Explosion proof.
Safety for all Control Systems.

Technical
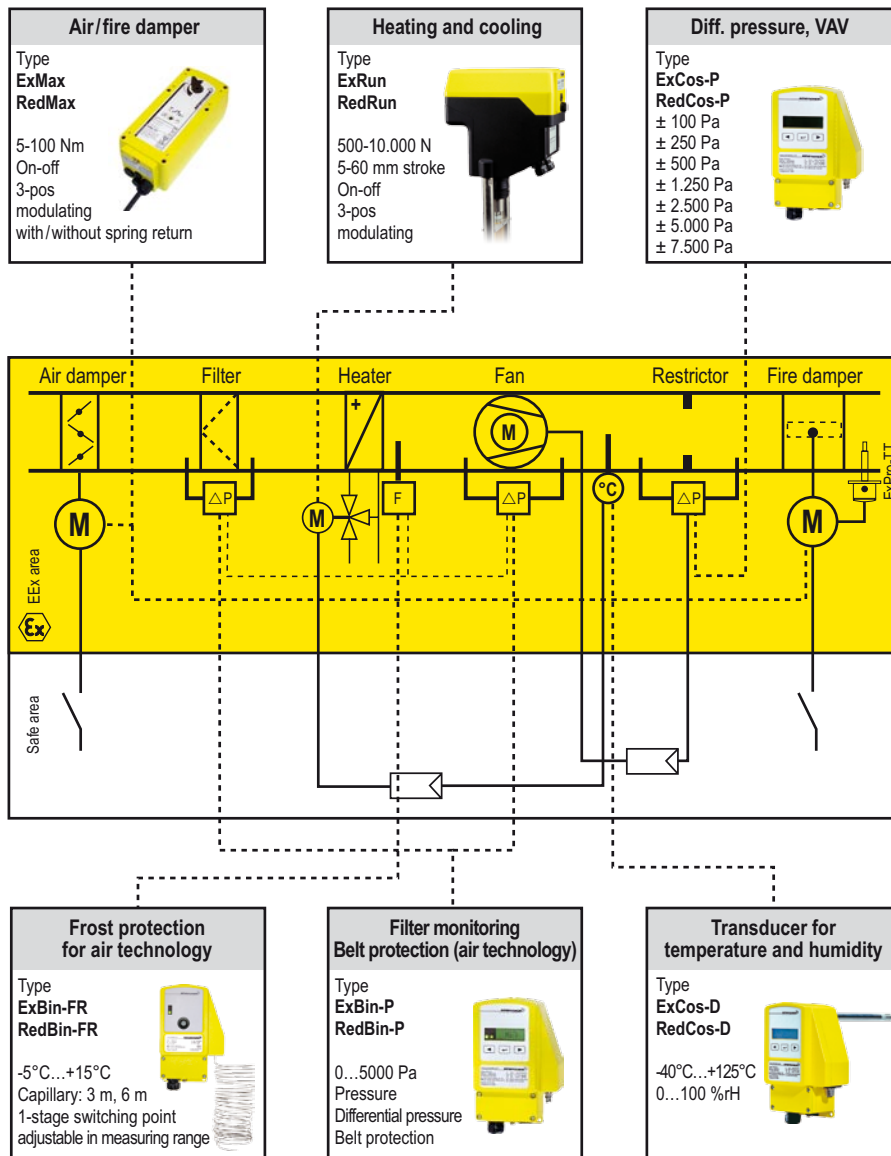Short information
2008

Which components
have to be explosion proof?

In the diagram below, a typical air-handling system shows which equipment is allowed in the Ex area and which should only be placed in the safe area. The diagram does not enforce the claim to be complete. If in doubt, please do not hesitate to consult us at Schischek. We will advise you in any case. A brief discussion in the early stages of planning can avoid substantial costs in remedial work later and gives you the peace of mind that you have a safely installed operating system.

You should be aware of the areas of installation where an explosive atmosphere may build up.

Furthermore, you should have the responsible authority classify the relevant Ex zone and in combination with type and condition of the explosive medium, you should be able to select suitable explosion proof equipment.

With Schischek products this is simple because all equipment is certified according to the highest safety standards – according to ATEX, of course!

