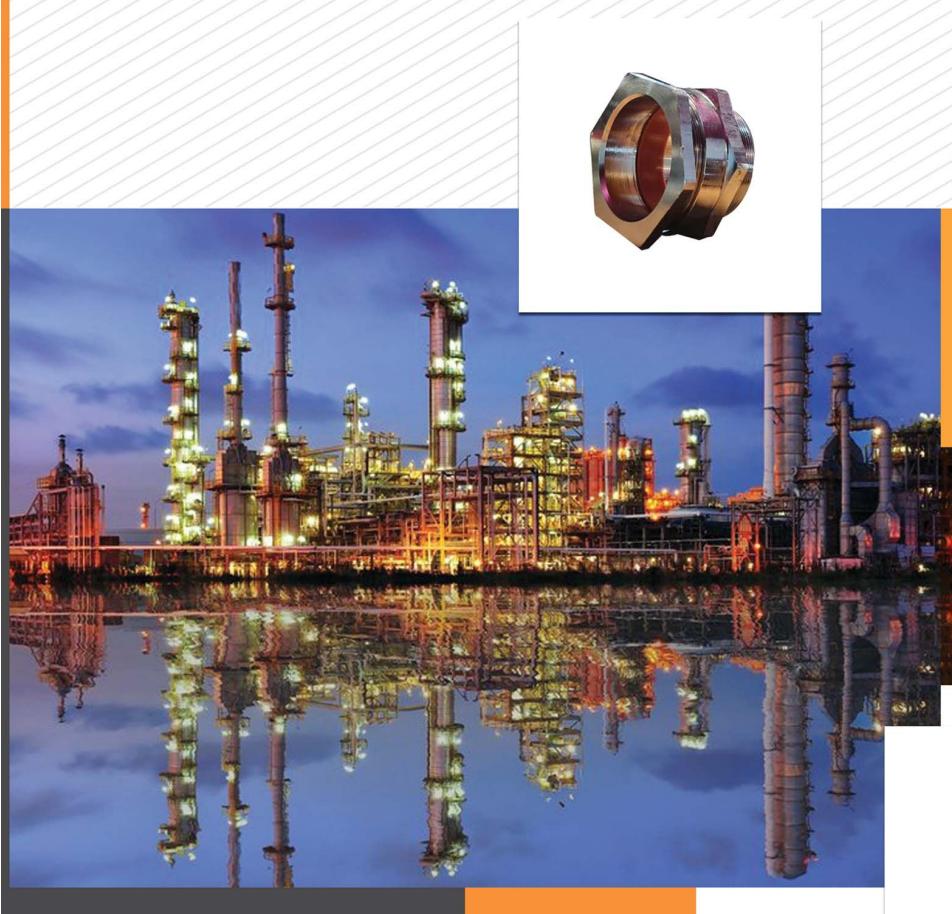


# SHAYAN

## INDUSTRY



shayanindustry



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## ● Explosion-proof equipment with ATEX certification

Shayan Company is a specialist designer, manufacturer, and supplier of explosion-proof panels, boxes, equipment and machinery in Iran with ATEX certificate, traceable to European CE. We consider it as our commitment to provide these products with the highest standard of quality, competitive price to our customers for their onshore or offshore oil and gas installations, in power generation, transportation infrastructure, or for surface or underground mining applications to protect the safety of people and infrastructure of their project in all around the world. Thanks to experts engineers and the experience, Shayan company is able to serve different types of customers optimally and design and manufacture explosion-proof products according to their specific needs.

### accessories certification information:

Classification of regions	Group I and II	
installation	Gases: 2G	Dust: 2D
type of protection	Ex d, Ex t	
Gas group / particles	Gas group: I , IIB+H2	Particle group: IIIC
Ambient Temperature	T6, T5, T4	
Maximum surface temperature	T85 c, T100 c, T135 c	
Level of Protection	Gas environments : Gb	Dust environments : Db
Degree of protection	IP67	
standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014	

### Panels and junction boxes



Maximum Power Dissipation (MPD)/W inside enclosures of EJB-...R series at Ta= +60 C					
Type and Dimensions of EJB-...R Series (mm), Tolerance: ±10					
Ref.Code	Ø	D1	D2	D3	MDP(W)
EJB-01R	140	80	100	120	20
EJB-02R	240	190	200	210	40
EJB-03R	265	190	200	210	44
EJB-04R	280	190	200	210	47
EJB-05R	320	190	200	210	53
EJB-06R	340	190	200	210	56
EJB-07R	370	190	200	210	61
EJB-08R	400	190	200	210	67
EJB-09R	420	190	200	210	70
EJB-10R	450	190	200	210	75

