



NORDdamper

RKKM - Regulation Damper

RKKTM - Tight Regulation Damper

Intended for use in potentially explosive atmospheres

Maximum air velocity 12 m/s

Maximum duct over or underpressure 1500 Pa

Can be installed in horizontal or vertical position

According to ATEX Directive 2014/34/EU

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1. General

These Instructions for use are valid for damper types RKKM and RKKTM in design variants intended for use in potentially explosive atmospheres (named hereinafter also shortly as the “dampers”) according to ATEX directive 2014/34/EU and they complement the Technical specifications TPM 030/03, and TPM 031/03, respectively.

This means that the mentioned Technical Specifications are valid for these dampers, subject to the proviso that in the event of any conflict with this document, this document shall apply.

The document applies to both dampers without an actuator and dampers with an actuator (damper and actuator assemblies), when

- the dampers themselves are designed, classified, certified, manufactured and marked according to EN IEC 60079-0:2018 and EN ISO 80079-36:2016 standards by the manufacturer MANDÍK,
- any actuator is designed, classified, certified, manufactured and marked according to EN IEC 60079-0:2018, EN IEC 60079-1:2014, EN IEC 60079-11:2012, EN IEC 60079-11:2014 standards by the manufacturer SCHISCHEK and the resulting damper and actuator assembly is designed, classified, manufactured and marked by the manufacturer MANDÍK in accordance with the ATEX directive 2014/34 EU.

The dampers consist of the body, the leaf fitted according to the sealing circumference and the control mechanism. They serve the tight sealing of air piping or the regulation of the air flow in the piping by constricting the cross section.

External Casing leakage class ATC 3 (old marking “C“) acc. to EN 1751.

Tightness through the damper blade: class 4.

The dampers are destined for maximal velocity of air flow 12 m/s.

The dampers are intended for environment protected against weather impacts with the classification of climatic conditions class 3K5, without condensation, frost, ice formation, and without water even from other sources than rain according to EN 60 72133, change A2.

The air flowing through the dampers must not contain solid, fibrous, adhesive or aggressive particles.

If is not noticed other way, all dimensions and weight are in millimeters and kilograms.

1.1 Conditions of use

The dampers may be used under the following conditions:

- the dampers installed, commissioned, operated and maintained in accordance with those Instructions for use and in the case of dampers with a actuator also according to the operating instructions of the actuator manufacturer and
- the damper orientation with blade either in horizontal, or vertical position and
- mean air velocity in the duct of 12 m/s and the duct overpressure or underpressure of max. 1500 Pa, and
- damper control pressure drop, difference of the static pressure in duct section before and after the damper according to the relevant TPM.
- environment protected against weather effects 3K5 according to EN 60721-3-3 mod. A2, without condensation, icing, ice formation and without water from sources other than rain, and
- environment without abrasive, adhesive, electrically charged, chemically active and radioactive particles or droplets, without chemically active or radioactive gases. Under no circumstances should exothermic reactions or precipitation of condensate or the excretion of solid coatings or particles occur during normal operation, and corrosion, especially of the copper and brass components of the damper, may not occur. And further
- ambient temperature according to the given equipment category, see point k), whereas
- in the case of subsequent fitting of the damper with an actuator or other electrical elements, the temperature range is narrowed according to the temperature range of the electrical elements used, and
- the duct flange to which the damper flange is mounted must be flat in order to avoid reducing the tightness of the duct and/or the risk of damage to the damper when closing. The damper must be attached to a flange on at least one side. This also applies to when actuator is being set. While
- for dampers supplied with a preparation for an actuator, correct adjustment of the limit positions of the actuator is necessary to prevent mechanical damage to the damper, and further
- dampers can be used in the relevant zone with an explosion hazard under conditions in accordance with the Ex equipment category specified in this point, when the condition for temperature Ta applies both to the outside of the damper and to the transported air.

Damper design	Actuator manufacturer and type series	Category of equipment	Temperature of use	Allowed uses
Dampers with manual control	(not relevant)	II 2G Ex h IIC T6 Gb	-20° ≤ Ta ≤ +70°	zones 1 and 2
Dampers with preparation for actuator	(not relevant)	II 2G Ex h IIC T6 Gb	-20° ≤ Ta ≤ +70°	zones 1 and 2
Dampers with actuator	SCHISCHEK ExMax-...	II 2G Ex IIC T6 Gb	-20° ≤ Ta ≤ +40°	zones 1 and 2
		II 2G Ex IIC T5 Gb	-20° ≤ Ta ≤ +50°	
		II 2G Ex IIC T4 Gb	-20° ≤ Ta ≤ +60°	
	SCHISCHEK RedMax-...	II 3G Ex IIC T6 Gc	-20° ≤ Ta ≤ +40°	zone 2
		II 3G Ex IIC T5 Gc	-20° ≤ Ta ≤ +50°	
		II 3G Ex IIC T4 Gc	-20° ≤ Ta ≤ +60°	

- Manually operated dampers may only be operated by hand with a smooth movement.
- Dampers for fitting an actuator may only be used with actuators intended to be used in potentially explosive atmospheres of the Ex category corresponding to the Ex category of the damper, and
- angular velocity of the actuator must not exceed 30°/s, or 5 rpm, which satisfies the condition of the ATEX certificate of 1 m/s maximum relative velocity of the moving parts surfaces, and
- the actuator torque shall not exceed the limit shown below.
- For dampers with an actuator (assembly manufactured by the manufacturer), the prescribed parameters of the supply voltage and control voltage and voltage and current on the limit switches must be observed, and
- the motor speed setting, spring mechanism speed and torque setting may only be changed so that the actuator setting is in accordance with this document and

- if the damper is electrically connected directly in areas with a risk of explosion, an Ex terminal block intended for the given zone must be used for the connection, and
- connection of intrinsically safe circuits according to EN 60079-25, and
- all devices connected to the damper must comply the given Ex category.

