

Series
PL-10-1A



Normally open fire-resisting duct damper with thermal fuse and return spring

■ **Application**

A fire safety damper prevents the spread of smoke and fire via ventilation and air conditioning system ducts in the event of fire. Such units are installed in ventilation duct channels which cross fire-separation walls and ceilings. The fire resistance rating according to EN 1366-2 is EIS 60 or EIS 120.

■ **Design**

The PL series dampers are made in the general-purpose industrial version with a minimized variety of hardware components using low-alloy galvanized steel. The flap is made of fire-resistant material (vermiculite) with thermoexpansive fireproof sealing. The duct design implies two connection ports for integration into a ventilation duct (duct system). Depending on the design variant the PL series dampers are equipped with:

- ▶ **mechanical actuating unit with a thermal fuse and a return spring.**

Series
PL-10-PNP
PL-10-PVP
PL-10-PSP



Normally open fire-resisting duct damper with electric actuator, return spring and thermoelectric breaker

The fire safety damper remains open in the protective position. The damper is set to the operating position upon the thermal fuse breakdown resulting from a temperature increase. In the event of fire, the fusible element will melt upon the temperature reaching 72°C and the spring will set the flap to the closed position.

▶ **electric actuator with a built-in return spring and thermally sensitive breaker.**

Setting the damper to operating position (direct fire contact): remotely, via electric actuator. The damper can be set to the operating or protective position either remotely via a control panel or manually using the manual cocking handle which is always included in the standard delivery set of the electric actuator.

In case of the remote control panel failure, the back-up thermal breaker interrupts the power supply to the electric actuator and the return spring sets the damper to the operating position.

Emergency damper actuation:

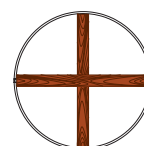
The damper flap is set to the protective position automatically (damper unaffected by fire). The electric actuator remains energized at all times.

In case of an emergency actuation (direct fire contact): The electric actuator equipped with a return spring is de-energized and the damper flap is set to the operating position by means of the spring energy.

In case of a power failure not related to fire and its subsequent restoration at the actuator with a return spring, the damper flap returns to protective position.

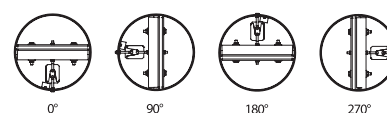
■ **Mounting**

During the fire safety damper installation make sure that the release mechanism and the inspection hole face an easily accessible side of the wall or ceiling. This will ensure convenient control of the thermally sensitive release mechanism and its internals. The damper can be embedded into brick or concrete walls with the appropriate fire resistance rating. Wooden spreader bars should be used to avoid casing deformation during the installation.



Use of wooden spreader bars during installation

Upon completing the installation remove the wooden spreader bars.



Recommended damper positions

The damper may not be installed:

Into air ducts and on premises rated explosion and fire safety category A and B.

Into air ducts of local intakes for flammable and explosive mixtures.

Into systems which are do not undergo periodic cleaning pursuant to the established regulations for prevention of flammable deposit buildup.

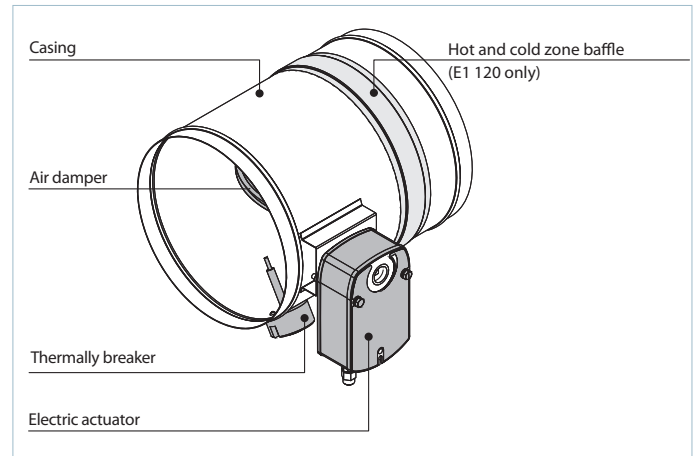
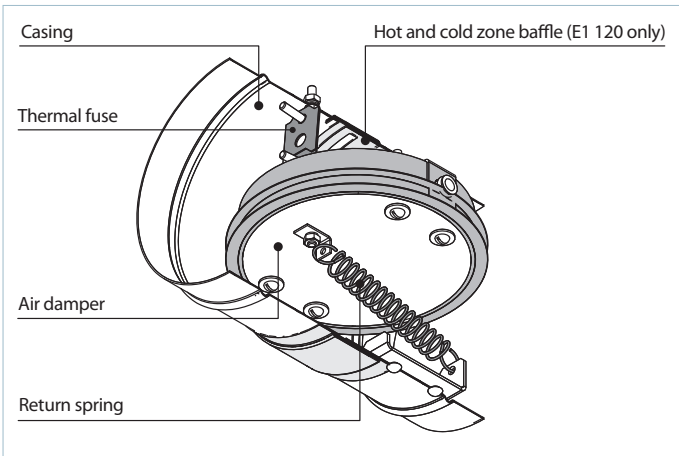
Designation key: _____

