

BC 4.3



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Gas Tight Dampers



GTD-GB40-B-E

Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.



Table Of Contents

S. No	Description	Page No
1	Gas Tight Damper with Electric Drive	1
2	Electric Drive - Details	2-3
3	Gas Tight Damper with Pneumatic Drive	4
4	Pneumatic Drive - Details	5-7
5	Ordering Data	8

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Gas Tight Damper - Electric

Type : Gas Tight Damper

Model : For Electric Drive : GTD-GB-40-B-E

Blade : Aerofoil Type

Construction : Galvanized Steel (GI)

Stainless Steel (SS)

Gas tight dampers are designed such that they can isolate sections of a ventilation system with a very high level of sealing (gas tight). This can be required for safety reasons in certain operational conditions.

GTD-GB-40-B-E shut off dampers are designed so that after closure, even with failure of power supply to the actuator, the damper maintains the sealed closure in accordance with KTA 3601 (Guidelines for Nuclear Plant) and A0 A60 (type approved) for Marine, Oil & Gas applications. The compact design and robust actuator mechanisms of these shut-off dampers enable them to be installed in any orientation.

Damper Ratings

Max Leakage Rating : As per Standards KTA 3601 (0.01 m³/h x m² at 2000 Pa)

Operational Rating : Actual ratings are size dependent

Air Velocity: 3000 fpm (15 m/sec) 2000 Pa

Pressure : 8" water gauge (2KPa).

Max . Holding Pressure: 20" W.g (5Kpa)
(in closed condition)

Explosion Proof Ratings

Installation Area : Zone 1,2,21,22

Ambient temperature : -40°...+40°C (at T6)

-40°...+50°C (at T5)

Certification for Gases : II 2(1) G Ex d [ia] IIC T6

II 3 (1) G Ex nC [ia] IIC T6

II 3 (1) G Ex nC [ia] IIC T6

Certification for dust : II 2(1) G Ex d [ia] IIC T6
II 3 D Ex tD A22 IP66T80°C

Standard Construction

Frame

14 gauge (2 mm) thick galvanized steel sheet with 2" (50 mm) external flanges.

Blade

Double Skin blades (Aerofoil) of 14 gauge (2 mm) thick roll formed galvanized steel.

Blade Seals

300°C High temp, resistant Silicon rubber blade seals.

Jamb Seals

Stainless Steel.

Bearings

High temperature resistant concealed ball bearings.

Axle

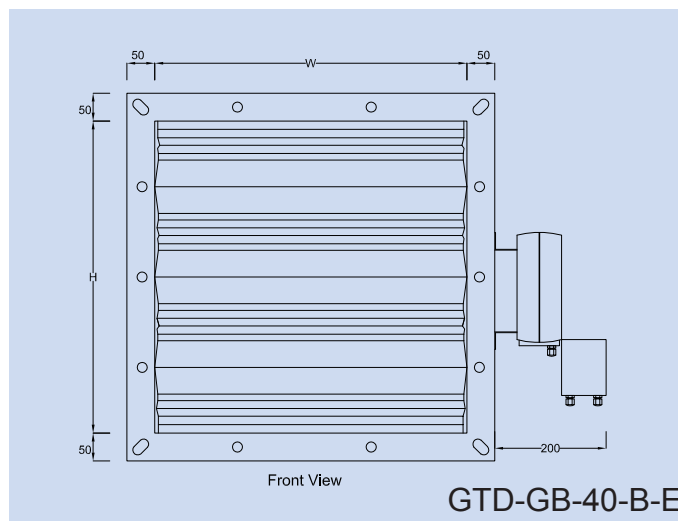
¾" (19 mm) Diameter axle.