2. Design

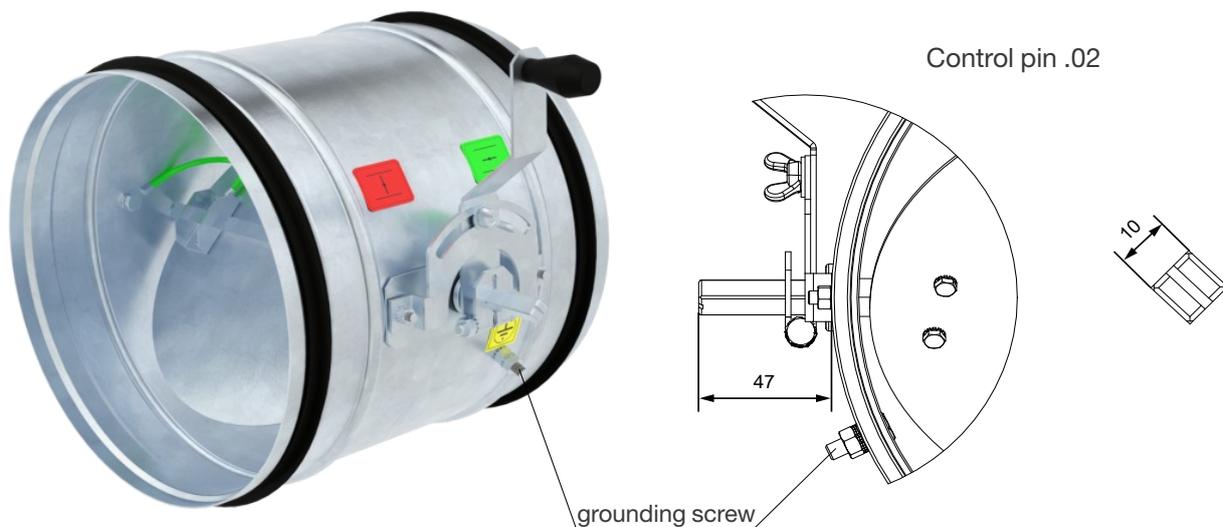
According to manner of attachment:

- on cylindrical piping with flanges according to EN 12 0505
- on spiro piping with edge sealing.

The dampers are manufactured in these design variants intended to be used in potentially explosive atmospheres

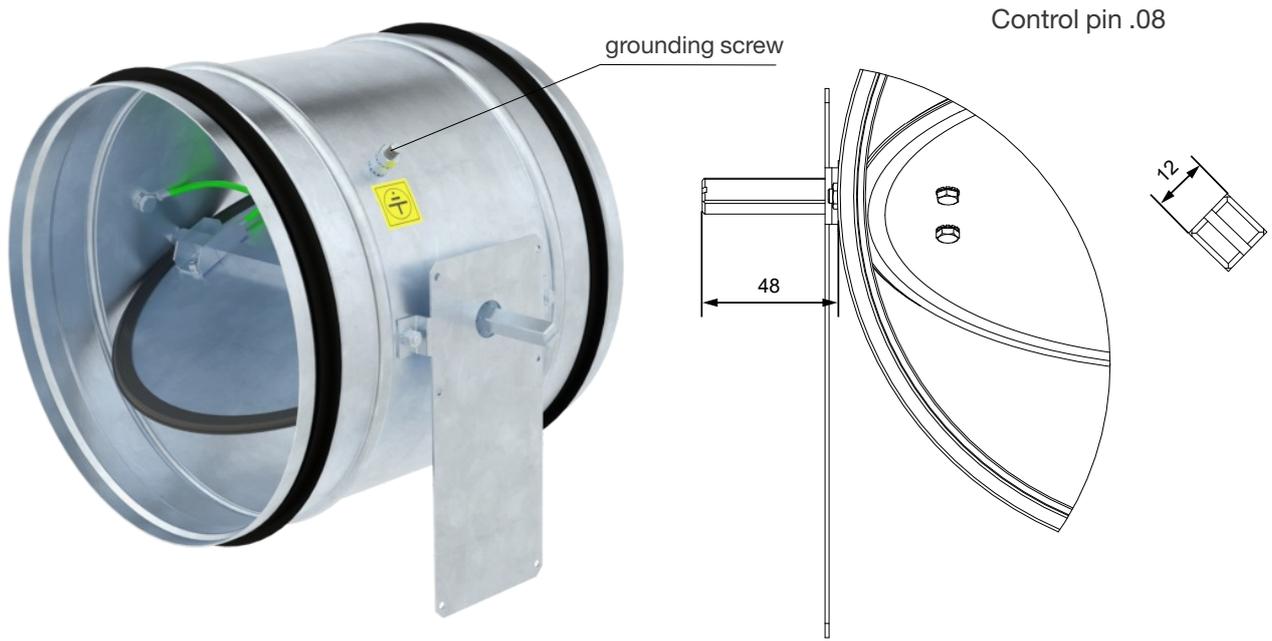
Damper design variant – control type	Design variant ID code in the damper ordering code	
	For zones 1 and 2	For zone 2
manual (zone 1 and 2)	.02	-
for actuator mounting (zone 1 and 2)	.08	-
with actuator, 3-point control	.70	.80
with actuator, 3-point control, limit switches	.71	.81
with actuator, continuous regulation 0...10 V	.71	.82
with actuator, 3-point control, return spring safety position CLOSED	.73	.83
with actuator, 3-point control, return spring safety position OPEN	.73A	.83A
with actuator, 3-point control, return spring safety position CLOSED, limit switches	.74	.84
with actuator, 3-point control, return spring safety position OPEN, limit switches	.74A	.84A
with actuator, continuous regulation 0...10 V, return spring safety position CLOSED	.75	.85
with actuator, continuous regulation 0...10 V, return spring safety position OPEN	.75A	.85A