PL-10-X- DNX/X

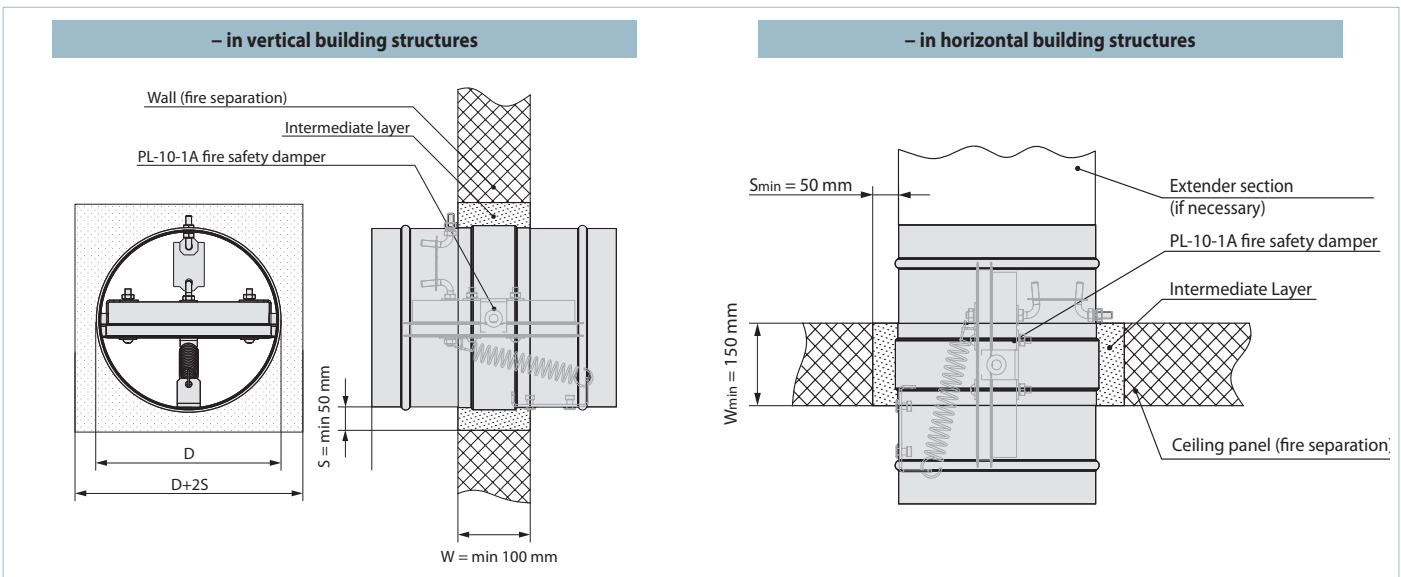
Fire resistance EI 60 – 1 hour; EI 120 – 2 hours
Rated damper diameter [mm] 100; 125; 150; 160; 180; 200; 225; 250; 315; 355; 400
Actuator type 1A – thermal fuse (72 °C), return spring (manual actuation) PNP24T – 24 V NENUTEC electric actuator with a return spring and a thermal breaker PNP230T – 230 V NENUTEC electric actuator with a return spring and a thermal breaker PVP24T – 24 V BELIMO electric actuator with a return spring and a thermal breaker PVP230T – 230 V BELIMO electric actuator with a return spring and a thermal breaker PSP24T – 24 V SIEMENS electric actuator with a return spring and a thermal breaker PSP230T – 230 V SIEMENS electric actuator with a return spring and a thermal breaker
Unit designation PL-10 – fire safety damper

■ The PL-10-1A fire safety damper with a mechanical actuating unit, a thermal fuse and a return spring

