AYSU
HVAC SYSTEMS

DAMPERS · TECHNICAL DATASHEET

Product code: **AYS-DMP-YR**

CIRCULAR FIRE DAMPER



Compact fire damper for circular ducts passing through walls and floors. Available motorized, non-motorized (thermal fuse) and in calcium silicate.

FIRE RATING	EI 90 – EI 120 S
DIAMETER	Made to project
CONTROL	Motor / thermal
THERMAL FUSE	72 °C

FEATURES

- Spigot connection to circular ducts, compact casing
- Normally open; motorized or thermal fuse release
- Thermal release closes the damper at 72 °C
- Calcium silicate version: EI 120 S, intumescent seal
- Sizes made to project, any diameter
- Actuators: SIEMENS, BELIMO, NANOTEK, HOOCON

VERSIONS

MOTORIZED
Spring-return actuator
closes on panel / BMS signal; position feedback, remote test

NON-MOTORIZED
Thermal fuse
fuse melts at 72 °C, spring closes the blade; no power needed

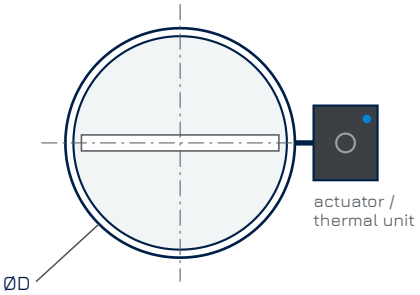
CALCIUM SILICATE
Asbestos-free blade · EI 120 S
intumescent seal; motorized or with thermal fuse

TECHNICAL SPECIFICATIONS

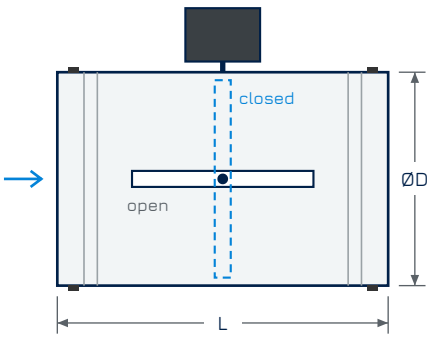
Fire resistance EI 90 S / EI 120 S, per model	Release 72 °C
Closing by spring (fail-safe)	Actuator voltage 24 V AC/DC or 230 V AC
Duct connection spigot with seal	Diameter made to project, any size

TECHNICAL DRAWINGS

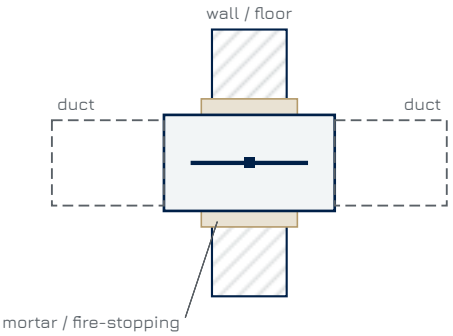
dimensions in mm · not to scale



FRONT VIEW



LONGITUDINAL SECTION



WALL PENETRATION

SIZES AND ORDERING

Diameter (ØD)	any size to project; selection table lists example diameters (page 2)
Casing length (L)	per model and diameter
Model	motorized · thermal fuse · calcium silicate — state when ordering
Order code	AYS-DMP-YR-[ØD], e.g. AYS-DMP-YR-315

AYSU
HVAC SYSTEMS

DAMPERS · TECHNICAL DATASHEET

Product code: **AYS-DMP-VR**

CIRCULAR FIRE DAMPER

OPERATING PRINCIPLE

MOTORIZED

1. **Normal operation:** The actuator is powered, holding the spring loaded; blade open.
2. **Release:** Panel / BMS signal, power cut, or duct air at 72 °C.
3. **Closing and feedback:** The spring closes the blade (fail-safe); end switches report position.

NON-MOTORIZED (THERMAL FUSE)

1. **Normal operation:** The blade is held open by the thermal fuse with the spring loaded.
2. **Release and closing:** At 72 °C the fuse melts and the spring closes the blade.
3. **Resetting:** The fuse is replaced, the blade opened by hand and the spring reset.

Calcium silicate version: the asbestos-free blade and the intumescent seal in the casing expand to close the gaps in a fire, giving EI 120 S. Available motorized or with thermal fuse.

SELECTION TABLE

Standard blade (≈ 30 mm) · blade open · ρ = 1.2 kg/m³ · calculated

ØD	A_f m²	AIRFLOW [m³/h] · by duct velocity			Δp [Pa] · calculated			ζ
		3 m/s	5 m/s	7 m/s	3 m/s	5 m/s	7 m/s	
Ø100	0.0037	85	141	198	13.1	36.3	71.2	2.42
Ø125	0.0069	133	221	309	6.9	19.0	37.3	1.27
Ø150	0.0112	191	318	445	4.5	12.5	24.5	0.83
Ø160	0.0132	217	362	507	4.0	11.0	21.6	0.73
Ø200	0.0227	339	565	792	2.7	7.5	14.7	0.50
Ø250	0.0380	530	884	1,237	2.0	5.5	10.8	0.37
Ø315	0.0639	842	1,403	1,964	1.6	4.3	8.5	0.29
Ø355	0.0831	1,069	1,782	2,494	1.4	3.9	7.7	0.26
Ø400	0.1078	1,357	2,262	3,167	1.3	3.6	7.0	0.24
Ø450	0.1389	1,718	2,863	4,008	1.2	3.3	6.5	0.22
Ø500	0.1739	2,121	3,534	4,948	1.1	3.1	6.1	0.21
Ø560	0.2211	2,660	4,433	6,207	1.1	2.9	5.8	0.20
Ø630	0.2833	3,367	5,611	7,855	1.0	2.8	5.5	0.19
Ø710	0.3638	4,276	7,127	9,977	1.0	2.7	5.2	0.18
Ø800	0.4665	5,429	9,048	12,667	0.9	2.6	5.0	0.17
Ø900	0.5954	6,871	11,451	16,032	0.9	2.5	4.9	0.17
Ø1000	0.7401	8,482	14,137	19,792	0.9	2.4	4.8	0.16

ACTUATOR OPTIONS

Brands and voltages from the catalogue

BRAND	SERIES	TORQUE	VOLTAGE	NOTE
SIEMENS	GMA · GCA	7 – 16 Nm	24 V AC/DC · 230 V AC	standard · OpenAir spring return
BELIMO	BFL · BFN · BFG · BF	4 – 18 Nm	24 V AC/DC · 230 V AC	MP-Bus, Modbus, BACnet options
NANOTEK	Fire / smoke series	–	24 V AC/DC · 230 V AC	actuators with thermal release
HOOCON	SA-FU · SA-MU	3 – 30 Nm	AC/DC 24 V · AC 100–240 V	IP54, 72 °C thermal sensor option

INSTALLATION AND MAINTENANCE

1. **Installation:** Install to the certified wall / floor detail; fill the gap with mortar or approved fire-stopping.
2. **Duct connection:** Ducts slide over the spigots and are fixed with clamps or rivets; ducts are supported separately.
3. **Electrical (motorized):** Connect the actuator to its label voltage; wire end switches to the fire panel or BMS.
4. **Maintenance and testing:** Check blade, seal and release regularly; test by closing and opening the damper.

Fire resistance class and certificates are stated per model; the actuator follows the approved combination. Airflow and Δp are calculated (not laboratory tested); the calcium silicate blade is thicker, so A_f is smaller.