Design .02 - manual



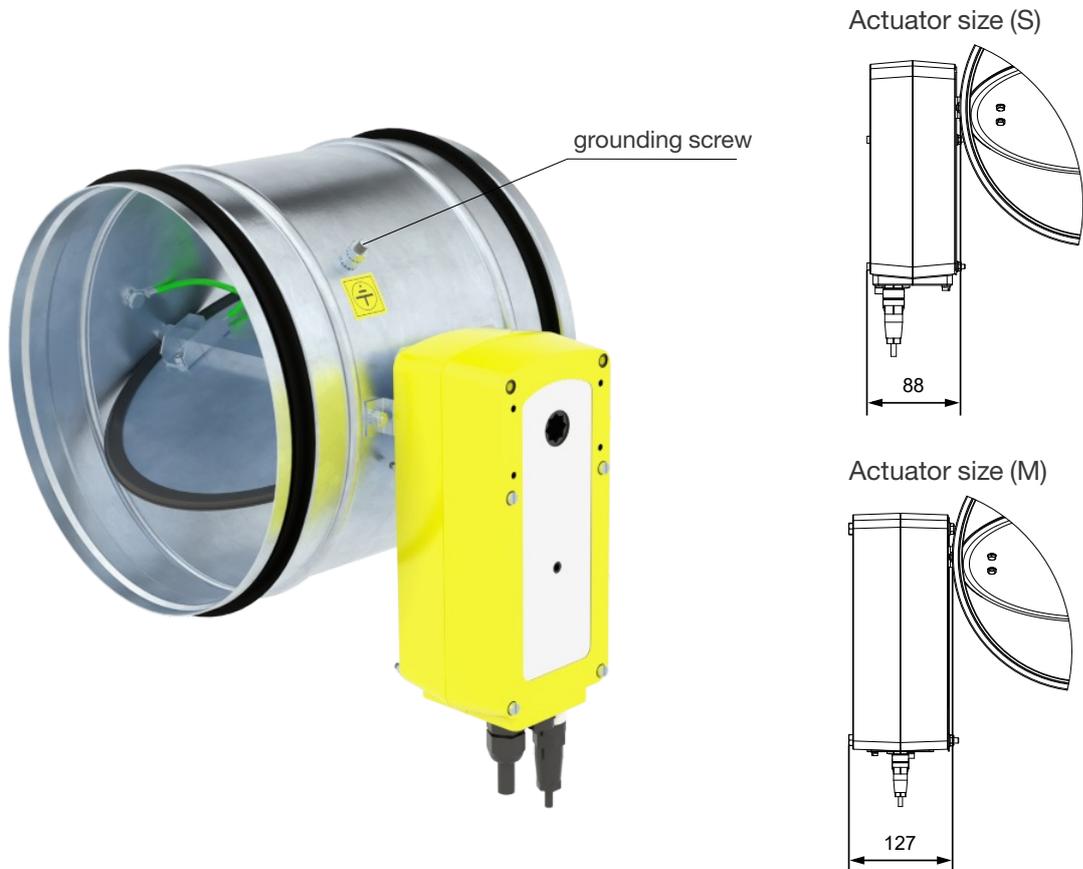
The damper blade is conductively connected to the damper casing (body) using a copper grounding conductor. The minimum space for an actuator is 250 mm (in the direction of the blade rotation axis), but some actuators may require more space.

Design .08 - for fitting an actuator



Design with actuator

In the case of a damper with a SCHISCHEK actuator size M, an adapter from a 12 x 12 pin to a 16 x 16 mm pin is used.



The damper blade is conductively connected to the damper casing (body) using a copper grounding conductor. The minimum space for an actuator is 250 mm (in the direction of the blade rotation axis), but some actuators may require more space.

Grounding wire assembly

The Damper is equipped with one grounding screw M6 x 35 mm on the control side.



3. Technical data

3.1 Actuator torques

Necessary ... the highest permissible torques of actuators for RKKM and RKKTM dampers	
Diameter Ø	Torque (N.m)
80 - 315	5 - 10
355 - 500	10 - 15
500 - 630	15 - 30

