



Fire Damper

LX-5

in libraries of



EI 120 (v-h-i-→o) S
 EN 13501-3+A1:2010
 EN 15650:2010
 Certificate of Conformity
CE 1488-CPR-0278/W
Damper tightness class: 4
Casing tightness class: C
 EN-1751:2002



GOLD MEDAL MTP

EUROPEAN PATENT NO. 2229984

air handling intelligence



open in
PartShelf24



FUNCTION

The LX-5 fire dampers are designed for buildings where in the event of a fire the affected zone should be isolated from the other zones, by among others, closing fire dampers, while the ventilation and air conditioning systems should operate normally in the other non-affected zones of the building. The performance criteria are satisfied in case of fire from inside to outside as well as outside to inside or both, respectively.

APPLICATION

The LX-5 fire dampers installation is allowed within a duct passing through a vertical and horizontal building partition or directly in building partition. Once the blade of the damper has been closed, the fire-affected zone is isolated - fire resistance of partition is maintained what prevents the spread of fire into the adjoining compartments. Fire damper closes as a result of rise in temperature in ventilation duct above 72°C or 95°C and activation of fuse or by control signal transmitted from the fire alarm control panel if damper is equipped with remote control mechanism.

DESCRIPTION

The GRYFIT LX-5 fire damper consists of:

- rectangular casing made of galvanized steel sheet alternatively stainless or acid proof steel,
- movable damper blade made of fire resistant board,
- combination of smoke and fire proof seals of damper blade,
- control mechanism and optional EMS module enabling fire damper assessment with the TZ tester,
- optional access door provided with a gasket and a cover with quick clamp lever.