Maximum Power Dissipation (MPD)/W inside enclosures of EJB-...C series at Ta= +60 C				
Type and Dimensions of EJB-...C Series (mm), Tolerance: ±10				
Ref.Code	W	H	D	(MPD)/W
EJB-01C	100	100	80	8
EJB-02C	150	150	100	15
EJB-03C	340	200	175	35
EJB-04C	420	320	230	60
EJB-05C	470	370	240	65
EJB-06C	570	425	245	105
EJB-07C	650	450	280	150
EJB-08C	850	650	400	500
EJB-09C	1000	700	400	600

Maximum Power Dissipation (MPD)/W inside enclosures of EJB-...S series at Ta= +60 C							
Type and Dimensions of EJB-...S Series (mm), Tolerance: ±10							
Ref.Code	W	H	D1	D2	D3		
EJB-01S	300	200	200	250	300	35.5	40.5
EJB-02S	400	300	200	250	300	56.9	64.5
EJB-03S	450	300	150	200	250	54.1	62.3
EJB-04S	450	350	150	200	250	60.7	69.5
EJB-05S	500	300	200	250	300	67.8	76.6
EJB-06S	600	300	200	250	300	78.8	88.6
EJB-07S	600	400	200	250	300	96.3	107.2
EJB-08S	700	500	250	300	400	142.2	155.3
EJB-09S	800	600	250	300	400	181.6	196.9
EJB-10S	1000	500	300	400	500	207.8	240.6
EJB-11S	1000	600	300	400	500	236.3	271.3
EJB-12S	1000	700	300	400	500	264.7	301.9
EJB-13S	1200	700	400	500	600	350.0	391.6
EJB-14S	1200	800	400	500	600	385.0	428.8
EJB-15S	1200	900	400	500	600	420.0	465.9
EJB-16S	1400	700	400	500	600	398.1	444.1
EJB-17S	1400	800	400	500	600	437.5	485.6
EJB-18S	1400	900	400	500	600	476.9	527.2
EJB-19S	1500	700	600	700	800	518.4	566.6
EJB-20S	1500	800	600	700	800	564.4	614.7
EJB-21S	1500	900	600	700	800	610.3	662.8
EJB-22S	1800	700	600	700	800	603.8	658.4
EJB-23S	1800	800	600	700	800	656.3	713.1
EJB-24S	1800	900	600	700	800	708.8	767.8

## ● Accessories

All the explosion-proof accessories are produced and supplied according to the customer's requirements, from the best raw materials, the most up-to-date manufacturing methods and according to the latest global standards. M-0 series control, monitoring and signaling equipment as external accessories can be installed on "Ex d" enclosures. This equipment can be used to switch on or off electrical or mechanical devices installed inside "Ex d" enclosures. Signaling equipment has lights that show the status of their operation. Control and signaling equipment components are made of stainless steel or brass with chrome and nickel coating to provide the best performance in any environmental conditions. On the other hand, the levers are made of steel and the plastic parts on the push buttons are designed and made to last even when they are used in a very corrosive environment. M-0 series control and signaling equipment has IP67 degree of protection.



### Mechanical specifications:

outer body	Steel/brass
Inner cover	Stainless steel
internal pin	Stainless steel
O-ring	NBR (Resistant to acid and hydrocarbon)
Push button	Teflon / colored polycarbonate
Signal lights	Transparent colored polycarbonate
lever	Stainless steel / coated iron / aluminum
cover	Chrome / Nickel / Epoxy
installation method	Installation on a special flange using screws on the door and body holes

## Gland

The group of glands which has been produced by Shayan Company are in different sizes and can be used for all types of armored or non-armored cables and mineral and non-mineral cables.



## Explosion proof glands for non-armored cables

(Explosion Proof Cable Glands series **NAGSH** for non-armored cables)

Explosion Proof Cable Glands series NAGSH are suitable for connecting non-armored cable to the input or output of all types of panels, junction boxes, lights, detectors and other explosion proof equipment. These glands have a watertight gasket ring that is completely attached to the cable to provide the proper sealing up to IP67 in addition to maintaining the "Exd" degree of protection. NAGSH series glands are compatible with a wide range of cables in terms of dimensions and outer diameter (OD) of the cable and are manufactured and supplied with the latest edition of design standards and requirements.