Actuators for air technology

Actuators for liquids

Measurement and control

Air / fire damper
Type
ExMax
RedMax

5-100 Nm
On-off
3-pos
modulating
with / without spring return

Heating and cooling
Type
ExRun
RedRun

500-10.000 N
5-60 mm stroke
On-off
3-pos
modulating

Diff. pressure, VAV
Type
ExCos-P
RedCos-P
± 100 Pa
± 250 Pa
± 500 Pa
± 1.250 Pa
± 2.500 Pa
± 5.000 Pa
± 7.500 Pa

Air damper | Filter | Heater | Fan | Restrictor | Fire damper

EEx area

Safe area

ExPro-TT

Frost protection
for air technology
Type
ExBin-FR
RedBin-FR

-5°C…+15°C
Capillary: 3 m, 6 m
1-stage switching point
adjustable in measuring range

Filter monitoring
Belt protection (air technology)
Type
ExBin-P
RedBin-P

0…5000 Pa
Pressure
Differential pressure
Belt protection

Transducer for
temperature and humidity
Type
ExCos-D
RedCos-D

-40°C…+125°C
0…100 %rH

Table of contents

Product series					page	gas 0	dust 20	gas 1	dust 21	gas 2	dust 22	SA*
Ex - quarter turn actuators 90°												
ExMax size	„S"	5…	30 Nm	with/without spring return	04			●	●	●	●	
ExMax size	„M"	30…	100 Nm	with/without spring return	05			●	●	●	●	
RedMax size	„S"	5…	30 Nm	with/without spring return	06					●	●	
RedMax size	„M"	30…	100 Nm	with/without spring return	07					●	●	
InMax size	„S"	5…	30 Nm	with/without spring return (not Ex)	08							●
InMax size	„M"	30…	100 Nm	with/without spring return (not Ex)	09							●
Ex - valve actuators 5...60 mm stroke												
ExRun size	„S"	500…	10.000 N	without spring return	10			●	●	●	●	
RedRun size	„S"	500…	10.000 N	without spring return	10					●	●	
InRun size	„S"	500…	10.000 N	without spring return (not Ex)	10-11							●
Ex - long stroke linear motion actuators 100...300 mm stroke												
ExPlus		300…	3.000 N	without spring return	12			●	●	●	●	
RedPlus		300…	3.000 N	without spring return	12					●	●	
InPlus		300…	3.000 N	without spring return (not Ex)	12-13							●
Ex - sensors, modulating (temperature, humidity, pressure)												
Overview sensors					14							
ExCos-P differential pressure, VAV sensors ± 100… 7.500 Pa					15			●	●	●	●	
RedCos-P differential pressure, VAV sensors ± 100… 7.500 Pa					15					●	●	
InCos-P differential pressure, VAV sensors ± 100… 7.500 Pa (not Ex)					15							●
ExCos-D temperature- and humidity transducer for ExPro sensors					16			●	●	●	●	
RedCos-D temperature- and humidity transducer for ExPro sensors					16					●	●	
InCos-D temperature- and humidity transducer for InPro sensors (not Ex)					16							●
ExPro temperature- and humidity sensors for HVAC-systems					17			●	●	●	●	
InPro temperature- and humidity sensors for HVAC-systems (not Ex)					17							●
ExCos-A transducer for passive, potential free, modulating ExSens sensors					18			●	●	●	●	
RedCos-A transducer for passive, potential free, modulating ExSens sensors					18					●	●	
InCos-A transducer for passive, potential free, modulating ExSens sensors (not Ex)					18							●
ExLine transducer for passive, potential free, modulating ExSens sensors					19							●
ExSens modulating, passive temperature-/humidity-/pressure sensors					19	(●)	(●)	●	(●)	●	●	
Ex - sensors, binary (temperature, humidity, pressure)												
ExLine switching module for passive, potential free, binary ExSens sensors					20							●
ExSens binary, passive temperature-/humidity-/pressure sensors					20	(●)	(●)	●	(●)	●	●	
Ex - door holder magnets												
ExMag, door holder magnets with 650, 1.300, 2.000 N force					21			●	●	●	●	
Ex - components												
ExComp different Ex-components, e.g. switches, buttons, …					21			●	●	●	●	
General terms and conditions					22							
Explosion Proof according to ATEX 94/9/EC												
Legal bases and basic information					23							
Selection table Ex-nomenclature					24							
Basics					25-26							
Applications					27							

Installation areas in zone

*SA = Safe area
(●) = on request

SCHISCHEK
EXPLOSIONPROOF

ExMax 90° Ex quarter turn actuators size „S" for zone 1, 2, 21, 22

Explosion proof	Features of ExMax - ... size „S"