SELECTION

BASIC CHARACTERISTICS OF LX-5 WITH RECTANGULAR FLANGE CONNECTION

L H	200	250	300	315	350	400	500	600	630	700	800	900	1000	1100	1200	1300	1400	1500	
200	2,85 0,86 8	3,60 0,79 10	4,35 0,78 11	4,58 0,77 11	5,10 0,75 13	5,85 0,75 14	7,35 0,72 17	8,85 0,71 20	9,30 0,70 22	10,35 0,70 23	11,85 0,69 26	13,35 0,68 29	14,85 0,68 32	16,35 0,68 35	17,85 0,67 38	19,35 0,67 41	20,85 0,67 44	22,35 0,66 47	S K M
250	3,80 0,70 10	4,80 0,66 12	5,80 0,65 13	6,10 0,64 13	6,80 0,60 15	7,80 0,59 16	9,80 0,57 19	11,80 0,55 22	12,40 0,54 24	13,80 0,54 25	15,80 0,53 26	17,80 0,53 31	19,80 0,52 34	21,80 0,52 37	23,80 0,51 40	25,80 0,51 43	27,80 0,51 46	29,80 0,51 49	S K M
300	4,75 0,63 11	6,00 0,57 13	7,25 0,55 14	7,63 0,52 14	8,50 0,51 16	9,75 0,50 19	12,25 0,48 22	14,75 0,46 25	15,50 0,45 26	17,25 0,45 28	19,75 0,44 31	22,25 0,43 34	24,75 0,42 37	27,25 0,42 40	29,75 0,42 43	32,25 0,41 46	34,75 0,41 49	37,25 0,41 52	S K M
315	5,04 0,60 11	6,36 0,55 13	7,69 0,52 14	8,08 0,51 14	9,01 0,50 16	10,34 0,47 19	12,99 0,45 22	15,64 0,43 25	16,43 0,43 26	18,29 0,42 28	20,94 0,41 31	23,59 0,41 34	26,24 0,40 37	28,89 0,40 40	31,54 0,39 43	34,19 0,39 46	36,84 0,38 49	39,49 0,38 52	S K M
400	6,65 0,52 14	8,40 0,45 16	10,15 0,43 17	10,68 0,42 17	11,90 0,39 19	13,65 0,38 22	17,15 0,35 25	20,65 0,33 28	21,70 0,33 29	24,15 0,32 31	27,65 0,31 34	31,15 0,30 37	34,65 0,30 40	38,15 0,29 43	41,65 0,29 46	45,15 0,28 49	48,65 0,28 52	52,15 0,28 55	S K M
500	8,85 0,45 17	10,80 0,39 19	13,05 0,36 20	13,73 0,34 20	15,30 0,32 22	17,55 0,31 25	22,05 0,28 28	26,55 0,26 31	27,90 0,26 32	31,05 0,25 34	35,55 0,24 37	40,05 0,23 40	44,55 0,23 43	49,05 0,23 46	53,55 0,23 49	58,05 0,22 52	62,55 0,22 55	67,05 0,22 58	S K M
600	10,45 0,41 20	13,20 0,34 22	15,95 0,31 23	16,78 0,30 23	18,70 0,28 25	21,45 0,26 28	26,95 0,23 31	32,45 0,23 34	34,10 0,22 35	37,95 0,22 37	43,45 0,21 40	48,95 0,21 43	54,45 0,20 46	59,95 0,20 49	65,45 0,20 52	70,95 0,20 55	76,45 0,20 58	81,95 0,20 61	S K M
630	11,02 0,40 23	13,92 0,34 25	16,82 0,30 26	17,69 0,28 26	19,72 0,27 28	22,62 0,25 31	28,42 0,23 34	34,22 0,22 37	35,96 0,22 38	40,02 0,21 40	45,82 0,21 43	51,62 0,20 46	57,42 0,20 49	63,22 0,20 52	69,02 0,20 55	74,82 0,19 58	80,62 0,19 61	86,42 0,19 64	S K M
700	12,35 0,38 26	15,60 0,31 28	18,85 0,28 29	19,83 0,27 29	22,10 0,25 31	25,35 0,24 34	31,85 0,22 37	38,35 0,21 40	40,30 0,20 41	44,85 0,20 43	51,35 0,19 46	57,85 0,19 49	64,35 0,19 52	70,85 0,19 55	77,35 0,19 58	83,85 0,19 61	90,35 0,19 64	96,85 0,19 67	S K M
800	14,25 0,35 29	18,00 0,29 31	21,75 0,26 32	22,88 0,25 32	25,50 0,23 34	29,25 0,22 37	36,75 0,20 40	44,25 0,20 43	46,50 0,20 44	51,75 0,19 46	59,25 0,19 49	66,75 0,19 52	74,25 0,19 55	81,75 0,18 58	89,25 0,18 61	96,75 0,18 64	104,25 0,18 67	111,75 0,18 70	S K M
900	16,15 0,33 32	20,40 0,27 34	24,65 0,24 35	25,93 0,23 35	28,90 0,22 37	33,15 0,21 40	41,65 0,20 43	50,15 0,19 46	52,70 0,19 47	58,65 0,19 49	67,15 0,19 52	75,65 0,19 55	84,15 0,18 58	92,65 0,18 61	101,15 0,18 64	109,65 0,18 67			S K M
1000	18,05 0,32 35	22,80 0,26 37	27,55 0,23 38	28,98 0,22 38	32,30 0,21 40	37,05 0,20 43	46,55 0,18 46	56,05 0,18 49	58,90 0,18 50	65,55 0,18 52	75,05 0,18 55	84,55 0,18 58	94,05 0,18 61	103,55 0,18 64	113,05 0,18 67				S K M
1100	19,95 0,31 38	25,20 0,25 40	30,45 0,22 41	32,03 0,21 41	35,70 0,20 43	40,95 0,20 46	51,45 0,19 49	61,95 0,18 52	65,10 0,18 53	72,45 0,18 55	82,95 0,18 58	93,45 0,18 61	103,95 0,18 64						S K M
1200	21,85 0,30 41	27,60 0,24 43	33,35 0,22 44	35,08 0,21 44	39,10 0,20 46	44,85 0,19 49	56,35 0,18 52	67,85 0,18 55	71,30 0,18 56	79,35 0,18 58	90,85 0,18 61	102,35 0,18 64	113,85 0,18 67						S K M

Legend:



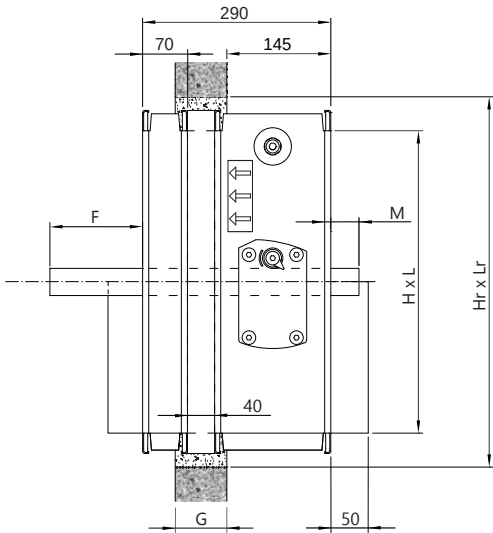
– for dimensions not listed in this table assembly in multiple arrangement of fire dampers is provided



– fields shaded in gray are beyond the dimensional range

S – effective area [dm²], M – weight [kg], K – correction value for acoustic calculations
L – dimension of the damper sides without actuator [mm], H – dimension of the damper sides with actuator [mm]
The LX-5 dampers maybe manufactured on request in 5 mm steps within the L and H dimension range.