Explosion Proof Cable Glands series NAGSH for non-armored cables	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
type of protection	Exd, Ext
Level of Protection	IP67
temperature	-20 < T < +60
Applicable environments	Marine/land/industrial/coal mines
Gland material	Brass/steel/aluminum
Gasket material	Silicon
cover	Nickel chrome

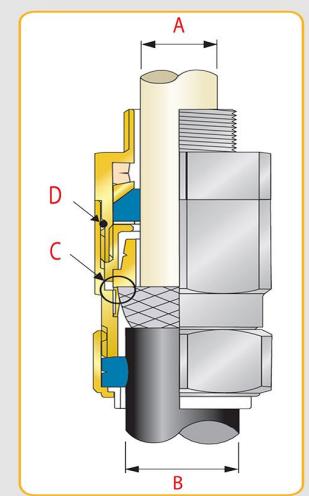
Cable gland code	Cable gland size	Available entry threads "C" (Alternate Metric thread lengths available)				Overall Cable Diameter "A"		Across Flat "D"	Across Corners "D"	Cable glands weight
		Metric	Thread Length (Metric "E")	NPT	Thread Length (NPT "E")	Min	Max			
NAGSH-16	16	M16	15.0	-	-	3.2	8.7	24.0	26.4	0.06
NAGSH-20S	20 S	M20	15.0	½ "	19.9	6.1	11.7	24.0	26.4	0.06
NAGSH-20	20	M20	15.0	½ "	19.9	6.5	14.0	27.0	29.7	0.07
NAGSH-25	25	M25	15.0	¾"	20.2	11.1	20.0	36.0	39.6	0.13
NAGSH-32	32	M32	15.0	1"	25.0	17.0	26.3	41.0	45.1	0.15
NAGSH-40	40	M40	15.0	1 ¼"	25.6	23.5	32.2	50.0	55.0	0.20
NAGSH-50S	50 S	M50	15.0	1 ½"	26.1	31.0	38.2	55.0	60.5	0.26
NAGSH-50	50	M50	15.0	2"	26.9	35.6	44.0	60.0	66.0	0.27
NAGSH-63S	63 S	M63	15.0	2"	26.9	41.5	49.9	70.5	77.6	0.43
NAGSH-63	63	M63	15.0	2 ½"	39.9	47.2	55.9	75.0	82.5	0.40
NAGSH-75S	75	M75	15.0	2 ½"	39.9	54.0	61.9	84.0	92.4	0.52
NAGSH-75	75	M75	15.0	3"	41.5	61.1	67.9	84.0	92.4	0.50
NAGSH-90	90	M90	24.0	3 ½"	42.8	66.6	79.9	108.0	118.8	1.60
NAGSH-100	100	M100	24.0	3 ½"	42.8	76.0	91.0	123.0	135.3	1.78
NAGSH-115	115	M115	24.0	4"	44.0	86.0	97.9	133.4	146.7	2.67
NAGSH-130	130	M130	24.0	5"	46.8	97.0	114.9	152.4	167.6	3.80

## Explosion Proof Cable Glands series AGSH for armored cables

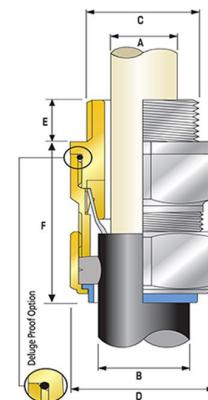
**AGSH** series explosion proof glands are suitable for connecting armored cable to the input or output of all types of panels, junction boxes, lights, detectors and other explosion proof equipment. The use of armored cables, when the gland cable has a metal structure, facilitates the presence of ground throughout the route. Gland armored cables are tested to protect the minimum short circuit fault current, related to the cable armor or peak fault of the electrical system, so that they have enough tolerance against these events.

### When using armored cable, keep the following in mind:

- 1 Type and materials used in armored cable
- 2 Armored cable resistance against short circuit current
- 3 Outer diameter of armored cable
- 4 The outer diameter of the XLPE sheath of the armored cable that is placed inside the explosion-proof gland. (A)
- 5 The outer diameter of the lead coating of the armor
- 6 Cable outer diameter (B)
- 7 Size and type of armor (C)



explosion proof glands of armored cables (AGSH Series)	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
type of protection	Exd, Ext
Level of Protection	IP67
temperature	-20 < T < +60
Applicable environments	Marine/land/industrial/coal mines
Gland material	Brass/steel/aluminum
Gasket material	Silicon
cover	Nickel chrome