ExMax- ...	Size „S"	Description	Basics for all ExMax-.. size „S"
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2G EEx d ia IIC T6 II2D IP66 T80°C ATEX 94/9/EC IEC-Ex		ExMax are, in acc. with type, for automation of air dampers, fire and smoke dampers, volume control, as well as for ball valves, throttle valves and other quarter turn armatures. **Delivery:** 1 actuator, ~ 1 m cable, allen key for manual override, 4 screws.	**24…230 VAC/DC** self adaptable power supply Up to 5 different running times adjustable on site 95°angle of rotation (5° for pretention), 100% overload protected, aluminium housing IP 66, cable ~ 1 m -40...+40°C / +50°C, integrated heater, Simple manual override Squared shaft connection 12 × 12 mm Dimensions (L × W × D) 210 × 95 × 80 mm

Ex-d quarter turn actuators without spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
ExMax - 5.10	5 Nm / 10 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	-	S
ExMax - 15.30	15 Nm / 30 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	-	S
ExMax - 5.10 - S	5 Nm / 10 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	2 x EPU (2 aux. switches @ 5° and 85°)	S
ExMax - 15.30 - S	15 Nm / 30 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	2 x EPU (2 aux. switches @ 5° and 85°)	S
ExMax - 5.10 - Y	5 Nm / 10 Nm	7,5/15/30/60/120 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
ExMax - 15.30 - Y	15 Nm / 30 Nm	7,5/15/30/60/120 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S

Ex-d quarter turn actuators with spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
ExMax - 5.10 - F	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	-	S
ExMax - 15 - F	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	-	S
ExMax - 5.10 - SF	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
ExMax - 15 - SF	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
ExMax - 5.10 - YF	5 Nm / 10 Nm	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
ExMax - 15 - YF	15 Nm	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
ExMax - 5.10 - BF	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	S
ExMax - 15 - BF	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	S

Ex-d quarter turn actuators with 3 sec. spring return for Offshore application, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
ExMax - 15 - F3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	-	S
ExMax - 15 - SF3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
ExMax - 15 - BF3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	S

Accessories (additional price)

Type	Technical data
ExMax-...VAS	Size „S", housing material in stainless steel AISI 316, some parts nickel plated
ExMax-...CTS	Size „S", aluminium housing Amercoat painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
ExSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, adaptable to ExMax-... actuators
ExBox-3P	Ex-e terminal box connectable to ExMax-... actuators with 1 cable for On-off or 3-pos operation
ExBox-3P/SW	Ex-e terminal box connectable to ExMax-... actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type ExSwitch
ExBox-Y/S	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating operation or 3-pos + integr. switches (HS)
ExBox-Y/S/SW	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
ExBox-BF	Ex-e terminal box connectable to ExMax-... actuators with 1 cable, for all ExMax-...-BF
ExBox-.../VA	Ex-e terminal-box, housing made of stainless-steel type AISI 316 L, some parts nickel plated, surcharge on aluminium version
ExBox-.../CT	Ex-e terminal-box, housing AMERCOAT painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated, surcharge on aluminium version
MKK-S	Mounting bracket for ...Box-terminal boxes for direct coupling to ...Max... actuators size „S"
MKK-S/VA	Mounting bracket, made of stainless-steel suitable for ExBox...VA
KB-S	Mounting clamp for round damper shaft Ø 10 to 20 mm and squared shafts 10 to 16 mm, incl. bracket, connectable to all ExMax-... size „S"
HV-SK, HV-SL	Manual override, connectable to ...Max-... actuators size „S". HV-SK=short version, HV-SL=long version for add. mounting of ...Box/Switch
AR-12-xx	Squared reduction part from 12x12 mm to shafts with 11mm (type AR-12-11), 10 mm (type AR-12-10), 8 mm (type AR-12-08)
D-F-...S	Adaptation with flange acc. to DIN EN 5211 for butterfly or ball-valves suitable for size „S"
FireSafe	Safety temperature trigger for fire dampers, switching at 72°C, with electrical connector, only connectable to ...Max-...-BF actuators !

ExMax 90° Ex quarter turn actuators size „M" for zone 1, 2, 21, 22

Explosion proof	Features of ExMax - ... size „M"		
ExMax- ...	**Size „M"**	**Description**	**Basics for all ExMax-.. size „M"**
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2G EEx d ia IIC T6 II2D IP66 T80°C ATEX 94/9/EC		ExMax are, in acc. with type, for automation of air dampers, fire and smoke dampers, volume control, as well as for ball valves, throttle valves and other quarter turn armatures. **Delivery:** 1 actuator, ~ 1 m cable, allen key for manual override, 4 screws.	24…230 VAC/DC self adaptable power supply Up to 5 different running times adjustable on site 95°angle of rotation (5° for pretention), 100% overload protected, aluminium housing IP 66, cable ~ 1 m -40...+40°C / +50°C, integrated heater, Simple manual override Squared shaft connection 16 × 16 mm Dimensions (L × W × D) 287 × 149 × 116 mm