3.2 Assignment and setting of actuators SCHISCHEK ExMax-... and RedMax...

Types of actuators manufactured by SCHISCHEK						
Damper design assemblies)	Actuator type	Actuator size	Torque	Return spring	Limit switches	Continuous regulation 0...10 V
.70	ExMax-5.10	S	5/10 Nm	no	no	no
	ExMax-15.30	S	15/30 Nm	no	no	no
	ExMax-50.75	M	50/75 Nm	no	no	no
.71	ExMax-5.10-S	S	5/10 Nm	no	yes	no
	ExMax-15.30-S	S	15/30 Nm	no	yes	no
.72	ExMax-5.10-Y	S	5/10 Nm	no	no	yes
	ExMax-15.30-Y	S	15/30 Nm	no	no	yes
	ExMax-50.75-Y	M	50/75 Nm	no	no	yes
.73 .73A	ExMax-5.10-F	S	5/10 Nm	yes	no	no
	ExMax-15-F	S	15 Nm	yes	no	no
	ExMax-30-F	M	30 Nm	yes	no	no
	ExMax-50-F	M	50 Nm	yes	no	no
.74 .74A	ExMax-5.10-SF	S	5/10 Nm	yes	yes	no
	ExMax-15-SF	S	15 Nm	yes	yes	no
	ExMax-30-SF	M	30 Nm	yes	yes	no
	ExMax-50-SF	M	50 Nm	yes	yes	no
.75 .75A	ExMax-5.10-YF	S	5/10 Nm	yes	no	yes
	ExMax-15-YF	S	15 Nm	yes	no	yes
	ExMax-30-YF	M	30 Nm	yes	no	yes
	ExMax-50-YF	M	50 Nm	yes	no	yes
.80	RedMax-5.10	S	5/10 Nm	no	no	no
	RedMax-15.30	S	15/30 Nm	no	no	no
	RedMax-50.75	M	50/75 Nm	no	no	no
.81	RedMax-5.10-S	S	5/10 Nm	no	yes	no
	RedMax-15.30-S	S	15/30 Nm	no	yes	no
.82	RedMax-5.10-Y	S	5/10 Nm	no	no	yes
	RedMax-15.30-Y	S	15/30 Nm	no	no	yes
	RedMax-50.75-Y	M	50/75 Nm	no	no	yes
.83 .83A	RedMax-5.10-F	S	5/10 Nm	yes	no	no
	RedMax-15-F	S	15 Nm	yes	no	no
	RedMax-30-F	M	30 Nm	yes	no	no
	RedMax-50-F	M	50 Nm	yes	no	no
.84 .84A	RedMax-5.10-SF	S	5/10 Nm	yes	yes	no
	RedMax-15-SF	S	15 Nm	yes	yes	no
	RedMax-30-SF	M	30 Nm	yes	yes	no

Types of actuators manufactured by SCHISCHEK						
Damper design assemblies)	Actuator type	Actuator size	Torque	Return spring	Limit switches	Continuous regulation 0...10 V
.84 .84A	RedMax-50-SF	M	50 Nm	yes	yes	no
.85 .85A	RedMax-5.10-YF	S	5/10 Nm	yes	no	yes
	RedMax-15-YF	S	15 Nm	yes	no	yes
	RedMax-30-YF	M	30 Nm	yes	no	yes
	RedMax-50-YF	M	50 Nm	yes	no	yes

Possible types and prescribed settings of actuators for dampers of types RKKM and RKKTM equipped with actuators									
Designation in the table below	Allowed actuator types	Allowed torque settings	Forbidden torque settings	Allowed motor speed settings	Forbidden motor speed settings	Allowed spring speed settings (if the actuator is equipped with one)	Forbidden spring speed settings	Allowed switch positions	Forbidden switch positions
5	ExMax-5.10...(S) RedMax-5.10...(S)	5 Nm	10 Nm	15/30/60/120 s	3 s	10 s	3 s	01, 02, 03, 04	00, 05, 06, 07, 08, 09
5-10	ExMax-5.10...(S) RedMax-5.10...(S)	5/10 Nm	-	15/30/60/120 s	3 s	10 s	3 s	01, 02, 03, 04, 06, 07, 08, 09"	00, 05
10-15	ExMax-5.10...(S) RedMax-5.10...(S)	10 Nm	5 Nm	15/30/60/120 s	3 s	10 s	3 s	06, 07, 08, 09	00, 01, 02, 03, 04, 05
	ExMax-15.30...(S) RedMax-15.30...(S)	15 Nm	30 Nm					01, 02, 03, 04	00, 05, 06, 07, 08, 09
	ExMax-15...(S) RedMax-15...(S)		-					01, 02, 03, 04, 06, 07, 08, 09	00, 05
15-30	ExMax-15.30...(S) RedMax-15.30...(S)	15/30 Nm	-	15/30/60/120 s	3 s	10 s	3 s	01, 02, 03, 04, 06, 07, 08, 09	00, 05
	ExMax-15... (S) RedMax-15... (S)	15 Nm		40/60/90/120/150 s	-	20 s	-		
	ExMax-30-YF (M) RedMax-30-YF (M)	30 Nm							
30	ExMax-15.30... (S) RedMax-15.30...(S)	30 Nm	15 Nm	15/30/60/120 s	3 s	10 s	3 s	06, 07, 08, 09	00, 01, 02, 03, 04, 05
	ExMax-30-YF (M) RedMax-30-YF (M)		-	40/60/90/120/150 s	-	20 s	-	00, 01, 02, 03, 04, 05, 06, 07, 08, 09	-

Possible types and prescribed settings of actuators for dampers of types RKKM and RKKTM equipped with actuators									
Designation in the table below	Allowed actuator types	Allowed torque settings	Forbidden torque settings	Allowed motor speed settings	Forbidden motor speed settings	Allowed spring speed settings (if the actuator is equipped with one)	Forbidden spring speed settings	Allowed switch positions	Forbidden switch positions
30-50	ExMax-15.30...(S) RedMax-15.30...(S)	30 Nm	15 Nm	15/30/60/120 s	3 s	10 s	3 s	06, 07, 08, 09	00, 01, 02, 03, 04, 05
	ExMax-30-YF (M) RedMax-30-YF (M)		-	40/60/90/120/150 s	-	-	-	00, 01, 02, 03, 04, 06, 07, 08, 09	-
	ExMax-50.75...(M) RedMax-50.75...(M)	50 Nm	75 Nm	40/60/90/120/150 s	-	20 s	-	00, 01, 02, 03, 04	05, 06, 07, 08, 09
	ExMax-50...(M) RedMax-50...(M)		-					00, 01, 02, 03, 04, 05, 06, 07, 08, 09	-