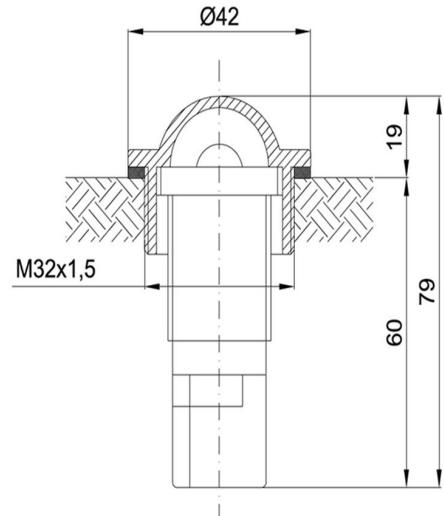


Cable gland code	Cable gland size	Available entry threads "C" (alternate Metric thread lengths available)				Cable Bedding Diameter "A"	Overall Cable Diameter "B"	Armour Range		Across Flat "D"	Across Corners "D"	Protrusion Length "F"	Cable glands weight	
		Metric	Thread Length (Metric) "E"	NPT	Thread Length (NPT) "E"			Stepped Cone	Max	min	Max	Max	Kg	
AGSH-20S	20S	M20	15.0	1/2"	19.9	11.7	9.5	15.9	0.3	1.0	30.5	33.6	62.0	0.24
AGSH-20	20	M20	15.0	1/2"	19.9	14.0	12.5	20.9	0.4	1.0	30.5	33.6	63.0	0.23
AGSH-25S	25	M25	15.0	3/4"	20.2	20.0	14.0	22.0	0.4	1.2	37.5	41.3	69.5	0.35
AGSH-25	25	M25	15.0	3/4"	20.2	20.0	18.2	26.2	0.4	1.2	37.5	41.3	69.5	0.35
AGSH-32	32	M32	15.0	1"	25.0	26.0	23.7	33.9	0.4	1.2	46.0	50.6	75.0	0.55
AGSH-40	40	M40	15.0	1 1/4"	25.6	32.2	27.9	40.4	0.4	1.6	55.0	60.6	75.0	0.75
AGSH-50S	50S	M50	15.0	1 1/2"	26.1	38.2	35.2	46.7	0.4	1.6	60.0	66.0	77.0	0.86
AGSH-50	50	M50	15.0	2"	26.9	44.1	40.4	53.0	0.6	1.6	70.1	77.1	77.0	1.13
AGSH-63S	63S	M63	15.0	2"	26.9	50.0	45.6	59.4	0.6	1.6	75.0	82.5	80.0	1.13
AGSH-63	63	M63	15.0	2 1/2"	39.9	56.0	54.6	65.8	0.6	1.6	80.0	88.0	80.0	1.34
AGSH-75S	75	M75	15.0	2 1/2"	39.9	62.0	59.0	72.0	0.6	1.6	90.0	99.0	87.0	2.02
AGSH-75	75	M75	15.0	3"	41.5	64.2	66.7	78.4	0.6	1.6	100.0	110.0	88.0	2.48
AGSH-90	90	M90	24.0	3 1/2"	42.8	78.6	76.2	90.3	0.8	1.6	115.0	126.5	102.0	3.52
AGSH-100	100	M100	24.0	3 1/2"	42.8	91.0	86.1	101.4	0.8	1.6	127.0	139.7	114.0	4.58
AGSH-115	115	M115	24.0	4"	44.0	98.0	101.5	110.2	0.8	1.6	133.4	146.7	114.0	6.50
AGSH-130	130	M130	24.0	5"	46.8	115.0	110.2	123.2	0.8	1.6	152.4	167.6	114.0	8.50



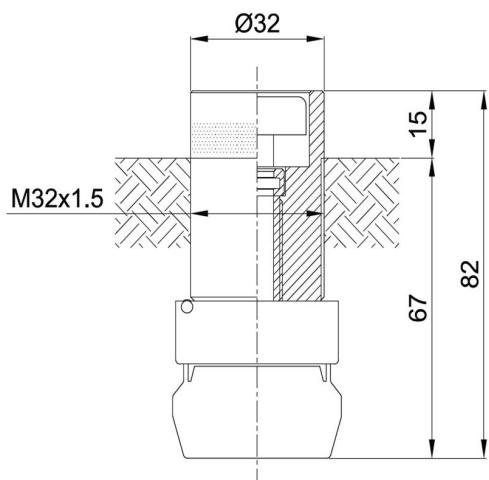
## Signal lights M-01-S231/X series:

Signal lights	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
tvoltage (V)	12/24/110/220 V
(A current)	0.5 A
color	5 colors
Description	code
GREEN (G)	M-01-S231/G
RED (R)	M-01-S231/R
YELLOW (Y)	M-01-S231/Y
BLUE (B)	M-01-S231/B
WHITE (W)	M-01-S231/W



## Push button M-02-P232/X series

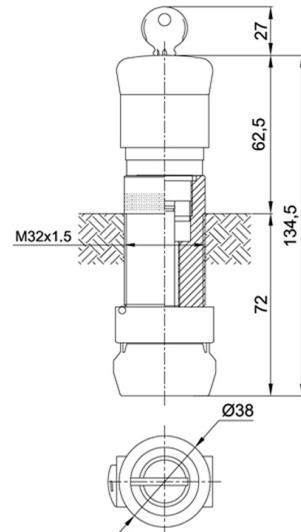
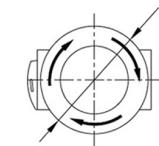
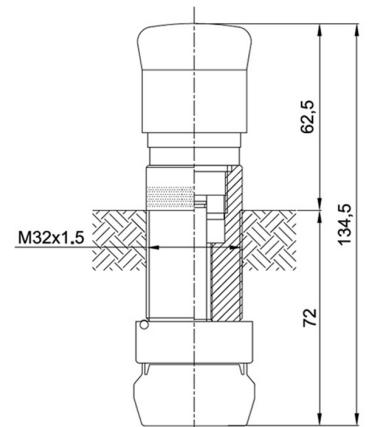
(Push button)	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
tvoltage (V)	Up to 600 V
(A current)	Up to 10 A
contact	2 separated ones
Contact type	Combination of NO and NC
Shaft length	According to customer requirements
color	6 colors
Description	code
GREEN (G)	M-01-P232/G
RED (R)	M-01-P232/R
YELLOW (Y)	M-01-P232/Y
BLUE (B)	M-01-P232/B
WHITE (W)	M-01-P232/W
BLACK (BL)	M-01-P232/BL



## Emergency stop mushroom-head / Key-to-release

M-03-E233/X, M-04-E233/K Series

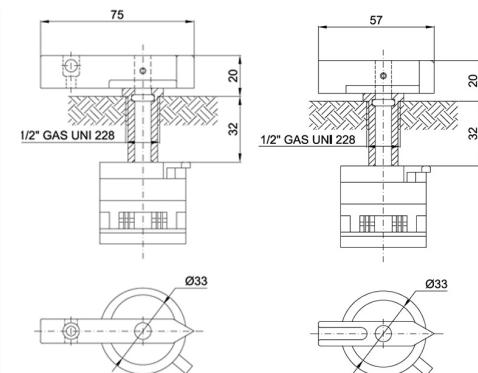
Emergency stop mushroom-head	
Standards	EN 60079-0:2018, EN 60079-1:2014 EN 60079-31:2014
tvoltage (V)	Up to 600 V
(A current)	Up to 10 A
contact	2 separated ones
Contact type	Combination of NO and NC
Color	Red
description	code
Emergency stop	M-03-E233/F



Key-to-release emergency stop	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
tvoltage (V)	Up to 600 V
(A current)	Up to 10 A
contact	2 separated ones
Contact type	Combination of NO and NC
Color	Red
description	code
Emergency stop	M-04-E233/F

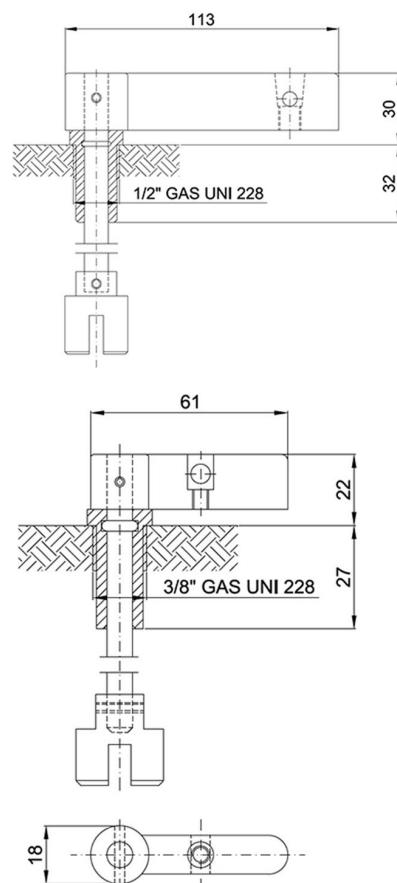
## Rotary switch M-05-E234/R,S series

(Rotary switch)	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
tvoltage (V)	Up to 600 V
(A current)	Up to 10 A
contact	2 separated ones
Contact type	Combination of NO and NC
Color	Gray / according to the requirements and orders of the customer
description	code
Rotary switch	M-05-E234/R M-05-E234/S



