamping process.

9 453...-LSK PRODUCT PARTS



10 453...-LSK MOUNTING INSTRUCTION





Step 1) Choose the optimal cable according to clamping ranges submitted in the certificate and prepare the cable for installation. All Sub-Parts required for installation are shown respectively above.

Step 2) Separate lower body and upper body from each other so that ensure the grounding cone is visible in the lower body.Mount the lower body to the appropriate opening on enclosure and tighten with sufficient torque value. Use locknut to tighten if the enclosure is non- threaded.

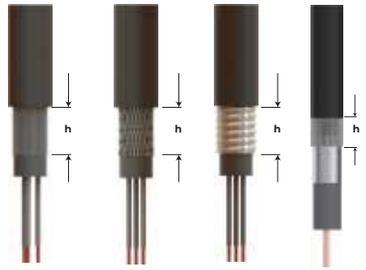
Step 3) Insert the cable to the inside of upper body and then mount with lower body as shown. Ensure that Armours of the cable remains above the grounding cone.

Note: For lead sheathed cable, the lead sheath must pass through the grounding washer when installation is complete. The grounding washer on 453 Glands will automatically engage the lead sheath.

Step 4) Tighten the upper body with sufficient torque value . For torque values please refer the tables "Sizes and torque of cable glands".Visually check if armour is securely clamped. If not, repeat the clamping process.

11 PREPARATION OF CABLES

-Please refer to the figure below, for details about the preperation of steel wire armour, braided and metal tape shielded cables for fitting into the cable gland.



CABLE GLAND SIZE	M16,M20S,M20,M25S,M25,M32S	M32,M40S	M40,M50S,M50, M63S
CABLE STRIP LENGTH "h"	20 mm	25 mm	30 mm

CABLE GLAND SIZE	M63,M75S	M75,M80S,M80,M90	M100
CABLE STRIP LENGTH "h"	35 mm	35 mm	35 mm

12 SIZE and TORQUE TABLE

Outer Thread Size (Male)	Outer Thread Size (Male)	Clamping Range Ø min-max mm	Clamping Range Inner Sheath Ø min-max mm	Armour Wire Ø min-max mm	Torque SW2 Nm	Torque SW3 Nm	Part Number
M16x1,5	NPT 3/8"	6,5-12,0	3,5-8,0	0,8 - 1,25	10	25	453..015..
		9,0 - 16,0	6,0 - 11,0	0,8 - 1,25	10	25	453..01..
M20x1,5	NPT 1/2"	6,5-12,0	3,5-8,0	0,8 - 1,25	10	25	453..1XS..
		9,0 - 16,0	6,0 - 11,0	0,8 - 1,25	10	25	453..1S..
		12,0 - 20,0	8,5 - 14,5	0,8 - 1,25	20	40	453..1..
M25x1,5	NPT 3/4"	12,0 - 20,0	8,5 - 14,5	0,8 - 1,25	20	40	453..25..
		16,0 - 26,0	12,0 - 20,0	1,25 - 1,6	25	45	453..2..
M32x1,5	NPT 1"	16,0 - 26,0	12,0 - 20,0	1,25 - 1,6	25	45	453..3S..
		20,0 - 33,0	17,0 - 26,0	1,6 - 2,0	30	55	453.3...
M40x1,5	NPT 1 1/4"	20,0 - 33,0	17,0 - 26,0	1,6 - 2,0	30	55	453..45..
		29,0 - 41,0	23,0 - 32,0	1,6 - 2,0	40	75	453..4..
M50x1,5	NPT 1 1/2"	29,0 - 41,0	23,0 - 32,0	1,6 - 2,0	40	75	453..5S..
		36,0 - 52,0	29,0 - 41,0	1,8 - 2,5	50	100	453..5..
M63x1,5	NPT 2"	36,0 - 52,0	29,0 - 41,0	1,8 - 2,5	50	100	453..6S..
		50,0 - 65,0	40,0 - 56,0	1,8 - 2,5	45	150	453..6..
M75x1,5	NPT 2 1/2"	50,0 - 65,0	40,0 - 56,0	1,8 - 2,5	45	150	453..7S..
		61,0 - 78,0	54,5 - 68,0	1,8 - 2,5	150	250	453..7..
M80x1,5	NPT 3"	61,0 - 78,0	54,5 - 68,0	1,8 - 2,5	150	250	453..80S..
		75,0 - 89,0	67,0 - 73,0	2,0 - 3,5	200	300	453..80..
M90x1,5	NPT 3 1/2"	75,0 - 89,0	67,0 - 77,0	2,0 - 3,5	250	350	453..8..
M100x1,5	NPT 4"	88,0 - 104,0	75,0 - 91,0	2,5 - 4,0	300	400	453..9..