Blue - default setting

(S), (M) - actuator size

Assignment of actuators to RKKM and RKKTM damper sizes	
Diameter Ø	Actuator in table above
80 - 315	5 - 10
355 - 500	10 - 15
500 - 630	15 - 30

3.3 The maximum pressure difference and the speed of the air flow

Table 1. The maximum pressure difference and the speed of the air flow

Size	Max. Pressure difference Δp (Pa)	Maximum speed of air flow w_{max} (m/s ⁻¹)
80	1500	12
100	1500	12
110	1500	12
125	1500	12
140	1500	12
150*	1500	12
160	1500	12
180	1500	12
200	1500	12
225	1500	12
250	1500	12
280	1500	12
300	1500	12

Size	Max. Pressure difference Δp (Pa)	Maximum speed of air flow w_{max} (m/s ⁻¹)
310*	1500	12
315	1500	12
355	1500	12
400	1200	10
450	1200	10
500	1200	10
560	1000	10
630	1000	10

*This version manufactured only on spiro piping.

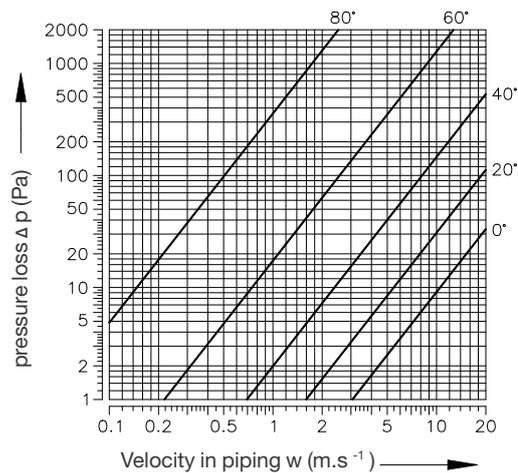
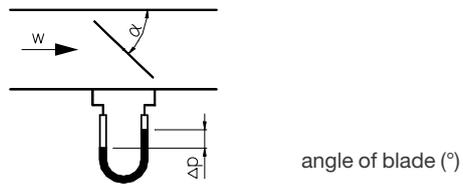
4. Pressure losses