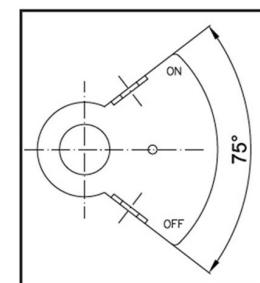
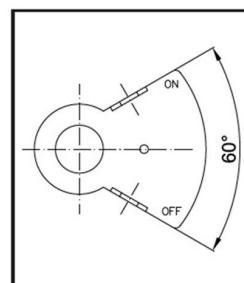
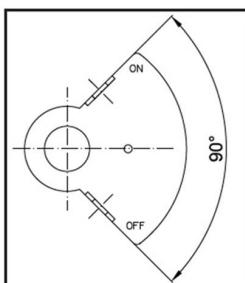
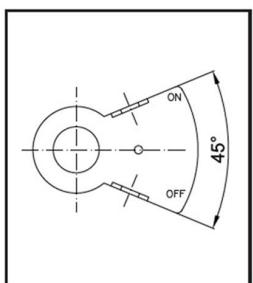
## Command Actuator M-06-E235,236/C series

Command Actuator	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
voltage (V)	Up to 1000V
(A current)	Up to 250A
color	Gray/ according to the requirements and orders of the customer
Shaft length	According to the requirements and orders of the customer
Diameter and groove	According to the requirements and orders of the customer
IP	67
Description	Code
Handle	M-06-E235/C M-06-E236/C



The ability to limit the rotation of command actuator on the doors of explosion-proof boxes is created by the various parts in the table below.

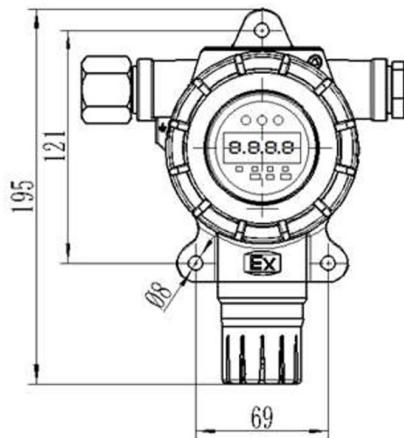
Material	Code	Rotation angle of command actuator
Steel / aluminum / iron	45	M-06/01
	60	M-06/02
	75	M-06/03
	90	M-06/04