Ex-d quarter turn actuators without spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
ExMax - 50.75	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	-	M
ExMax - 100	100 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	-	M
ExMax - 50.75 - S	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° at 85°)	M
ExMax - 100 - S	100 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° at 85°)	M
ExMax - 50.75 - Y	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
ExMax - 100 - Y	100 Nm	40/60/90/120/150 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M

Ex-d quarter turn actuators with spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
ExMax - 30 - F	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	-	M
ExMax - 50 - F	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	-	M
ExMax - 30 - SF	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° at 85°)	M
ExMax - 50 - SF	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° at 85°)	M
ExMax - 30 - YF	30 Nm	40/60/90/120/150 sec.	~20 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
ExMax - 50 - YF	50 Nm	40/60/90/120/150 sec.	~20 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
ExMax - 30 - BF	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M
ExMax - 50 - BF	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M

Ex-d quarter turn actuators with 3 sec. spring return for Offshore application, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
ExMax - 30 - F3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	-	M
ExMax - 50 - F3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	-	M
ExMax - 30 - SF3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° at 85°)	M
ExMax - 50 - SF3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° at 85°)	M
ExMax - 30 - BF3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M
ExMax - 50 - BF3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M

Accessories (additional price)

Type	Technical data
ExMax-...-CTM	Size „M", aluminium housing Amercoat painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
ExSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, adaptable to ExMax-... actuators
ExBox-3P	Ex-e terminal box connectable to ExMax-…actuators with 1 cable for On-off or 3-pos operation
ExBox-3P/SW	Ex-e terminal box connectable to ExMax-…actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type ExSwitch
ExBox-Y/S	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating operation or 3-pos + integr. switches (HS)
ExBox-Y/S/SW	Ex-e terminal box connectable to ExMax-…actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
ExBox-BF	Ex-e terminal box connectable to ExMax-…actuators with 1 cable, for all ExMax-...-BF
ExBox-…/CT	Ex-e terminal-box, housing AMERCOAT painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated, surcharge on aluminium version
MKK-M	Mounting bracket for …Box-terminal boxes for direct coupling to …Max... actuators size „M"
HV-MK, HV-ML	Manual override, connectable to …Max-…actuators size „M". HV-MK=short version, HV-ML=long version for add. mounting of ...Box/Switch
AR-16-xx	Squared reduction part from 16x16 mm to shafts with 14mm (type AR-16-14), 12 mm (type AR-16-12)
D-F-…M	Adaptation with flange acc. to DIN EN 5211 for butterfly or ball-valves suitable for size „M"
FireSafe	Safety temperature trigger for fire dampers, switching at 72°C, with electrical connector, only connectable to …Max-…-BF actuators!

RedMax 90° Ex quarter turn actuators „S" for zone 2, 22

Explosion proof	Features of RedMax - ... size „S"		
RedMax- ...	**Size „S"**	**Description**	**Basics for all RedMax-.. size „S"**

RedMax- ...

Explosion proof
zone 2, 22
gas + dust
PTB-certified
II3G EEx nC II T6
II3(1)G EEx [ia] IIC
II3D IP66 T80°C
ATEX 94/9/EC

Description

RedMax are, in acc. with type, for automation of air dampers, fire and smoke dampers, volume control, as well as for ball valves, throttle valves and other quarter turn armatures.

Delivery: 1 actuator, ~ 1 m cable, allen key for manual override, 4 screws.

Basics for all RedMax-.. size „S"

24…230 VAC/DC self adaptable power supply
Up to 5 different running times adjustable on site
95°angle of rotation (5° for pretention), 100% overload protected, aluminium housing IP 66, cable ~ 1 m
-40...+40°C/+50°C, integrated heater,
Simple manual override
Squared shaft connection 12 × 12 mm
Dimensions (L × W × D) 210 × 95 × 80 mm

Ex-n quarter turn actuators without spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
RedMax - 5.10	5 Nm / 10 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	-	S
RedMax - 15.30	15 Nm / 30 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	-	S
RedMax - 5.10 - S	5 Nm / 10 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
RedMax - 15.30 - S	15 Nm / 30 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
RedMax - 5.10 - Y	5 Nm / 10 Nm	7,5/15/30/60/120 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
RedMax - 15.30 - Y	15 Nm / 30 Nm	7,5/15/30/60/120 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S