V (m³ .h⁻¹) - volumetric air flow

w (m.s⁻¹) - flow speed

Δp (Pa) - pressure loss when $\rho = 1,2$ kg.m⁻³

α (°) - angle of flap blade



5. Noise data

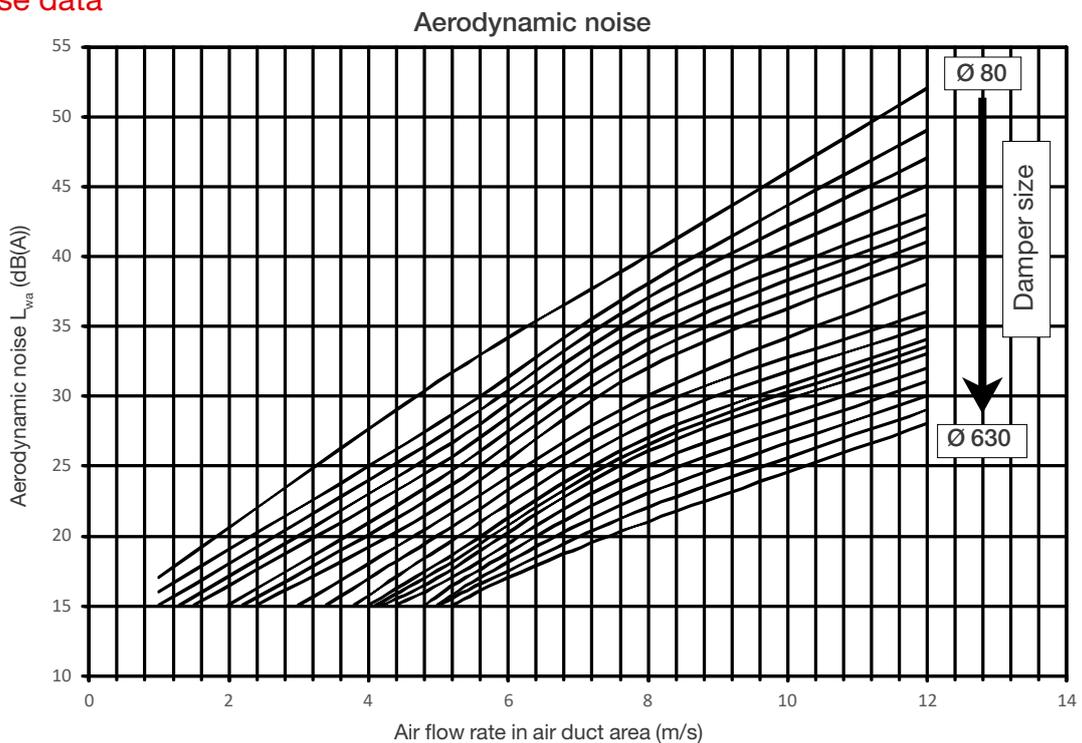


Table 2. Aerodynamic noise

Nominal size	V (m/s)	L _{wa} (dB(a))	Nominal size	V (m/s)	L _{wa} (dB(a))	Nominal size	V (m/s)	L _{wa} (dB(a))
80	1	17	200	2,4	15	400	4,4	15
	5	31		5	22		5,2	17
	8	40		8	32		8	25
	12	52		12	40		12	32
100	1	16	225	3	15	450	4,8	15
	5	28		5	21		5,4	17
	8	38		8	30		8	24
	12	49		12	38		12	31
110	1	15	250	3,4	15	500	5	15
	5	27		5	20		5,6	17
	8	37		8	29		8	23
	12	47		12	36		12	30
125	1,3	15	280	3,8	15	560	5	15
	5	26		5	19		5,8	17
	8	36		8	28		8	22
	12	45		12	35		12	29
140	1,5	15	300	4	15	630	5,2	15
	5	25		5	18		6	17
	8	35		8	27		8	21
	12	43		12	34		12	28
160	2	15	315	4,1	15			
	5	23		5	18			
	8	33		8	27			
	12	41		12	34			
180	2,2	15	355	4,2	15			
	5	23		5	17			
	8	33		8	26			
	12	41		12	33			

6. Dimensions and weights

6.1 Damper for connecting to cylindrical piping

Table 3. Dimensions, weights and effective area

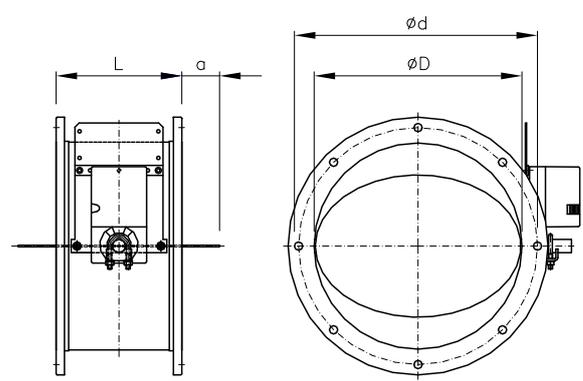
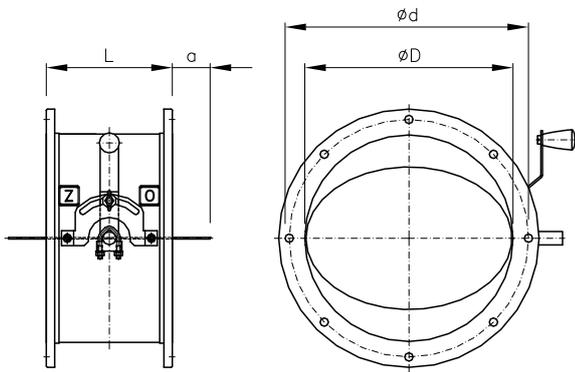
Size Ø D	Dimensions			Number of holes n	Effective area S _{ef} (m ²)	Weight (kg)
	L	a	Ø d			
80	150	-	110	4	0,0047	0,92
100	150	-	130	4	0,0074	1,07
110	150	-	140	4	0,0090	1,22
125	150	-	155	8	0,0117	1,39
140	150	-	170	8	0,0147	1,54
160	150	-	195	8	0,0194	1,88
180	150	10	215	8	0,0246	2,23
200	150	20	235	8	0,0305	2,51
225	150	32,5	260	8	0,0387	2,86
250	150	45	285	8	0,0479	3,23
280	150	60	315	8	0,0603	3,66

Size Ø D	Dimensions			Number of holes n	Effective area S_{ef} (m ²)	Weight (kg)
	L	a	Ø d			
300	150	70	335	12	0,0693	4,01
315	150	77,5	350	12	0,0765	4,27
355	150	97,5	390	12	0,0973	4,95
400	200	95	445	12	0,1238	6,75
450	200	120	495	12	0,1569	7,80
500	200	145	545	16	0,1940	9,00
560	200	175	605	16	0,2437	10,40
600	200	210	680	16	0,3088	12,80

Damper for connecting to cylindrical piping with flanges according to EN 12 0505.

Damper with manual control mechanism

Damper with control by actuating

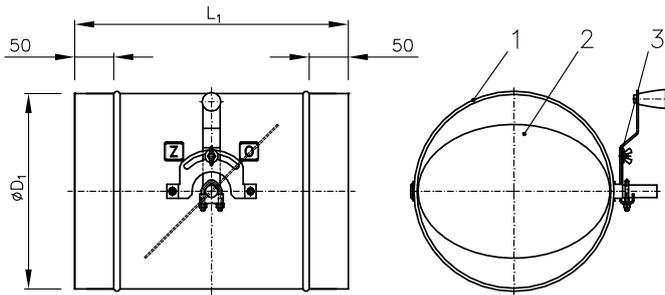


6.2 Damper for connecting to spiro

Table 4. Dimensions, weights and effective area

Size Ø D	Dimensions			Number of holes n	Effective area S_{ef} (m ²)	Weight (kg)
	L	a	Ø d			
80	150	-	110	4	0,0047	0,92
100	150	-	130	4	0,0074	1,07
110	150	-	140	4	0,0090	1,22
125	150	-	155	8	0,0117	1,39
140	150	-	170	8	0,0147	1,54
160	150	-	195	8	0,0194	1,88
180	150	10	215	8	0,0246	2,23
200	150	20	235	8	0,0305	2,51
225	150	32,5	260	8	0,0387	2,86
250	150	45	285	8	0,0479	3,23
280	150	60	315	8	0,0603	3,66
300	150	70	335	12	0,0693	4,01
315	150	77,5	350	12	0,0765	4,27
355	150	97,5	390	12	0,0973	4,95
400	200	95	445	12	0,1238	6,75
450	200	120	495	12	0,1569	7,80
500	200	145	545	16	0,1940	9,00
560	200	175	605	16	0,2437	10,40
630	200	210	680	16	0,3088	12,80