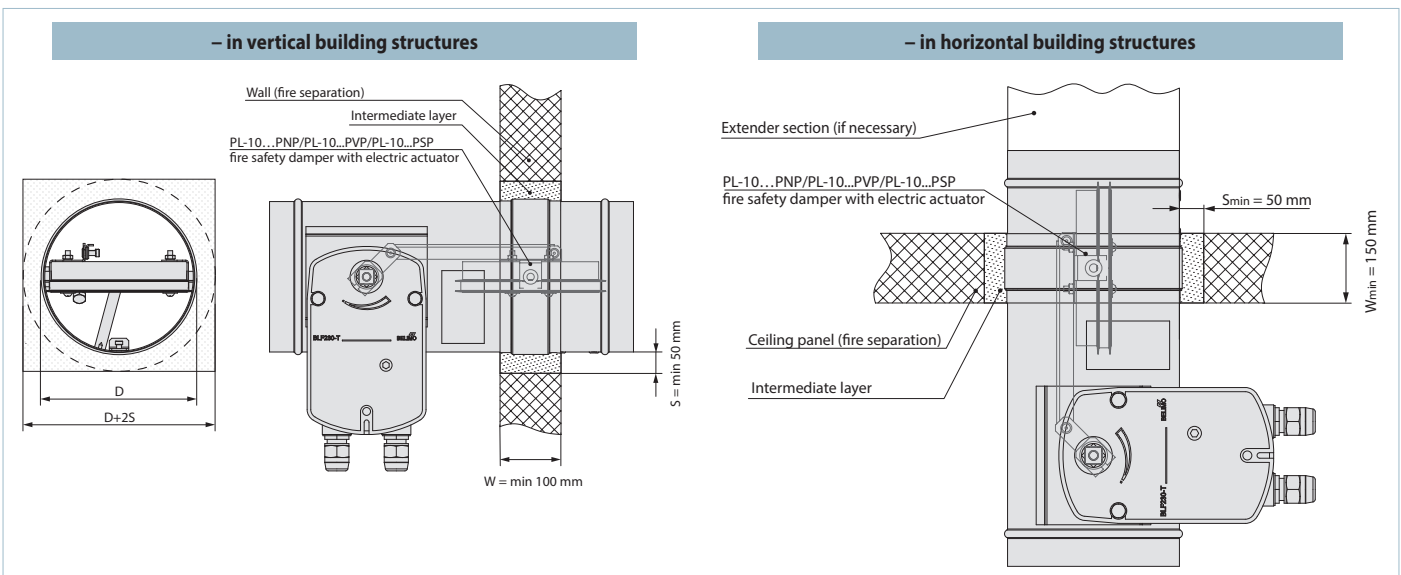
■ The PL-10...PNP/PL-10...PVP/PL-10...PSP fire safety damper with an electric actuator and a thermoelectric breaker



■ Installation recommendations for PL-10...1A dampers with a mechanical actuating unit with a thermal fuse and a return spring

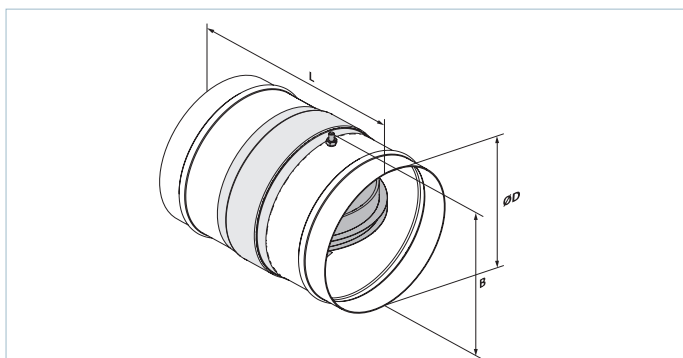


■ Installation recommendations for PL-10...PNP/PL-10...PVP/PL-10...PSP fire safety dampers with electric actuator and thermoelectric breaker

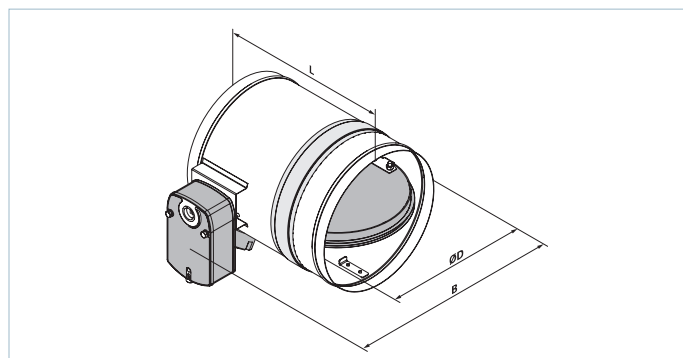


FIRE-RESISTING DAMPERS

■ Fire safety damper with a mechanical actuating unit, a thermal fuse and a return spring