Drive : Operation by electric actuator 24V / 230 V

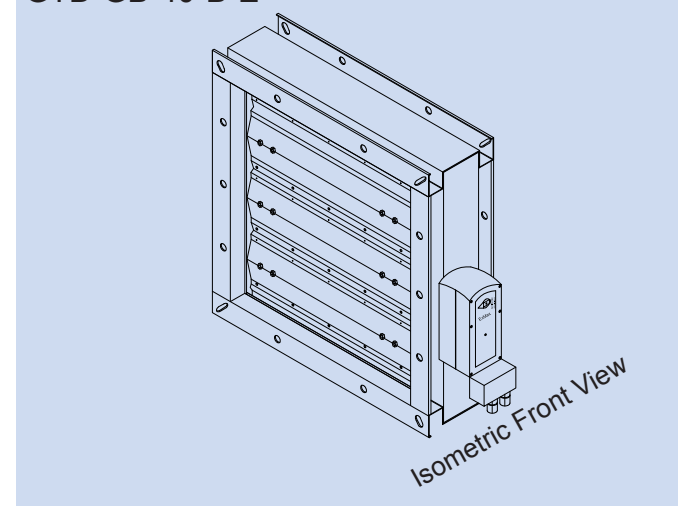
Model : Exmax / RedMax

Note : * Standard Construction.

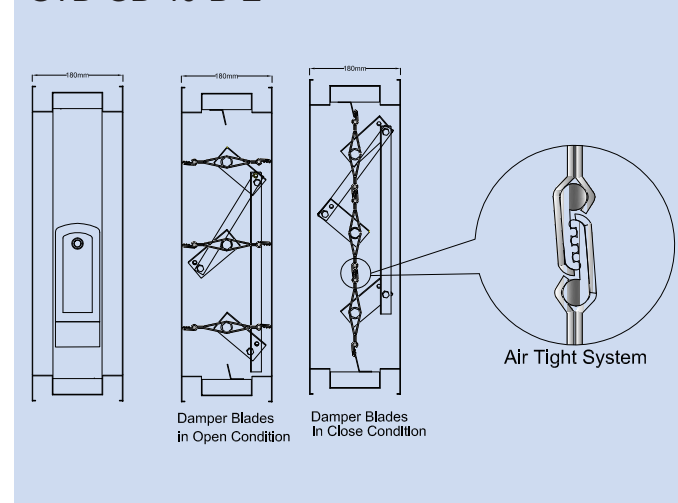
B-40 Series



GTD-GB-40-B-E



GTD-GB-40-B-E



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Gas Tight Damper - Electric

B-40 Series

Details Of Explosion Proof Actuators - ExMax Quarter turn Actuator For Zone -1,2,21, 22

Technical data	ExMax size S	ExMax size M
Torque*	5-30 Nm	30-150 Nm
Power supply, self adaptable	24-240 V AC / DC	24-240 V AC / DC
Frequency	50-60 HZ	50-60 HZ
Angle of rotation	95°	95°
Motor running time adjustable	3,15,30,60,120 sec/90°	40,60,90,120,150 sec/90°
Spring return*	1, 3, 10 sec/90° selectable	3, 20 sec/90° selectable
Control mode*	On-off, 3-pos, 0-10 V DC, 4-20 mA	On-off, 3-pos, 0-10 V DC, 4-20 mA
Feedback*	0-10 V DC, 4-20 mA	0-10 V DC, 4-20 mA
Squared shaft connection	12 x 12 mm Squared shaft	12 x 12 mm Squared shaft
Housing protection	IP66	IP66
Ambient temperature	-40°...+40°C (at T6) / -40°...+50°C (at T5)	-40°...+40°C (at T6) / -40°...+50°C (at T5)
Power supply	Cable ca. 1 m	Cable ca. 1 m
Weight	Alu ca. 3,5 kg, VA ca. 7 kg	Alu ca. 9,5 kg
Explosion proof for all	gases, mists, vapours, dust	gases, mists, vapours, dust
Installation area	zone 1, 2, 21, 22	zone 1, 2, 21, 22
Certification for gases	II 2(1) G Ex d [ia] IIC T6	II 2(1) G Ex d [ia] IIC T6
Certification for dust	II 2(1) G Ex d [ia] IIC T6	II 2(1) G Ex d [ia] IIC T6
*dependent by Type		