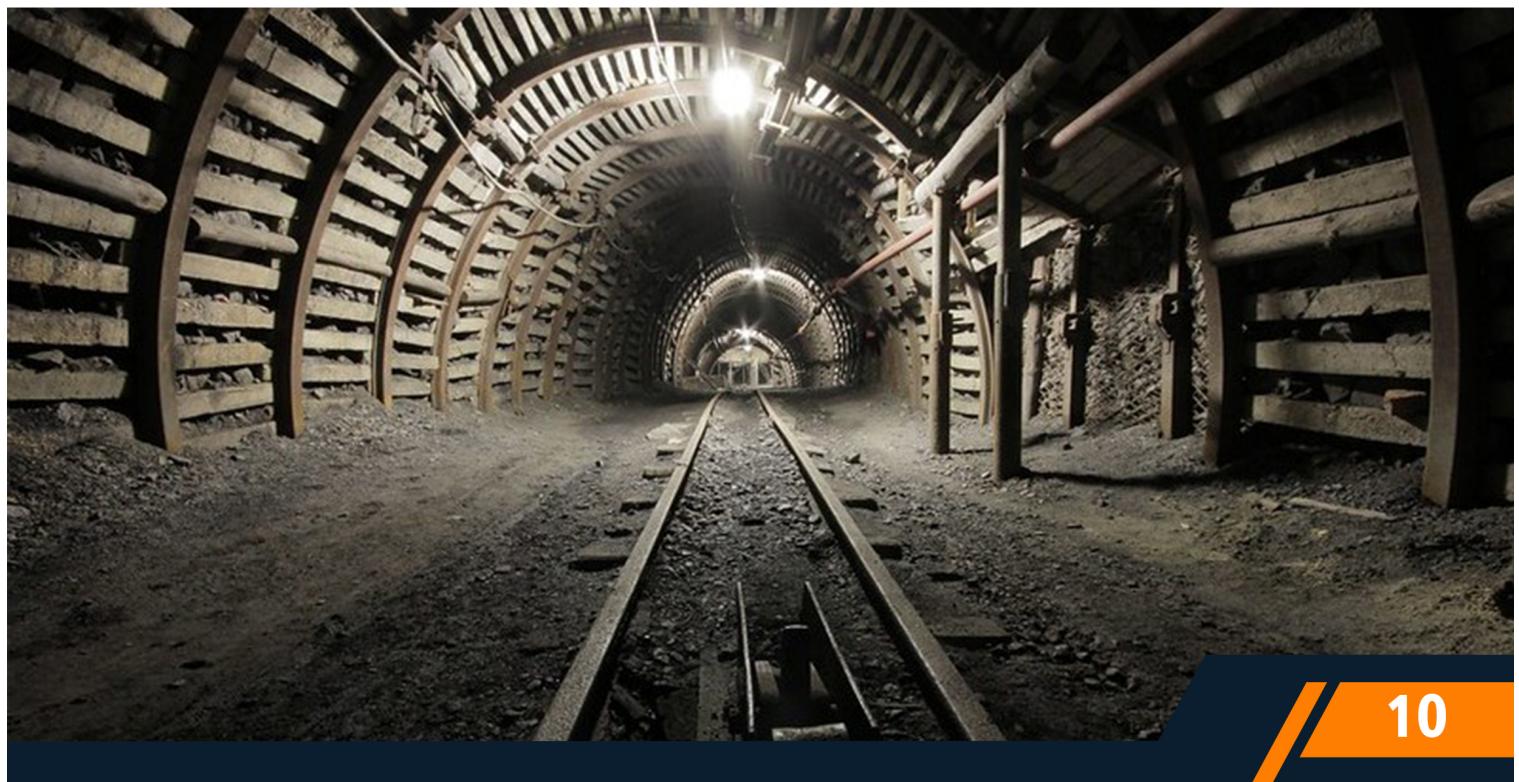
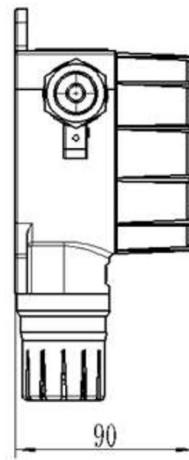
## Sensor & Detector M-07-E237/01 to M-07-E237/22 series

M-07-E237/01 او M-07-E237/22

Sensor & Detector	
Standards	EN 60079-0:2018, EN 60079-1:2014, EN 60079-31:2014
Supply voltage (V)	24 V
(A current)	10 mA
Color	Gray, blue, orange and according to customer requirements and orders
IP	67
Description	Code
Detector body	M-07-E237
Sensors	M-07-E237/01 to M-07-E237/22



NO	Gas	Range	Option Range	Accuracy	Sensor Type	Response
1	Combustible	0-100 %LEL	100 %LEL	±3%	Catalytic	<8
2	Combustible	0-100 %LEL	100 %LEL	±3%	IR	<20
3	VOC	0-1000 ppm	0-2000 ppm	±3%	PID	<100
4	O2	0-30 %VOL	0-25 %VOL	±0.1%	Electro-Chemical	<15
5	CO	0-1000 ppm	0-2000/3000/5000 ppm	±3%	Electro-Chemical	<30
6	SO2	0-20 ppm	0-50/100/200/2000 ppm	±3%	Electro-Chemical	<45
7	NO2	0-20 ppm	0-50/100 ppm	±3%	Electro-Chemical	<30
8	Cl2	0-20 ppm	0-50/100 ppm	±3%	Electro-Chemical	<60
9	H2S	0-100 ppm	0-200/500/1000 ppm	±3%	Electro-Chemical	<35
10	NH3	0-100 ppm	0-200/300/500/1000 ppm	±3%	Electro-Chemical	<60
11	H2	0-1000 ppm	0-200 ppm	±3%	Electro-Chemical	<70
12	O3	0-100 ppm	0-500 ppm	±3%	Electro-Chemical	<60
13	NO	0-250 ppm	0-500 ppm	±3%	Electro-Chemical	<30
14	HCl	0-20 ppm	0-50/100 ppm	±3%	Electro-Chemical	<70
15	HCN	0-100 ppm	100 ppm	±3%	Electro-Chemical	<20
16	HF	0-20 ppm	0-50/100 ppm	±3%	Electro-Chemical	<90
17	ClO2	0-20 ppm	0-50/100 ppm	±3%	Electro-Chemical	<120
18	COCl2	0-1ppm		±3%	Electro-Chemical	<120
19	CH2O	0-100ppm	0-200/1000ppm	±3%	Electro-Chemical	<30
20	ETO	0-100ppm	0-200ppm	±3%	Electro-Chemical	<140
21	CO2	0-5000ppm	0-100% VOL	±3%	IR	<20
22	N2O	0-1000ppm		±3%	IR	<10



## Gas monitoring system:

**A Power LED:** The green LED lights up when the power supply is normal.

**B Fault LED:** A flashing yellow LED indicates that the detector is disabled.

**C Alarm LED:** The red LED will be in high and low alarm status flashing.

The flashing frequency in high alarm mode is higher than the flashing frequency in low alarm mode.