DIMENSIONS OF LX-5 WITH RECTANGULAR FLANGE CONNECTION



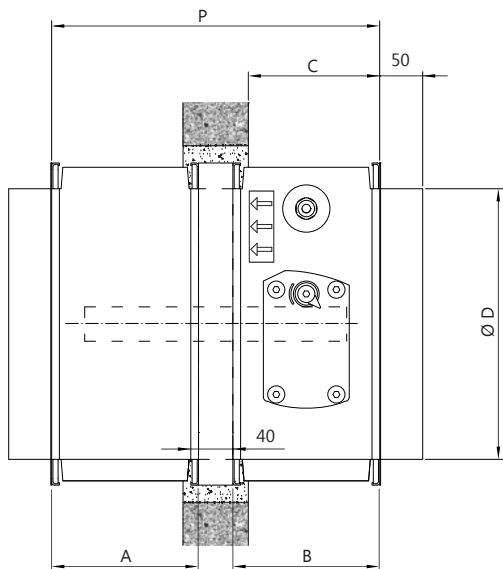
The dimensions of the open blade of the damper mounted in the vertical concrete or masonry partition G = 110 mm

H [mm]	F [mm]	M [mm]
200	0,5	-
250	25,5	-
300	50,5	-
315	58,0	-
350	85,5	-
400	100,5	-
500	150,5	40,5
600	200,5	90,5
630	215,5	105,5
700	250,5	140,5
800	300,5	190,5
900	350,5	240,5
1000	400,5	290,5
1100	450,5	340,5
1200	500,5	390,5