Accessories For ExMax

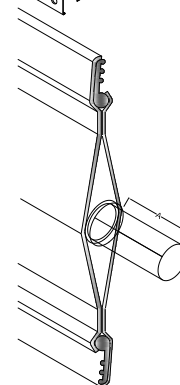
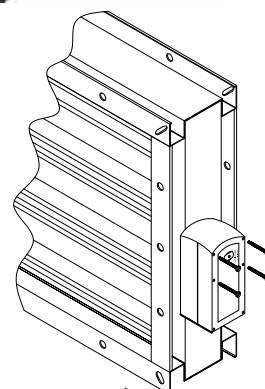
Type	Technical data
ExBox-Y/S	Ex-e terminal box connectable to ExMax-..., actuators with 2 cable, for modulating operation or 3-pos + integr, switches (HS)
MKK-S	Mounting bracket for ...Sox-terminal boxes for direct coupling to ...Max... actuators size „S“
KB-S	Mounting clamp for round damper shaft Ø10 to 20 mm and squared shafts 10 to 16 mm, incl. bracket, connectable to all ExMax-... size „S“

Details Of Explosion Proof Actuators - RedMax Quarter turn Actuator For Zone -1,2

Technical data	RedMax size S	RedMax size M
Torque*	5-30 Nm	30-150 Nm
Power supply, self adaptable	24-240 V AC / DC	24-240 V AC / DC
Frequency	50-60 HZ	50-60 HZ
Angle of rotation	95°	95°
Motor running time adjustable	3,15,30,60,120 sec/90°	40,60,90,120,150 sec/90°
Spring return*	1, 3, 10 sec/90° selectable	3, 20 sec/90° selectable
Control mode*	On-off, 3-pos, 0-10 V DC, 4-20 mA	On-off, 3-pos, 0-10 V DC, 4-20 mA
Feedback*	0-10 V DC, 4-20 mA	0-10 V DC, 4-20 mA
Squared shaft connection	12 x 12 mm Squared shaft	12 x 12 mm Squared shaft
Housing protection	IP66	IP66
Ambient temperature	-40°...+40°C (at T6) / -40°...+50°C (at T5)	-40°...+40°C (at T6) / -40°...+50°C (at T5)
Power supply	Cable ca. 1 m	Cable ca. 1 m
Weight	Alu ca. 3,5 kg, VA ca. 7 kg	Alu ca. 9,5 kg
Explosion proof for all	gases, mists, vapours, dust	gases, mists, vapours, dust
Installation area	zone 2, 22	zone 2, 22
Certification for gases	II 3(1) G Ex nC [ia] IIC T6, II 3 G Ex nC II T6	II 3(1) G Ex nC [ia] IIC T6, II 3 G Ex nC II T6
Certification for dust	II 3 D Ex tD A22 IP66 T80 °C	II 3 D Ex tD A22 IP66 T80 °C
*dependent by Type		