■ Fire safety damper with an electric actuator and thermally sensitive breaker



■ Overall and connecting dimensions of PL dampers with a mechanical actuator

Modification	Dimensions [mm]			Weight [kg]
	ØD	L	B	
PL-10-1A-DN100	99	170	112	1
PL-10-1A-DN125	124	170	137	1.2
PL-10-1A-DN150	149	170	162	1.5
PL-10-1A-DN160	159	170	172	1.6
PL-10-1A-DN180	179	170	192	1.8
PL-10-1A-DN200	199	170	212	2
PL-10-1A-DN225	224	170	237	2.2
PL-10-1A-DN250	249	190	262	2.5
PL-10-1A-DN315	314	190	327	3.6
PL-10-1A-DN355	354	190	367	4.4
PL-10-1A-DN400	399	240	412	6

■ Overall and connecting dimensions of PL dampers

Modification	Dimensions [mm]			Weight [kg]
	ØD	L	B	
PL-10-...-DN100	99	300	195	2.9
PL-10-...-DN125	124	300	215	3.1
PL-10-...-DN150	149	300	245	3.4
PL-10-...-DN160	159	300	255	3.5
PL-10-...-DN180	179	300	275	3.8
PL-10-...-DN200	199	300	295	4
PL-10-...-DN225	224	300	325	4.4
PL-10-...-DN250	249	310	345	4.7
PL-10-...-DN315	314	310	415	6.5
PL-10-...-DN355	354	310	455	8.3
PL-10-...-DN400	399	310	505	9.9

■ Main technical specifications of BELIMO electric actuators with a return spring and a thermal breaker

Technical data	Basic models	
	AC/DC 24 V	AC 230 V
Rated operation voltage	AC/DC 24 V	AC 230 V
Permissible operating voltage tolerance	AC 19.2...28.8 V DC 21.6...28.8 V	AC 198...264 V
AC mains frequency	50/60 Hz	
Power consumption at rest [W]	0.8	1.1
Power consumption in operation [W]	2.5	3.5
Maximum design capacity [VA]	4	6.5
Motor torque [Nm]	4	
Spring torque [Nm]	3	
Protection class	III	II
Ingress protection rating	IP54	
Auxiliary switches	2 pcs., single-pole, reversible 1 mA...3 (0.5) A, AC 250 V	
Electric motor connection cable	1 m, 2 x 0.75 mm ² (halogen-free)	
Auxiliary switch connection cable	1 m, 6 x 0.75 mm ² (halogen-free)	
Running time spring	20 seconds at -10...+55 °C < 60 seconds at -30...-10 °C	
Running time motor	< 60 s/90°	
Response temperature of thermal breaker sensors	Duct sensor 72 °C Outdoor sensor 72 °C	
Service life	Min. 60 000 emergency positions	
Technical maintenance	Not required	

■ Main technical specifications of NENUTEC electric actuators with a return spring and a thermal breaker

Technical data	Basic models	
Rated operation voltage	AC/DC 24 V	AC 230 V
Permissible operating voltage tolerance	AC/DC 21.8...26.4 V	AC 209...253 V
AC mains frequency	50/60 Hz	
Power consumption in rest position [W]	2.5	
Power consumption in operation [W]	7	
Maximum design capacity [VA]	10	
Motor torque [Nm]	5	
Spring torque [Nm]	5	
Protection class	III	II
Ingress protection rating	IP54	
Auxiliary switches	2 pcs., single-pole, reversible, 3 (1.5) A, AC 250 V	
Electric motor connection cable	1 m, 2 x 0.75 mm ² (halogen-free)	
Auxiliary switch connection cable	1 m, 6 x 0.75 mm ² (halogen-free)	
Running time spring	50...70 s (return spring < 20 s)	
Service life	60 000 emergency positions	

■ Main technical specifications of Siemens electric actuators with a return spring and a thermal breaker

Technical data	Basic models	
Rated operation voltage	AC 24 V/DC 24...48 V	AC 230 V
Permissible operating voltage tolerance	AC/DC ±20 %	AC ±15 %
AC mains frequency	50/60 Hz	
Power consumption at rest [W]	2	3.5
Power consumption in operation [W]	3.5	4.5
Maximum design capacity [VA]	5	7
Motor torque [Nm]	4	
Spring torque [Nm]	4	
Protection class	III	II
Ingress protection rating	IP54	
Auxiliary switches	2 pcs., single-pole, reversible, 6(2)A, AC 24...250 V	
Electric motor connection cable	0.9 m, 2 x 0.75 mm ² (halogen-free)	
Auxiliary switch connection cable	0.9 m, 6 x 0.75 mm ² (halogen-free)	
Running time spring	15 seconds < 60 seconds at -30...-10 °C	
Running time motor	90 s/90°	
Response temperature of thermal breaker sensors	Duct sensor 72 °C Outdoor sensor 72 °C	
Service life	10 000 emergency positions	
Technical maintenance	Not required	