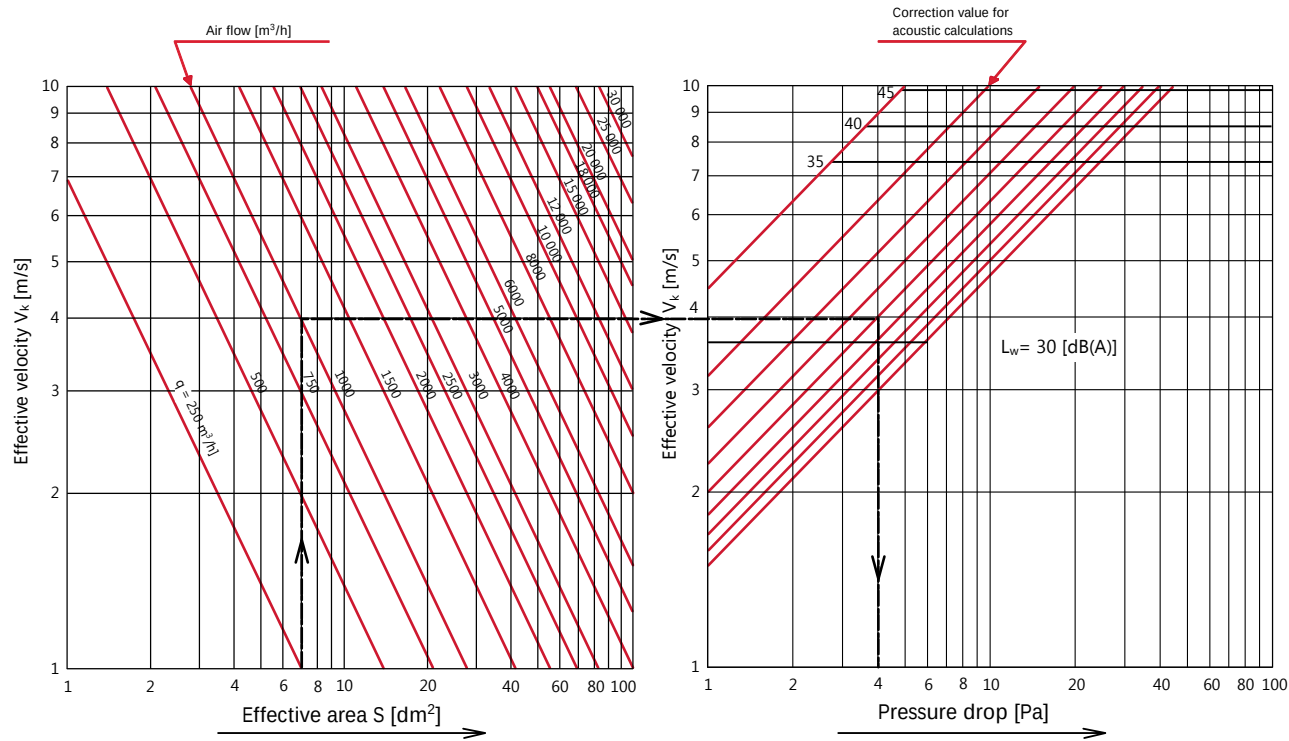
SELECTION

DIMENSIONS OF LX-5 WITH CIRCULAR SLEEVE CONNECTION



D [mm]	L and H [mm]	P [mm]	A [mm]	B [mm]	C [mm]	Weight [kg]	K [-]	S [dm ²]
100	200	310,0	90,0	180,0	145,0	9	0,86	2,2
125		310,0	90,0	180,0	145,0	9	0,86	2,2
150		310,0	90,0	180,0	145,0	9	0,86	2,2
160		310,0	90,0	180,0	145,0	9	0,86	2,2
200		310,0	90,0	180,0	145,0	9	0,86	2,2
250	250	370,0	150,0	180,0	145,0	14	0,66	4,0
300	300	370,0	150,0	180,0	145,0	17	0,55	6,2
315	315	370,0	150,0	180,0	145,0	17	0,51	7,0
350	350	400,0	180,0	180,0	145,0	23	0,44	9,0
400	400	400,0	180,0	180,0	145,0	28	0,38	12,2
500	500	540,0	250,0	250,0	215,0	41	0,28	20,2
600	600	640,0	300,0	300,0	265,0	55	0,23	30,2
630	630	640,0	300,0	300,0	265,0	61	0,22	33,6
700	700	740,0	350,0	350,0	315,0	71	0,20	42,2
800	800	840,0	400,0	400,0	365,0	87	0,19	56,2
900	900	940,0	450,0	450,0	415,0	105	0,19	72,2
1000	1000	1040,0	500,0	500,0	465,0	125	0,18	90,2

PRESSURE DROP AND SOUND POWER LEVEL



Legend:
L_w – acoustic pressure level inside damper [dB(A)], K - correction value from tables above

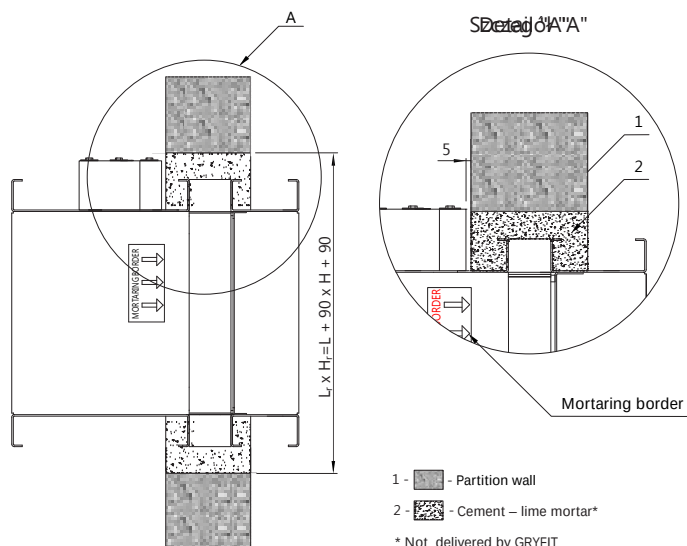
Example:

Air flow	= 1000	[m ³ /h]	K	= 0,51	[-]
L x H	= 315 x 315	[mm]	L _w	= 31	[dB(A)]
S	= 0,7	[dm ²]	ΔP	= 4	[Pa]



METHOD OF INSTALLATION

INSTALLATION OF FIRE DAMPER IN PARTITION WALL



Installation of fire dampers in partition:

- horizontal,
- vertical.

Minimum installation opening:

Concrete or brick walls

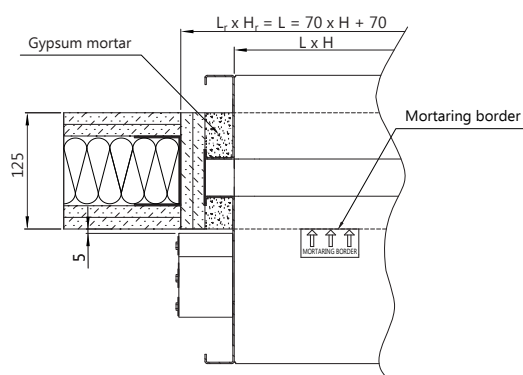
$$L_r \times H_r = (L + 90) \times (H + 90)$$

Mortaring border:

- is clearly marked by the label on the casing,
- damper blade should align with the center line of the partition wall's thickness,
- if mortaring in wall or ceiling, "mortaring border" marking on the fire damper must be strictly observe.