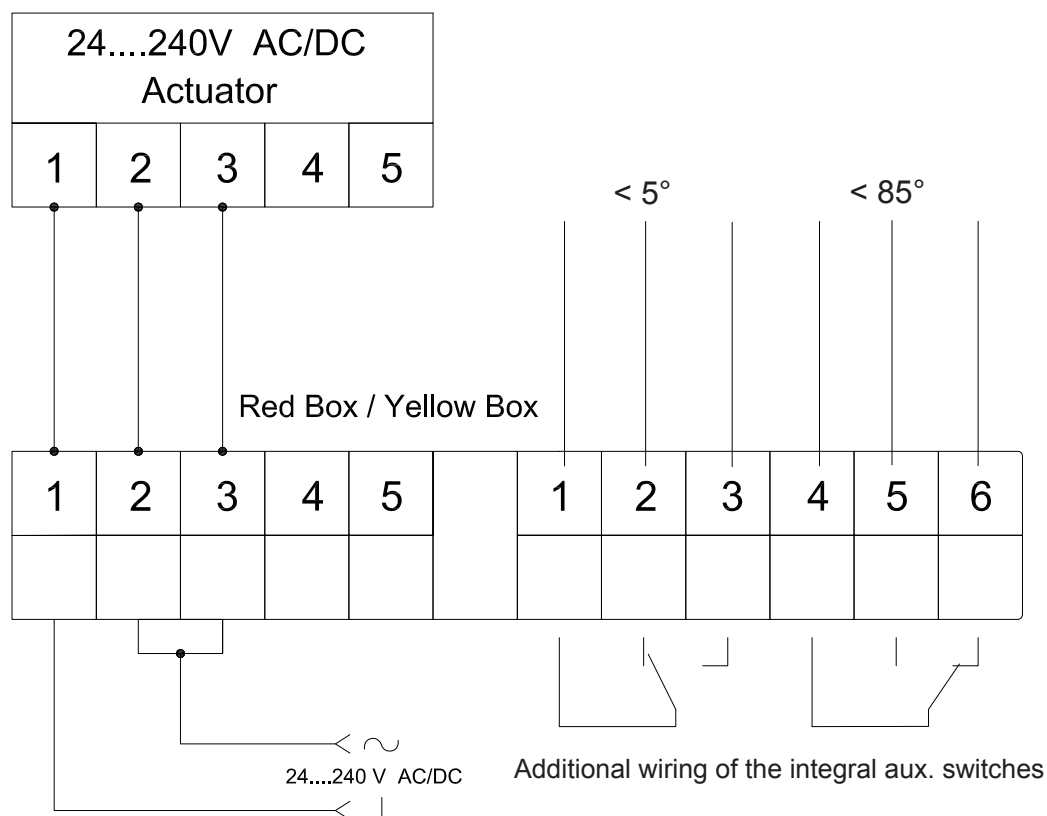
Accessories For RedMax

Type	Technical data
RedBox-Y/S	Ex-e terminal box connectable to ExMax-..., actuators with 2 cable, for modulating operation or 3-pos + integr, switches (HS)
MKK-S	Mounting bracket for ...Sox-terminal boxes for direct coupling to ...Max... actuators size „S“
KB-S	Mounting clamp for round damper shaft Ø10 to 20 mm and squared shafts 10 to 16 mm, incl. bracket, connectable to all ExMax-... size „S“



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Wiring Diagrams Ex: Model :GTD-B-40D E (24 ...230V, AC/DC)



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Gas Tight Damper - Pneumatic

Type : Gas Tight Damper

Model : For Pneumatic Drive : GTD-GB-40-B-Pn

Blade : Aerofoil Type

Construction : Galvanized Steel (GI)
Stainless Steel (SS)

Gas tight dampers are designed such that they can isolate sections of a ventilation system with a very high level of sealing (gas tight). This can be required for safety reasons in certain operational conditions.

GTD-GB-40-B-Pn shut of dampers are designed so that after closure, even with failure of power supply to the actuator, the damper maintains the sealed closure in accordance with KTA 3601 (Guidelines for Nuclear Plant) and A0 A60 (type approved) for Marine, Oil & Gas applications. The compact design and robust actuator mechanisms of these shut-off dampers enable them to be installed in any orientation.

Damper Ratings

Max Leakage Rating : As per Standards KTA 3601 (0.01 m³/h x m² at 2000 Pa)

Operational Rating : Actual ratings are size dependent

Air Velocity: 3000 fpm (15 mt/sec)

Pressure : 8" water gauge (2KPa).

Max . Holding Pressure: 20" W.g (5Kpa)
(in closed condition)

Temperature Ratings

Operational Temp : 250°C/482°F for a minimum of 2Hr.

Normal operation : -20°C to +120°C

No Fire : -4°F to + 248°F

Tunnel Application : -20°C to +250°C

Under Fire : for 2 hours minimum

: -4°F to / +482°F
for 2 hours minimum

Standard Construction

Frame

14 gauge (2 mm) thick galvanized steel sheet with 2" (50 mm) external flanges.

Blade

Double Skin blades (Aerofoil) of 14 gauge (2 mm) thick roll formed galvanized steel.

Blade Seals

300°C High temp, resistant Silicon rubber blade seals.

Jamb Seals

Stainless Steel.

Bearings

High temperature resistant concealed ball bearings.