Ex-n quarter turn actuators with spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
RedMax - 5.10 - F	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	-	S
RedMax - 15 - F	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	-	S
RedMax - 5.10 - SF	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
RedMax - 15 - SF	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
RedMax - 5.10 - YF	5 Nm / 10 Nm	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
RedMax - 15 - YF	15 Nm	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
RedMax - 5.10 - BF	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	S
RedMax - 15 - BF	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	S

Ex-n quarter turn actuators with 3 sec. spring return for Offshore application, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
RedMax - 15 - F3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	-	S
RedMax - 15 - SF3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
RedMax - 15 - BF3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	S

Accessories (additional price)

Type	Technical data
RedMax-...-VAS	Size „S", housing material in stainless steel AISI 316, some parts nickel plated
RedMax-...-CTS	Size „S", aluminium housing Amercoat painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
RedSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potential free contacts, adaptable to RedMax-... actuators
RedBox-3P	Ex-e terminal box connectable to RedMax-…actuators with 1 cable for On-off or 3-pos operation
RedBox-3P/SW	Ex-e terminal box connectable to RedMax-…actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type RedSwitch
RedBox-Y/S	Ex-e terminal box connectable to RedMax-... actuators with 2 cable, for modulating operation or 3-pos + integr. switches (HS)
RedBox-Y/S/SW	Ex-e terminal box connectable to RedMax-…actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
RedBox-BF	Ex-e terminal box connectable to RedMax-…actuators with 1 cable, for all RedMax-…-BF
RedBox-…/VA	Ex-e terminal-box, housing made of stainless-steel type AISI 316 L, some parts nickel plated, surcharge on aluminium version
RedBox-…/CT	Ex-e terminal-box, housing AMERCOAT painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated, surcharge on aluminium version
MKK-S	Mounting bracket for …Box-terminal boxes for direct coupling to …Max... actuators size „S"
MKK-S/VA	Mounting bracket, made of stainless-steel suitable for …Box/VA
KB-S	Mounting clamp for round damper shaft Ø 10 to 20 mm and squared shafts 10 to 16 mm, incl. bracket, connectable to all RedMax-... size „S"
HV-SK, HV-SL	Manual override, connectable to …Max-... actuators size „S". HV-SK=short version, HV-SL=long version for add. mounting of ...Box/Switch
AR-12-xx	Squared reduction part from 12x12 mm to shafts with 11mm (type AR-12-11), 10 mm (type AR-12-10), 8 mm (type AR-12-08)
D-F-…S	Adaptation with flange acc. to DIN EN 5211 for butterfly or ball-valves suitable for size „S"
FireSafe	Safety temperature trigger for fire dampers, switching at 72°C, with electrical connector, only connectable to …Max-…-BF actuators!

RedMax 90° Ex quarter turn actuators „M" for zone 2, 22

Explosion proof		Features of RedMax - ... size „M"	
RedMax- ...	**Size „M"**	**Description**	**Basics for all RedMax-.. size „M"**
Explosion proof zone 2, 22 gas + dust PTB-certified II3G EEx nC II T6 II3(1)G EEx [ia] IIC II3D IP66 T80°C ATEX 94/9/EC		RedMax are, in acc. with type, for automation of air dampers, fire and smoke dampers, volume control, as well as for ball valves, throttle valves and other quarter turn armatures. **Delivery:** 1 actuator, ~ 1 m cable, allen key for manual override, 4 screws.	**24…230 VAC/DC** self adaptable power supply Up to 5 different running times adjustable on site 95°angle of rotation (5° for pretention), 100% overload protected, aluminium housing IP 66, cable ~ 1 m -40...+40°C / +50°C, integrated heater, Simple manual override Squared shaft connection 16 × 16 mm Dimensions (L × W × D) 287 × 149 × 116 mm

Ex-n quarter turn actuators without spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
RedMax - 50.75	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	-	M
RedMax - 100	100 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	-	M
RedMax - 50.75 - S	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
RedMax - 100 - S	100 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
RedMax - 50.75 - Y	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
RedMax - 100 - Y	100 Nm	40/60/90/120/150 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M

Ex-n quarter turn actuators with spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
RedMax - 30 - F	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	-	M
RedMax - 50 - F	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	-	M
RedMax - 30 - SF	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	SF
RedMax - 50 - SF	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	SF
RedMax - 30 - YF	30 Nm	40/60/90/120/150 sec.	~20 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
RedMax - 50 - YF	50 Nm	40/60/90/120/150 sec.	~20 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
RedMax - 30 - BF	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M
RedMax - 50 - BF	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M