The GRYFIT fire damper can be installed with it's blade axis positioned horizontally as well as vertically.

INSTALLATION IN A LIGHT-WEIGHT PARTITION WALL



Installation of fire damper in partition:

- horizontal,
- vertical.

Minimum installation opening:

$$L_r \times H_r = (L + 70) \times (H + 70)$$

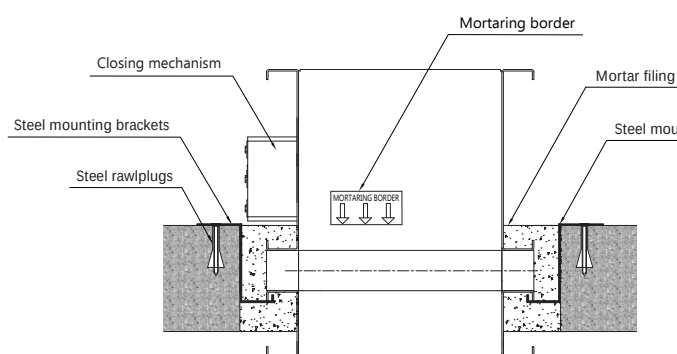
Mortaring border:

- is clearly marked by the label on the casing,
- damper blade should align with the center line of the partition wall's thickness,
- if mortaring in wall or ceiling, "mortaring border" marking on the fire damper must be strictly observe.

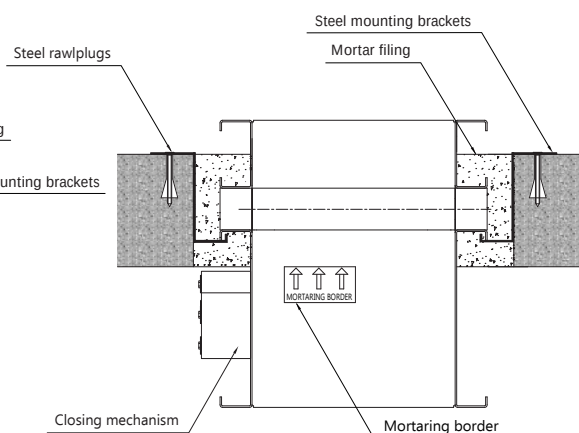
The GRYFIT fire damper can be installed with it's blade axis positioned horizontally as well as vertically.

INSTALLATION IN A HORIZONTAL PARTITION

Mechanism above horizontal partition



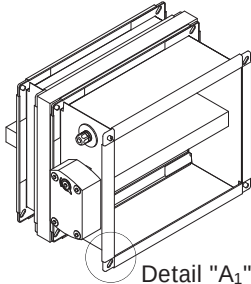
Mechanism below horizontal partition





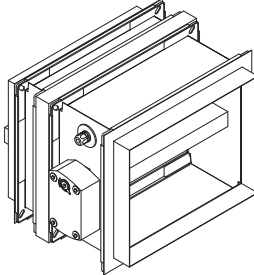
OPTIONS

Rectangular flange connection

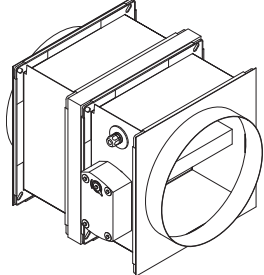


Detail "A₁" or "A₂"

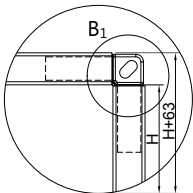
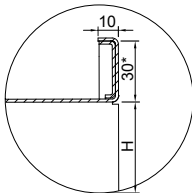
Rectangular sleeve connection



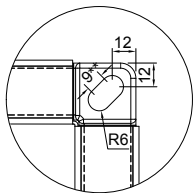
Round sleeve connection



Detail "A₁" – standard U formed corner if G-clamps with bolts are used to connect fire dampers with ducts.

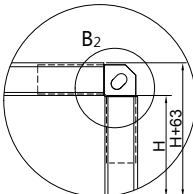
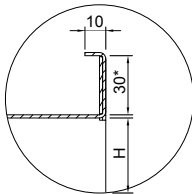


Detail "B₁"

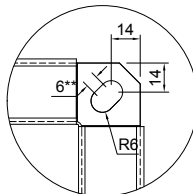


Remarks: * available option flange 20 mm; ** 2 mm for flange of 20 mm.