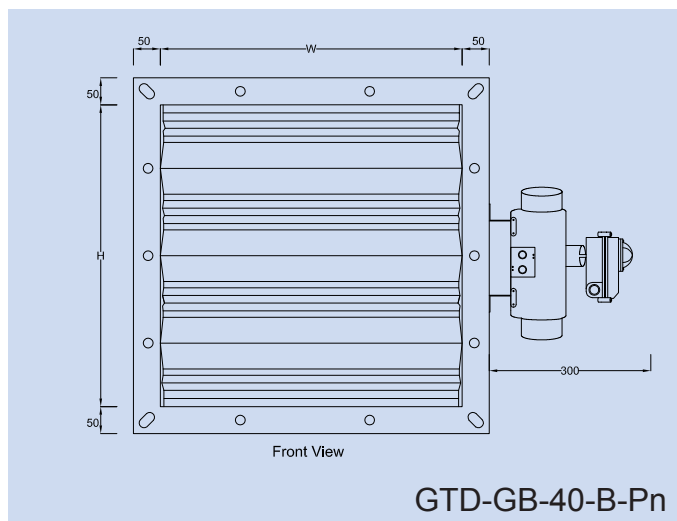
Axle

¾" (19 mm) Diameter axle.

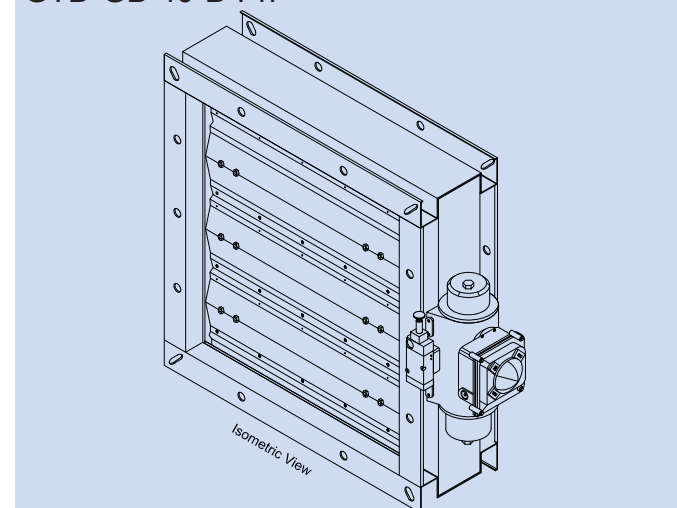
Drive : Operation by Pneumatic actuator. (Model: XL-131) (Operating Pressure 5 bar) and adjustable throttling valve.

Note : * Standard Construction.

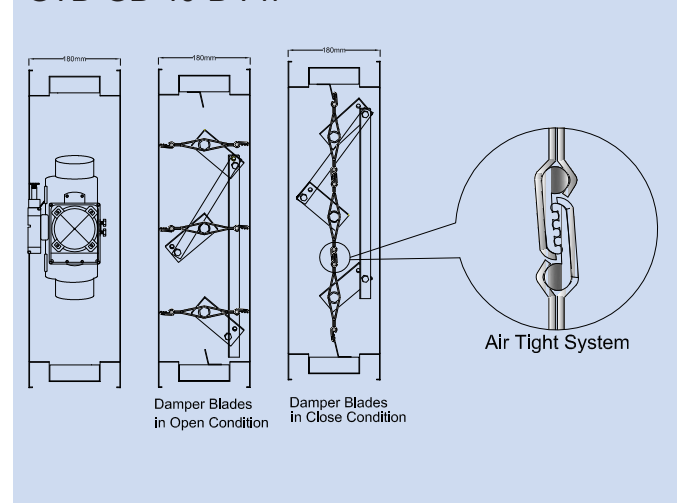
B-40 Series



GTD-GB-40-B-Pn



GTD-GB-40-B-Pn



Gas Tight Damper - Pneumatic Pneumatic Actuator Ratings

B-40 Series

At 250°/482°F for a minimum of two hours

Pneumatic Actuator Specification

Temperature range

Normal operation : -20°C to +120°C

No Fire : -4°F to + 248°F

Tunnel Application : -20°C to +250°C

Under Fire : for 2 hours minimum

: -4°F to / +482°F

for 2 hours minimum

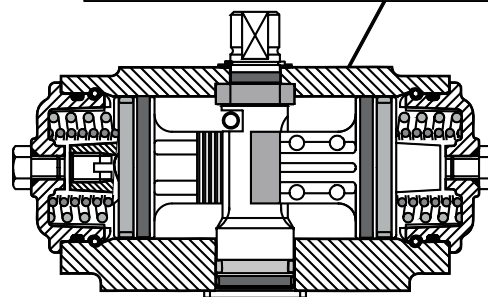
Dynamic O-ring seals : Fluorocarbon Rubber 9775 (Viton®).