Ex-n quarter turn actuators with 3 sec. spring return for Offshore application, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
RedMax - 30 - F3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	-	M
RedMax - 50 - F3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	-	M
RedMax - 30 - SF3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
RedMax - 50 - SF3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
RedMax - 30 - BF3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M
RedMax - 50 - BF3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	Ex-i FireSafe connector + 2 x EPU (s.o.)	M

Accessories (additional price)

Type	Technical data
RedMax-...-CTM	Size „M", aluminium housing Amercoat painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
RedSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, adaptable to RedMax-... actuators
RedBox-3P	Ex-e terminal box connectable to RedMax-... actuators with 1 cable for On-off or 3-pos operation
RedBox-3P/SW	Ex-e terminal box connectable to RedMax-... actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type RedSwitch
RedBox-Y/S	Ex-e terminal box connectable to RedMax-... actuators with 2 cable, for modulating operation or 3-pos + integr. switches (HS)
RedBox-Y/S/SW	Ex-e terminal box connectable to RedMax-... actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
RedBox-BF	Ex-e terminal box connectable to RedMax-... actuators with 1 cable, for all ExMax-...-BF
RedBox-.../CT	Ex-e terminal-box, housing AMERCOAT painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated, surcharge on aluminium version
MKK-M	Mounting bracket for …Box-terminal boxes for direct coupling to …Max... actuators size „M"
HV-MK, HV-ML	Manual override, connectable to …Max-…actuators size „M". HV-MK=short version, HV-ML=long version for add. mounting of ...Box/Switch
AR-16-xx	Squared reduction part from 16x16 mm to shafts with 14 mm (type AR-16-14), 12 mm (type AR-16-12)
D-F-…M	Adaptation with flange acc. to DIN EN 5211 for butterfly or ball-valves suitable for size „M"
FireSafe	Safety temperature trigger for fire dampers, switching at 72°C, with electrical connector, only connectable to …Max-…-BF actuators!

InMax 90° quarter turn actuators „S" for safe area

Industrial	Features of InMax - ... size „S"

InMax- ...	Size „S"	Description	Basics for all InMax-.. size „S"
InMax actuators are **NOT** Explosion proof and only for use in safe area IP66		InMax are, in acc. with type, for automation of air dampers, fire and smoke dampers, volume control, as well as for ball valves, throttle valves and other quarter turn armatures. **Delivery:** 1 actuator, ~ 1 m cable, allen key for manual override, 4 screws.	**24…230 VAC/DC** self adaptable power supply Up to 5 different running times adjustable on site 95°angle of rotation (5° for pretention), 100% overload protected, aluminium housing IP 66, cable ~ 1 m -40...+40°C / +50°C, integrated heater, Simple manual override Squared shaft connection 12 × 12 mm Dimensions (L × W × D) 210 × 95 × 80 mm

Quarter turn actuators without spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
InMax - 5.10	5 Nm / 10 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	-	S
InMax - 15.30	15 Nm / 30 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	-	S
InMax - 5.10 - S	5 Nm / 10 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
InMax - 15.30 - S	15 Nm / 30 Nm	3/15/30/60/120 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
InMax - 5.10 - Y	5 Nm / 10 Nm	7,5/15/30/60/120 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
InMax - 15.30 - Y	15 Nm / 30 Nm	7,5/15/30/60/120 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S

Quarter turn actuators with spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
InMax - 5.10 - F	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	-	S
InMax - 15 - F	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	-	S
InMax - 5.10 - SF	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
InMax - 15 - SF	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
InMax - 5.10 - YF	5 Nm / 10 Nm	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
InMax - 15 - YF	15 Nm	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
InMax - 5.10 - BF	5 Nm / 10 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	NormSafe connector + 2 x EPU (s.o.)	S
InMax - 15 - BF	15 Nm	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-	NormSafe connector + 2 x EPU (s.o.)	S

Quarter turn actuators with 3 sec. spring return for Offshore application, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
InMax - 15 - F3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	-	S
InMax - 15 - SF3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	S
InMax - 15 - BF3	15 Nm	3/15/30/60/120 sec.	≤ 3 sec.	On-off	-	NormSafe connector + 2 x EPU (s.o.)	S

Accessories (additional price)