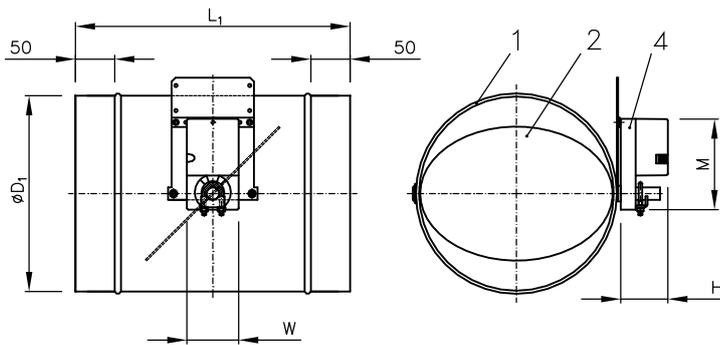
Damper with manual control mechanism



Position:

- 1- Body of control damper
- 2- Sealing leaf of damper
- 3- Control lever

Damper with control by actuating



Position:

- 1- Body of control damper
- 2- Sealing leaf of damper
- 3- Control lever
- 4- Actuator

Dampers with actuator are set up by rectangular pin 10 mm.

Effective area in Table 3. and Table 4. valid for fully opened damper Sef (m2).

Open blade exceeds the damper body on both sides of value "a".

The weights listed in the table are valid for the basic version (manually controlled). The weight of the servo actuator must be added to all other versions.

Atypical dimensions the circular regulation dampers are not manufactured.

7. Placement and installation

When positioning the dampers in piping, it is necessary to respect the value “a” (overlap of open leaf). The value “a” is listed in the Table 3. and Table 4.

8. Materials, surface treatment

The body of the damper and the leaf are made of galvanized sheet; the leaf's journals are of steel.

Along its circumference, the leaf is fitted with a silicon seal. Design on spiro piping is supplied with a rubber lip seal.

According to the customer's requirements, damper can be made of stainless material.

Specifications for stainless-steel models – classification of stainless steel:

- Class A2 – Food-grade stainless steel (AISI 304)
- Class A4 – Chemistry-grade stainless steel (AISI 316, 316L)

The indicated metal is used for all metal components of the damper except the servo drive and its adapters. The following components, including the fasteners, are made from stainless steel at all times:

- Damper body and all components permanently attached
- Leaf pins, metal components of the leaf
- Controlling components outside the damper (levers, control levers, metal part of the pin or the entire pin)
- Servo drive mount

Plastic, rubber and silicon components, sealants, servo drives, and end switches are identical for all material variants of the dampers.

Some fasteners and components are available in one class of stainless steel; the type will be used in all stainless-steel variants.

Any other requirements for the design shall be considered atypical and shall be addressed on an individual basis.

The damper is delivered without further surface treatment.

It is not possible to deliver damper with protected by a paint.

In the case of dampers with the actuator, the actuator cover is:

- as standard made of aluminum alloy, painted, or
- in the case of a special customer request:

made of aluminum alloy painted with seawater-resistant paint with nickel-plated brass cable glands (actuator ...-CTS, or -CTM), or

made of AISI 316 stainless steel with nickel-plated brass cable glands (actuator ...-VAS, or ...-VAM).

9. Packing, transport, storage, assembly

The damper are transported as bulk cargo, using suitable covered means of transport. When agreed upon with the manufacturer, the dampers can be loaded onto palettes. Dampers must be protected from mechanical damage during transport and storage.

If packing is used, it is non-returnable and its price is not included in the price of the damper.

If not otherwise agreed, the handover is considered when the goods is forwarded to the carrier.

The dampers must be stored in the indoor environment without any aggressive vapours, gases or dust. Indoor temperature must be in the range from -5°C to +40°C and maximum relative humidity 80%. Dampers must be protected against mechanic damages when transported and manipulated.

The delivery includes a complete damper including the control mechanism.

The assembly consists of installing the damper in the air distribution system and if required, connecting the actuating mechanism to the electric net. Connection of the actuating mechanism to the electric net can be done only by trained person.

10. Quality inspection, testing by the manufacturer

The dimensions are checked with common measuring devices according to the standard of non-tolerated dimensions used in HVAC.

Interoperation checks of parts and main dimensions are carried out according to the manufacturing documentation.

The final control includes:

- control of damper opening and closing, and
- checking the electrical connection of damper blade with the damper body using an electrical detection device.

The damper assembly with the actuator is connected to voltage, the extreme working positions are defined and the operation of the damper and the function of the limit switches (if included) are tested.

11. Installation, commissioning, operation, maintenance, operational checks

The installation consists of:

- installation of the damper in the air duct
- grounding and conductive connection with the neighbour duct pieces
- eventually, installation of the actuator (not part of the damper)
- or for the electrical connection of the actuator (in the case of a damper with an actuator).

All effective safety standards and directives must be observed during damper assembly.

The dampers must be earthed with an M6 earthing screw, using a nut and a spring washer (these parts are included in the delivery of the damper).

According to EN 332000-4-41,-4-47 and -5-54, flange connections must be conductively connected during the installation to protect against dangerous contact. For the conductive connection, 2 pcs of spring washers in galvanized design are used, which are placed under the head of one screw and under the screwed-on nut.

Before putting the dampers into operation, it is necessary to perform a visual check of the correct installation of the damper and a check of the interconnection of all metal components.