Static O-ring seals : Nitrile Rubber (Buna-N)

Bearing material : High temperature composite laminate L10/G

Grease : Christo-lube MCG-130

- Viton® dynamic 'O'-Ring seals
- Composite laminate L10/G wear strips and bearings
- Christo-lube MCG-130 grease



Model Number	Spring Rating	Torque from Springs		Torques from air stroke (Nm) at given operating air pressure (bar)													
				3.0 bar(g)		4.0 bar(g)		5.0 bar(g)		5.5 bar(g)		6.0 bar(g)		7.0 bar(g)		8.0 bar(g)	
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
XL131	S60	38	23	26	11	42	27	58	43	66	51	75	59	91	76	107	92

Model Number	Spring Rating	Torque from Springs		Torques from air stroke (in.lbs) at given operating air pressure (PSI)													
				40 PSI		50 PSI		60 PSI		70 PSI		80 PSI		90 PSI		100 PSI	
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
XL131	S60	333	200	192	59	291	157	389	255	487	353	585	452	683	550	781	648

Note:

We recommend that the valve (or louvre) manufacturer supplies the maximum required torque values (Including any adjustments or suggested safety factors for valve or louvre service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.

NAMUR solenoid valves

*1/4", 3/2 - 5/2, NAMUR interface, electrically operated spool valves, with static seals, high flow, for mounting on NAMUR interface.

Coils and connectors are to be ordered separately.

Namur solenoid valves Specifications

Fluid : Compressed filtered air with or without lubrication

Pressure range: 1 ÷ 10 bar

Temperature range : -10°C ÷ +60°C

Orifice: 7 mm

Flow : 1.000 NI/min at 6 bar with ΔP 1 bar

Minimum piloting pressure: 1,5 bar

Minimum external air pressure: 1,5 bar

Mounting: In any position

Manual override: Two stable positions

Response time: Energising: De-energising:

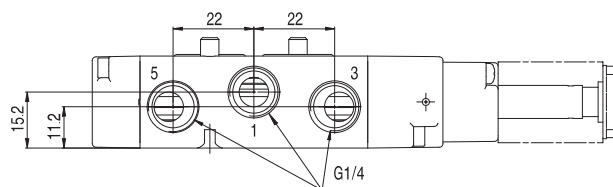
Materials : Body: Aluminium

Heads: Plastic

Spool: Chemical nickel plated aluminium

Distancers: Plastic

Seals: Nitrile rubber (NBR)



Code key

Actuation	Size	Function
NE= NAMUR electrical	1/4"	30 = 3/2 NC 32 = 3/2 solenoid/solenoid *50 = 5/2 solenoid/spring 51 = 5/2 solenoid/solenoid

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Gas Tight Damper - Pneumatic