Type	Technical data
InMax-...-VAS	Size „S", housing material in stainless steel AISI 316, some parts nickel plated
InMax-...-CTS	Size „S", aluminium housing Amercoat painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
InSwitch	2 external, adaptable, on site adjustable aux. switches with 2 potentail free contacts, adaptable to InMax-... actuators
InBox-3P	Terminal box connectable to InMax-... actuators with 1 cable for On-off or 3-pos operation
InBox-3P/SW	Terminal box connectable to InMax-... actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type InSwitch
InBox-Y/S	Terminal box connectable to InMax-... actuators with 2 cable, for modulating operation or 3-pos + integr. switches (HS)
InBox-Y/S/SW	Terminal box connectable to InMax-... actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
InBox-BF	Terminal box connectable to InMax-... actuators with 1 cable, for all InMax-...-BF
InBox-…/VA	Terminal-box, housing made of stainless-steel type AISI 316 L, some parts nickel plated, surcharge on aluminium version
InBox-…/CT	Terminal-box, housing AMERCOAT painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated, surcharge on aluminium version
MKK-S	Mounting bracket for …Box-terminal boxes for direct coupling to …Max... actuators size „S"
MKK-S/VA	Mounting bracket, made of stainless-steel suitable for InBox...VA
KB-S	Mounting clamp for round damper shaft Ø 10 to 20 mm and squared shafts 10 to 16 mm, incl. bracket, connectable to all InMax-... size „S"
HV-SK, HV-SL	Manual override, connectable to …Max-... actuators size „S". HV-SK=short version, HV-SL=long version for add. mounting of ...Box/Switch
AR-12-xx	Squared reduction part from 12x12 mm to shafts with 11mm (type AR-12-11), 10 mm (type AR-12-10), 8 mm (type AR-12-08)
D-F-…S	Adaptation with flange acc. to DIN EN 5211 for butterfly or ball-valves suitable for size „S"
NormSafe	Safety temperature trigger for fire dampers, switching at 72°C, with electrical connector, only connectable to InMax-...-BF actuators!

InMax 90° quarter turn actuators „M" for safe area

| Industrial | Features of InMax - ... size „M" |

InMax- ...	Size „M"	Description	Basics for all InMax-.. size „M"
InMax actuators are **NOT** Explosion proof and only for use in safe area IP66		InMax are, in acc. with type, for automation of air dampers, fire and smoke dampers, volume control, as well as for ball valves, throttle valves and other quarter turn armatures. **Delivery:** 1 actuator, ~ 1 m cable, allen key for manual override, 4 screws.	**24…230 VAC/DC** self adaptable power supply Up to 5 different running times adjustable on site 95°angle of rotation (5° for pretention), 100% overload protected, aluminium housing IP 66, cable ~ 1 m -40...+40°C / +50°C, integrated heater, Simple manual override Squared shaft connection 16 × 16 mm Dimensions (L × W × D) 287 × 149 × 116 mm

Quarter turn actuators without spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
InMax - 50.75	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	-	M
InMax - 100	100 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	-	M
InMax - 50.75 - S	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
InMax - 100 - S	100 Nm	40/60/90/120/150 sec.	-	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
InMax - 50.75 - Y	50 Nm / 75 Nm	40/60/90/120/150 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
InMax - 100 - Y	100 Nm	40/60/90/120/150 sec.	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M

Quarter turn actuators with spring return, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
InMax - 30 - F	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	-	M
InMax - 50 - F	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	-	M
InMax - 30 - SF	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	SF
InMax - 50 - SF	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	SF
InMax - 30 - YF	30 Nm	40/60/90/120/150 sec.	~20 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
InMax - 50 - YF	50 Nm	40/60/90/120/150 sec.	~20 sec.	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	M
InMax - 30 - BF	30 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	NormSafe connector + 2 x EPU (s.o.)	M
InMax - 50 - BF	50 Nm	40/60/90/120/150 sec.	~20 sec.	On-off, 3-pos	-	NormSafe connector + 2 x EPU (s.o.)	M

Quarter turn actuators with 3 sec. spring return for Offshore application, 24 to 230 VAC/DC

Type	Torque	Running time 90°	Spring return	Control mode	Feedback	Features	Size
InMax - 30 - F3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	-	M
InMax - 50 - F3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	-	M
InMax - 30 - SF3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
InMax - 50 - SF3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	2 x EPU (= 2 aux. switches @ 5° and 85°)	M
InMax - 30 - BF3	30 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	NormSafe connector + 2 x EPU (s.o.)	M
InMax - 50 - BF3	50 Nm	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-	NormSafe connector + 2 x EPU (s.o.)	M

Accessories (additional price)