In the case of subsequent mounting of the damper with an actuator, it is necessary:

- verify that the speed and torque of the actuator are in accordance with this document
- adjust the limit positions of the actuator and
- check that the actuator cannot be released from the holder and that the damper control pin cannot slip.

In the case of a damper with manual control, it is necessary to check the smooth operation of the damper.

In the case of a damper with a actuator, it is necessary to connect the actuator electrically and test the operation of the damper. **If the electrical connection of the damper is located in an area with a risk of explosion, it is necessary to use an Ex terminal block corresponding to the given zone.** For actuators with return spring the electrical connection must correspond to the permitted spring closing time.

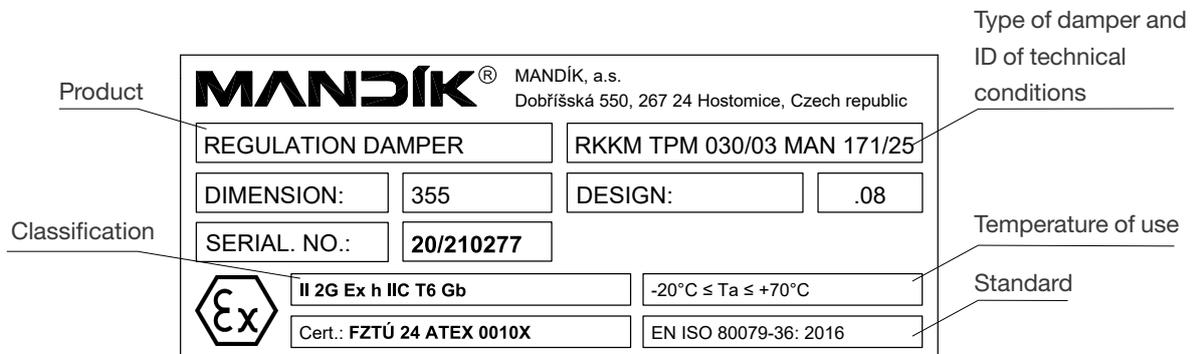
During operability checks, it is necessary to check the mutual conductive connection of all metal components, including damper blade with the damper body (casing) of the damper. The grounding damper blade needs to be checked using an electrical measuring or detection device:

- during commissioning
- as part of every inspection, maintenance, as well as every possible repair or other intervention on the damper
- at the latest after 1 year from commissioning
- if no blade grounding defect is found after 1 year from commissioning, then periodically at least every 5 years thereafter, otherwise annually.

12. Damper identification

The dampers are equipped with a durable identification label. It contains the following information:

- manufacturer’s logo
- name and address of the manufacturer
- product type and design varian
- size and weight
- serial number and year of manufacture
- number of the technical specifications
- number of the instructions for use
- Ex device category
- Ex certificate number
- sign Ex.



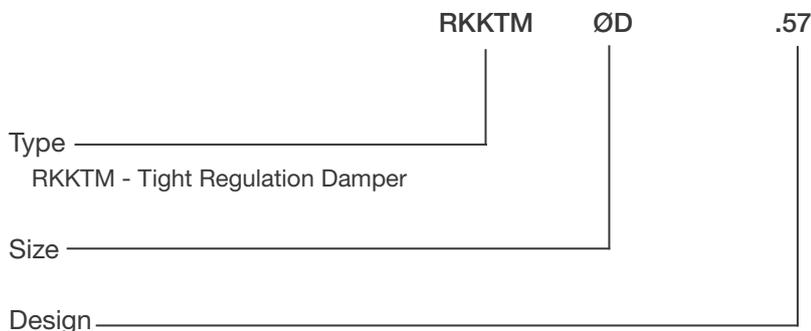
In the case of a damper equipped with an actuator, the assembly is additionally marked with an assembly label containing:

- manufacturer’s logo
- statement that it is a damper and actuator assembly
- type, size and design number of the assembly (the name of the assembly type is identical to the name of the damper type)
- manufacturer and type of actuator
- weight of assembly
- information that changing the actuator settings is only permitted in accordance with MAN 171/25
- Ex category device (assemblies)
- sign Ex.

This assembly label is located near the damper identification label (example)

MANDÍK ® Damper and actuator assembly		
Type, size and design:	RKKM 355 .70	
Actuator:	SCHISCHEK ExMax-5.10-CTS	
Assembly weight:	12,7 kg	Instructions for use: MAN 171/25
Device category:	II 2G Ex IIC T6 Gb	-20°C ≤ Ta ≤ +40°C
	II 2G Ex IIC T5 Gb	-20°C ≤ Ta ≤ +50°C
	II 2G Ex IIC T4 Gb	-20°C ≤ Ta ≤ +60°C
		
Changing the actuator or changing its settings is permitted only in accordance with the Instructions for use.		

13. Product marking



Example: RKKTM 315 .01



ETS NORD AS

Address: Peterburi tee 53
11415 Tallinn
Estonia
Phone: +372 680 7365
info@etsnord.ee
www.etsnord.ee

ETS NORD Finland

Address: Pakkasraitti 4
04360 Tuusula
Finland
Phone: +358 401 842 842
info@etsnord.fi
www.etsnord.fi

ETS NORD Sweden

Address: Järsjögatan 7
69235 Kumla
Sweden
Phone: +46 19 554 20 50

Address: Pinjegatan 5
21363 Malmö
Sweden
Phone: +46 40-94 68 70
info@etsnord.se
www.etsnord.se

ETS NORD International

info@etsnord.com
www.etsnord.com



Let's move the air together!