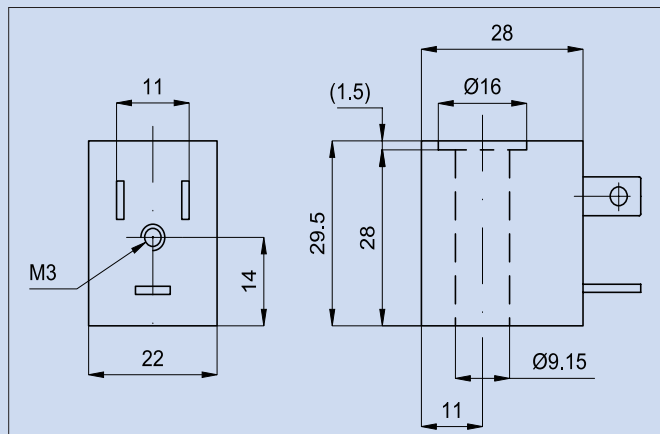
B-40 Series

NAMUR solenoid valve Accessories

Coils

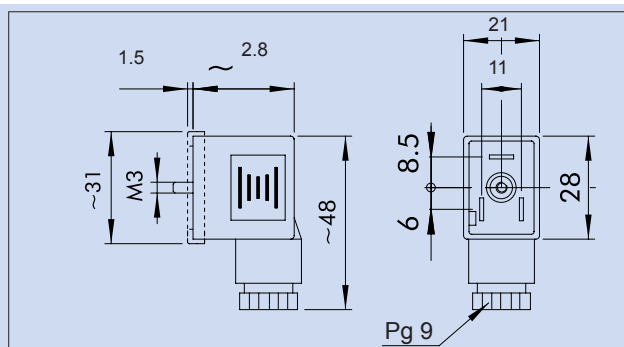
Coils with low electrical consumption conforming to EN 60204.1 and VDE 0580 standards, class F

Technical data	Direct current	Alternating current
Voltage tolerance	± 10%	± 10%
Frequency tolerance	-	± 5%
Electrical consumption	3 W	4,2 VA
Voltage	12 e 24 V	12, 24, 48, 110, *230V 50/60HZ
Duty cycle	100% ED	
Class protection	IP 65 (with connector already mounted)	
Temperature range	-20 °C + + 50 °C	
Response time	10 ms	



Coil Connectors

Tipo	Colour	Ø Cable
Standard	Black	PG9
LED 24V	Transparent	PG9
LED 110V	Transparent	PG9
LED 220V	Transparent	PG9
LED + VDR24V	Transparent	PG9
LED + VDR110V	Transparent	PG9
LED + VDR220V	Transparent	PG9



Limit Switches

Model	LS710 (Weather Proof)	ALS30 (Explosion Proof)
Enclosure	Weather Proof, IP67	Ex d IIC T6, IP66
Mechanical Switch	2 SPDT	2 SPDT
Electrical Ratings	15A 125V/250V AC 0.6A 125V DC 0.3A 250V DC	15A 125V/250V AC 0.6A 125V DC 0.3A 250V DC
Terminal Strip	8 Contacts	8 Contacts
Temp. Ratings	-20° ~ 85°	-20° ~ 85°
Conduit Entries	2-PF 1/2"	2-PF3/4"



ALS30
Explosion Proof

LS710
Weather Proof


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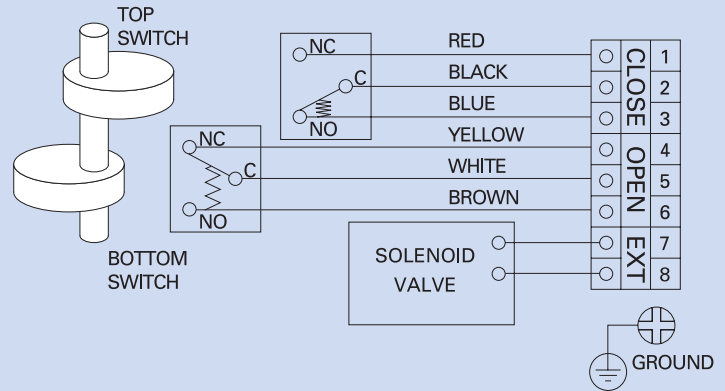
Gas Tight Damper - Pneumatic Limit Switches

B-40 Series


Wiring Diagram

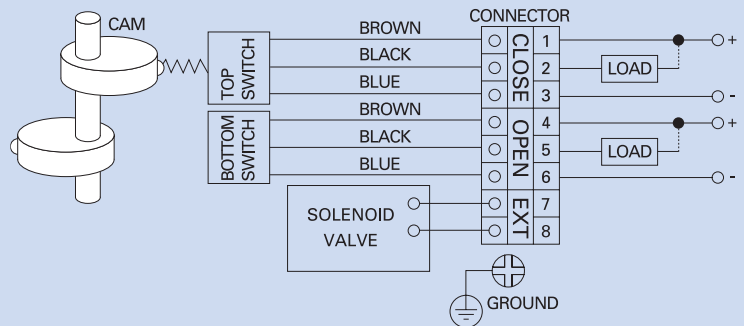
Mechanical Switch (2 SPDT)

- Micro Switch
- Used in  approved.
- Type : Mechanical Switch
- Power : 15A-125 or 250V AC,
0.6A-125V DC, 0.3A-250V DC