Detail "A₂" – optional flat corner - on request if C-shape long clips or drive clamps are used to connect fire dampers with ducts.

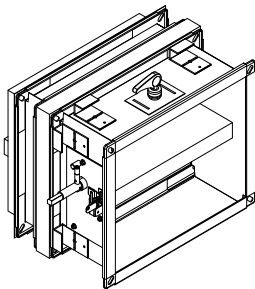


Detail "B₂"



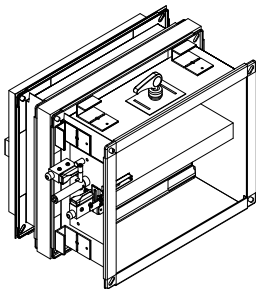
ACCESSORIES

Installation brackets
and access door



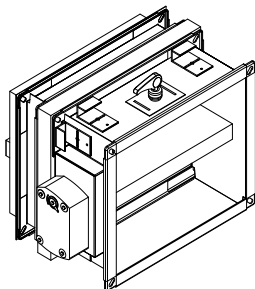
- set of installation brackets UM,
- access door AD,

Microswitches



- microswitch indicating "closed" position 1WKK,
- microswitch indicating "open" position 1 WKP,
- microswitches indicating "open" and "closed" position 1WKKP,

Microswitches, electromagnet
and actuator

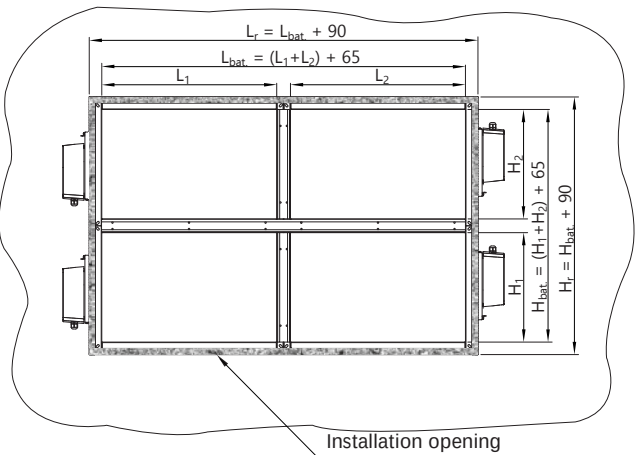


- electromagnet de-energized EP,
- electromagnet impulse EI,
- actuator FDG-8.