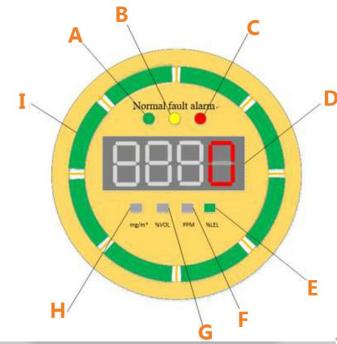
**D Digital display:** Digital display: The gas concentration is shown with a 4-digit display.

**E LEL%**

**F ppm**

**G VOL%**

**H mg/m<sup>3</sup>**



**I Status Light:** Status Light: The green light flashes in the normal state, the red light flashes in the warning state, and the yellow light flashes in the error state. Due to the existence of an analog output of 4~20 mA and two digital outputs, it is possible to transmit information by wired and wireless methods based on the mine gas monitoring plan from the detector to the control room. Shayan Company is able to design and implement a gas monitoring system using its Iranian detectors.

## LED Projector & Light M-08-E238/01 Series



Shayan company, by using experienced engineering staff, high quality raw materials and modern production technology, is able to design and implement lighting systems with different types and sizes of projectors and lights (with ATEX certificate) for underground mines, especially coal mines.

### Specifications of projectors:

Ref. Code	Ø	D1	D2	D3	MPD(W)	Watt (W)
M-08-E238/01	140	80	100	120	20	10
M-08-E238/02	240	190	200	210	40	15
M-08-E238/03	265	190	200	210	44	20
M-08-E238/04	280	190	200	210	47	50
M-08-E238/05	320	190	200	210	53	100
M-08-E238/06	340	190	200	210	56	100
M-08-E238/07	370	190	200	210	61	100
M-08-E238/08	400	190	200	210	67	150
M-08-E238/09	420	190	200	210	70	150
M-08-E238/10	450	190	200	210	75	200

## Different sizes of projectors:

To choose a suitable LED lighting, you must follow the following steps:

- Analysis of the electrical characteristics and the environment that is supposed to get light and the type of installation required in terms of weight and size
- Determination of required lighting values
- Determination of electrical and photometric characteristics
- Simulating the lighting system and calculating the amount of light needed
- Choosing the type of lighting



## Lighting engineering measurement units

**Luminous flux:** the amount of light emitted from the light source per unit of time. It is measured in lumens and denoted by  $\Phi$ .

**Light intensity:** the amount of luminous flux emitted in a certain direction and in the unit of angle, which is measured in steradians. The unit of measurement is candles (Cd) and is denoted by  $I$ . Light intensity shows how light penetrates in a particular direction.

**Brightness:** the amount of light flux per surface unit that is measured in lux.

**Luminous efficiency:** This is the relationship between the flux emitted from the light source and the electric power. Consumption expressed in watts is represented by  $\Phi/P$  and measured in Lm/W.

**Color rendering index:** A measure of how natural the colors lit by a source appear.

High CRI (Color Rendering Index) values mean high color matching.

The UNI 10380 standard defines a set of color rendering indices.

**Light efficiency:** This is the relationship between the amount of useful flux and the total amount of flux emitted by the light source, which is indicated by  $\eta$  and is measured as a percentage.

**Color temperature:** This is the brightness parameter that determines the amount of light and is measured in degrees Kelvin (K).



Shayan Company is a specialist designer, manufacturer, and supplier of explosion-proof panels, boxes, equipment and machinery in Iran with ATEX certificate, traceable to European CE. We consider it as our commitment to provide these products with the highest standard of quality, competitive price to our customers for their onshore or offshore oil and gas installations, in power generation, transportation infrastructure, or for surface or underground mining applications to protect the safety of people and infrastructure of their project in all around the world. Thanks to experts engineers and the experience, Shayan company is able to serve different types of customers optimally and design and manufacture explosion-proof products according to their specific needs.



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