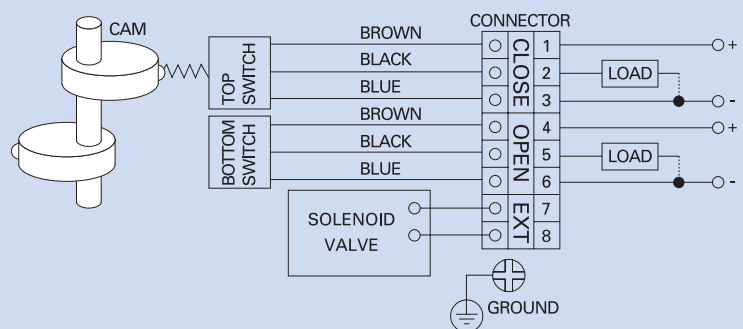
Proximity Switch (Out Put Type : NPN)

- Proximity Switch
- Used in  approved.
- Type : Proximity Switch
- Power Supply : 12~24V DC
(OPERATING VOLTAGE : 10~30V DC)



Proximity Switch (Out Put Type : PNP)

- Proximity Switch
- Used in  approved.
- Type : Proximity Switch
- Power Supply : 12~24V DC
(OPERATING VOLTAGE : 10~30V DC)



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Gas Tight Damper Ordering Data

B-40 Series

GTD	Gas Tight Damper						
↑	G	Galvanized Steel (GI)					
	S	Stainless Steel (SS)					
	↑	G	Galvanized Steel (GI)				
		S	Stainless Steel (SS)				
		↑	B	BETEC CAD.			
			↑	40	Heavy Duty		
TVD	X	X	B	↑	B	Opposed Operation	
	Frame Material	Blade Material		X	X	E = Electric P = Pneumatic	
				Series	Blade Type	Drive Type	

Note :

1) If frame and blade material is same, use single alphabet.

Example : GTD-GB-40-B where G = Galvanized frame and blade.

GTD-GSB-40-B where G = Galvanized frame

S = Satinless Steel Blade.

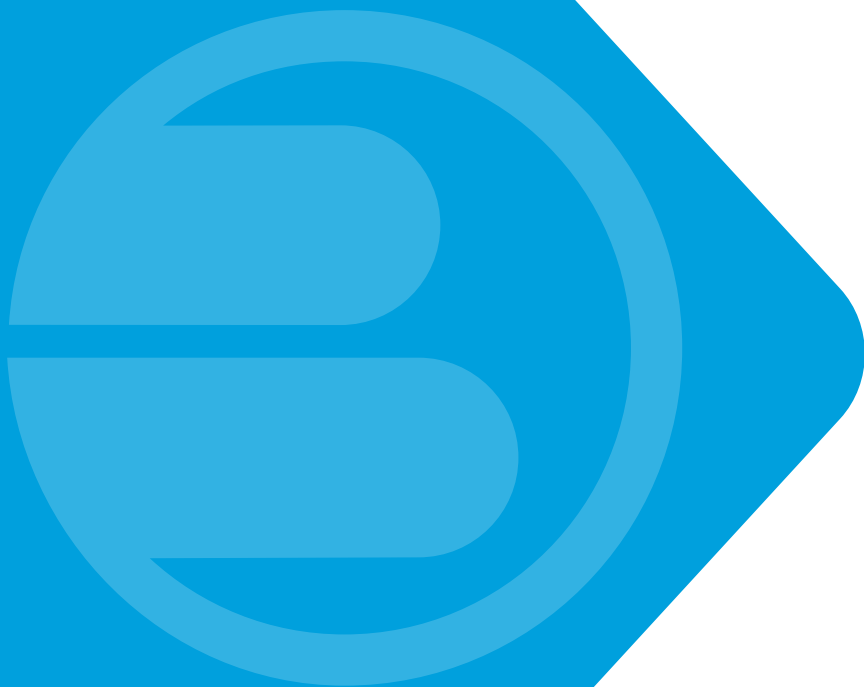
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Gas Tight Damper (Shut off)

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.





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Gas Tight Dampers



GTD-GB40-B-E

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