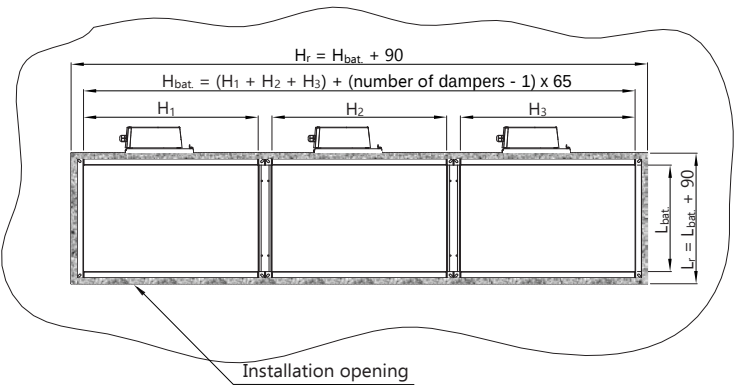


SELECTION

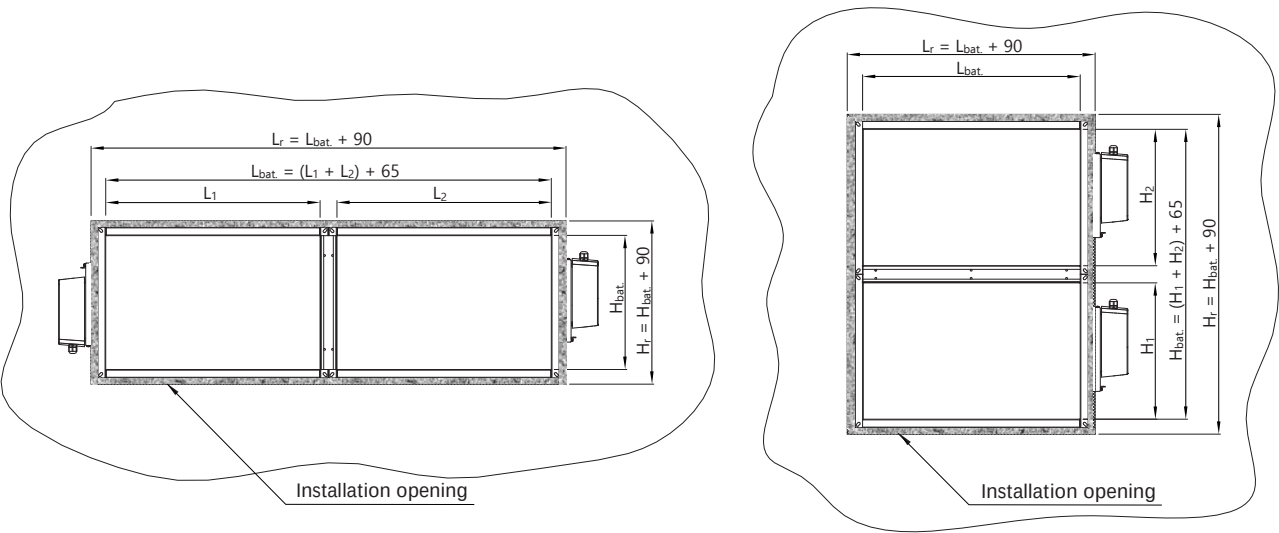
FOUR FIRE DAMPERS ARRANGED IN MULTIPLE ASSEMBLY



THREE OR MORE FIRE DAMPERS ARRANGED IN HORIZONTAL MULTIPLE ASSEMBLY



TWO FIRE DAMPERS ARRANGED IN VERTICAL OR HORIZONTAL MULTIPLE ASSEMBLY





ELECTRICAL WIRING DIAGRAMS

CHARACTERISTICS OF ELECTRO-MAGNET				
Supply voltage	24 lub 48 V DC impulse	230 V AC impulse	24 lub 48 V DC de-energized	230 V AC de-energized
Power input	3,5 W	5,5 VA	1,6 W	4 VA

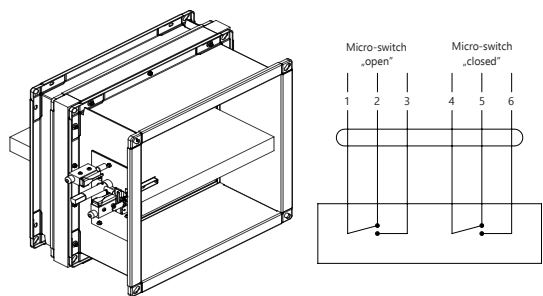
CHARACTERISTICS OF ACTUATOR	FDG-WT-5-230	FDG-WT-5-24
Supply voltage [V]	230V AC	24V AC/DC
Power input during tensioning the spring [W]	4 W	4 W
Power input during stand-by [W]	1 W	1 W
Time of movement – engine [s]	<40 s	<40 s
Time of movement – spring [s]	<20 s	<20 s
Torque motor [Nm]	>3 Nm	>3 Nm
Protection class IP	IP54	IP54
Sound power level – actuator dB(A)	<45 dB(A)	<45 dB(A)
Sound power level – spring dB(A)	<65 dB(A)	<65 dB(A)

Dimensional range allowed with FDG-WT-5

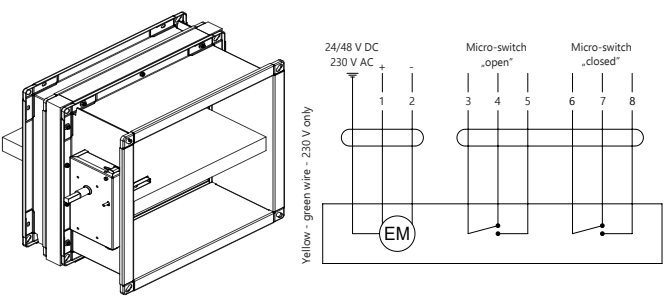
H	L	200	250	300	315	350	400	450	500	550	600	630	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200																														
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1000																														
1050																														
1100																														
1150																														
1200																														

CHARACTERISTICS OF ACTUATOR	FDG-WT-8-230	FDG-WT-8-24
Supply voltage [V]	230V AC	24V AC/DC
Power input during tensioning the spring [W]	9,2 VA	3,5 W
Power input during stand-by [W]	6,9 VA	0,5 W
Time of movement – engine [s]	55-71 s	55-71 s
Time of movement – spring [s]	21 s	21 s
Torque motor [Nm]	8 Nm	8 Nm
Protection class IP	IP54	IP54
Sound power level – actuator dB(A)	47 dB(A)	47 dB(A)
Sound power level – spring dB(A)	52 dB(A)	52 dB(A)