Note: These are recommended torque values according to the laboratory tests.

13 SAFETY INSTRUCTION (IP PROTECTION)

Recomended Hole Diameters For Non Threaded enclosure applications in relation with the used thread types are shown below.

-For non-threaded enclosures it is recomended to use flat washer,between the gland body and enclosure.
-The recomended wall thickness is 1,5 mm for non threaded enclosures.
-In case of enclosure wall thickness is equal or lower than 1,5 mm, Bimed flat washer should be used. Oring can stay in the channel if it is necessary. During the assembly it is recommended to rotate the locknut. If the assembly needs to be done by rotating the gland, then oring should be preferred.

Metric Threads		G Threads (GAS UNI ISO 228/1)		PG Threads	
Thread	Hole Diameter (min. - max. mm)	Thread	Hole Diameter (min. - max. mm)	Thread	Hole Diameter (min. - max. mm)
M16x1.5	16,0-16,2	G 3/8"	16,6-16,8	PG 7	12,5-12,7
M20x1.5	20,0-20,2	G 1/2"	21,0-21,2	PG 9	15,2-15,4
M25x1.5	25,0-25,2	G 3/4"	26,4-26,6	PG 11	18,6-18,8
M32x1.5	32,0-32,3	G 1"	33,3-33,6	PG 13,5	20,4-20,6
M40x1.5	40,0-40,3	G 1 1/4"	41,9-42,2	PG 16	22,5-22,7
M50x1.5	50,0-50,3	G 1 1/2"	47,8-48,1	PG 21	28,3-28,5
M63x1.5	63,0-63,3	G 2"	59,6-59,9	PG 29	37,0-37,3
M75x1.5	75,0-75,3	G 2 1/2"	75,2-75,5	PG 36	47,0-47,3
M90x1.5	90,0-90,3	G 3"	87,9-88,2	PG 42	54,0-54,3
M100x1.5	100,0-100,3	G 4"	113,1-113,4	PG 48	59,3-59,6

14 SAFETY INSTRUCTION (IP PROTECTION)

Ingress Protection: In order to guarantee the specified IP66/68 rating, sealant agent shall be applied on at least two full threads before fitting the gland to the box. In any case you must pay attention to guarantee the metallic continuity. For treaded enclosures min. wall h thickness must be equal to the thickness of the relevant locknut.

IP Protection for Cylindrical Threaded Joints



Ex d Execution:
-Assemble the gland with o-ring or flat washer through the threaded hole.
-The wall has to be thick enough to engage at least 5 full threads.
-The minimum engaged thread depth must be at least 8 mm.

Ex e & Ex tb Execution:

-Assemble the gland with o-ring or flat washer through the threaded hole.
-You have to respect the minimum wall thickness of 1,5 mm.



IP Protection for Tapered Threaded Joints

Ex d Execution:
-The wall has to be thick enough to engage at least 5 full threads.

Ex e & Ex tb Execution:
-For Ex eb applications please refer to NPT ANSI B1.20.1 standart.

NPT"	Minimum Engaged Thread Depth mm	inch
3/8	7,016	0,277
1/2	9,070	0,357
3/4	9,070	0,357
1	11,045	0,434
1 1/4	11,045	0,434
1 1/2	11,045	0,434
2	11,045	0,434
2 1/2	15,875	0,625
3	15,875	0,625
4	15,875	0,625

15 SAFETY INSTRUCTION

-Qualified personnel in compliance with the national laws shall carry out the maintanence in accordance with EN/IEC 60079-17 and installation in accordance with EN/IEC 60079-14.
-Changes to products are not allowed.
-Only Bimed spare parts must be used.
-The maintenance operations must be carried out only after the engine has been cut off from mains or from the related electrical appliance.
-The following instructions must be strictly followed in order to get a correct installation.
-The national safety rules and accident prevention regulations, must be strictly respected.
-The clamping of the cables must be realised outside of enclosure by appropriate toque values to guarantee the mechanical characteristics.
-The cable glands can be used with Ex i circuits.
-The cable glands are only suitable for fixed installations. Cables shall be effectively clamped to prevent pulling or twisting.
-The cable gland installation shall be done according to safety manufacturer instructions to maintain degree of protection.
-Cable gland installation shall be done taking into account the temperature range declared for cable glands in relation to protection mode execution, versus the ambient temperature proper of installation.
-The certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed in the first page of the manuel.
-The certificate does not cover hazards coming from environmental conditions different from those clearly and precisely indicated in clause 1 of EN 60079-0.
-Service temperature of the gland is related to the material of the sealing ring but can additionally be limited by the material of the flat washer/ o-ring/accessories.