Damper with microswitches



Damper with electro-magnet and microswitches

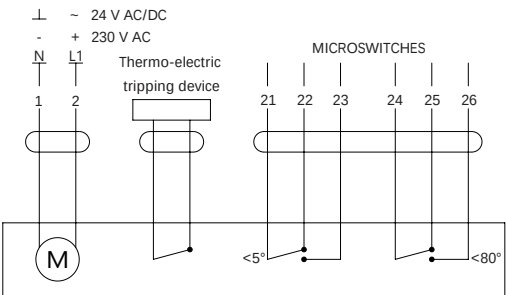




ELECTRICAL WIRING DIAGRAMS

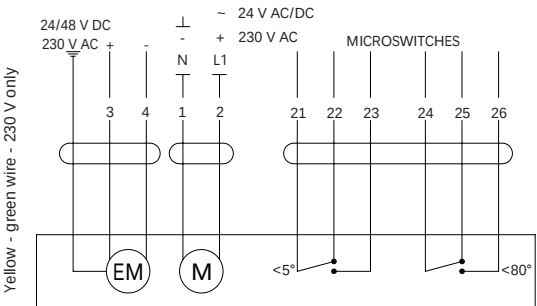
Damper with FDG-WT-8 actuator or FDG-WT-5*

Optional actuators: FDG-WT-8-24, FDG-WT-8-230, FDG-WT-5-24* and FDG-WT-5-230*.



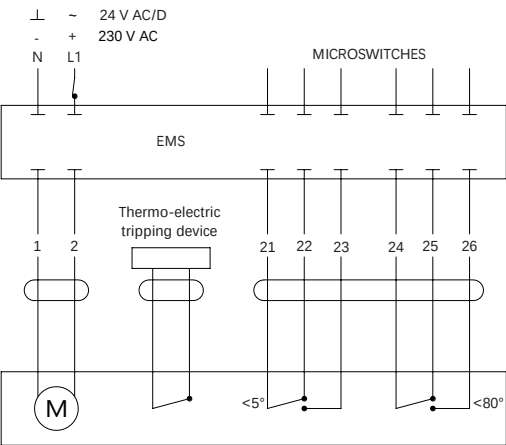
Damper with mechanism H

Optional actuators: FDG-8-24, FDG-8-230, optional electromagnets: EI24, EI230, EP24 or EP230.



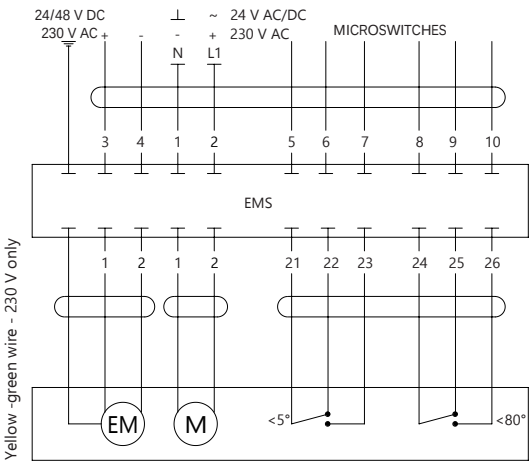
Damper with FDG-WT-8 actuator and EMS or FDG-WT-5* and EMS

Optional actuators: FDG-WT-8-24, FDG-WT-8-230, FDG-WT-5-24* and FDG-WT-5-230*.



Damper with mechanism H and EMS

Optional actuators: FDG-8-24, FDG-8-230, optional electromagnets: EI24, EI230, EP24 or EP230.



*Scope of application of the actuators FDG-WT-5-24 and FDG-WT-5-230 is shown in the table on page 7.

ORDER KEY

Enquiry:
Fire damper EI 120 (v_e-h_o-i ↔ o) S, with rectangular flange 30 mm, GRYFIT LX-5 LxH=600x500,
+ Actuator 24/48V AC/DC FDG-WT-8-24,
+ Module EMS.

GRYFIT quotation:
GRYFIT LX-5, LxH=600x500, KP30 + FDG-WT-8-24 + EMS.

Enquiry:
Fire damper EI 120 (v_e-h_o-i ↔ o) S, with rectangular flange 30 mm, GRYFIT LX-5 LxH=400x700,
+ Electromagnetic impulse type 24VDC,
+ Actuator 24/48V AC/DC FDG-8-24,
+ Module EMS.

GRYFIT quotation:
GRYFIT LX-5, LxH=400x700, KP30 + EI24 + FDG-8-24 + EMS.