Type	Technical data
InMax-...-CTM	Size „M", aluminium housing Amercoat painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
InSwitch	2 external, adaptable, on site adjustable aux. switches with 2 potentail free contacts, adaptable to InMax-... actuators
InBox-3P	Terminal box connectable to InMax-... actuators with 1 cable for On-off or 3-pos operation
InBox-3P/SW	Terminal box connectable to InMax-... actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type InSwitch
InBox-Y/S	Terminal box connectable to InMax-... actuators with 2 cable, for modulating operation or 3-pos + integr. switches (HS)
InBox-Y/S/SW	Terminal box connectable to InMax-... actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
InBox-BF	Terminal box connectable to InMax-... actuators with 1 cable, for all ExMax-...-BF
InBox-…/CT	Terminal-box, housing AMERCOAT painted, resistant against corrosive and/or maritime atmosphere, some parts nickel plated, surcharge on aluminium version
MKK-M	Mounting bracket for …Box-terminal boxes for direct coupling to …Max... actuators size „M"
HV-MK, HV-ML	Manual override, connectable to …Max-…actuators size „M". HV-MK=short version, HV-ML=long version for add. mounting of ...box/switch
AR-16-xx	Squared reduction part from 16x16 mm to shafts with 14 mm (type AR-16-14), 12 mm (type AR-16-12)
D-F-…M	Adaptation with flange acc. to DIN EN 5211 for butterfly or ball-valves suitable for size „M"
NormSafe	Safety temperature trigger for fire dampers, switching at 72°C, with electrical connector, only connectable to InMax-…-BF actuators !

ExRun/RedRun/InRun Valve actuators size „S"

NEW from IV. quarter 2008

Explosion proof		Industrial	Features of ExRun, RedRun, InRun	

ExRun...	RedRun...	InRun...	Description	Basics for all ...Run valve actuators
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2G.. II2D.. ATEX 94/9/EC	Explosion proof zone 2, 22 gas + dust PTB-certified II3G.. II3D.. ATEX 94/9/EC	InRun actuators are **NOT** Explosion proof and only for use in safe area IP66	ExRun, RedRun and InRun valve actuators are used for automation of 2- and 3-way valves with 3-pos. on-off or modulating mode. **Delivery:** 1 actuator with integrated Ex-e terminal box, simple manual override. **Necessary accessories:** valve adaptation in acc. with valve manufacturer, type and nominal size (diameter).	**24...230 VAC/DC** self adaptable power supply Up to 5 different running times adjustable on site 5 to 60 mm stroke, mechanical limitation on each position Automatic adaptation of modulating signal at Ex-, Red-, InRun-...-Y.. Aluminium housing IP 66, integrated terminal box -40...+40°C / +50°C, integrated heater, Simple manual override Dimension (L* × W × D) 260 × 208 × 115 mm (dimension without adaptation) *Length = variable, depending on type

Ex-d valve actuators without spring return, 24 to 230 VAC/DC

Type	Force	Running time	Spring return	Control mode	Feedback	Features	Size
ExRun - 5.10 - X	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	**ExSwitch not adaptable!**	S
ExRun - 25.50 - X	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	**ExSwitch not adaptable!**	S
ExRun - 75.100 - X	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	**ExSwitch not adaptable!**	S
ExRun - 5.10	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	-	S
ExRun - 25.50	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	-	S
ExRun - 75.100	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	-	S
ExRun - 5.10 - S	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
ExRun - 25.50 - S	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
ExRun - 75.100 - S	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
ExRun - 5.10 - P	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
ExRun - 25.50 - P	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
ExRun - 75.100 - P	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
ExRun - 5.10 - Y	500 / 1.000 N	2/3/6/9/12 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
ExRun - 25.50 - Y	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
ExRun - 75.100 - Y	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S

Ex-n valve actuators without spring return, 24 to 230 VAC/DC

Type	Force	Running time	Spring return	Control mode	Feedback	Features	Size
RedRun - 5.10 - X	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	**RedSwitch not adaptable!**	S
RedRun - 25.50 - X	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	**RedSwitch not adaptable!**	S
RedRun -75.100 - X	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	**RedSwitch not adaptable!**	S
RedRun - 5.10	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	-	S
RedRun - 25.50	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	-	S
RedRun -75.100	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	-	S
RedRun - 5.10 - S	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
RedRun - 25.50 - S	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
RedRun -75.100 - S	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
RedRun - 5.10 - P	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
RedRun - 25.50 - P	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
RedRun -75.100 - P	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
RedRun - 5.10 - Y	500 / 1.000 N	2/3/6/9/12 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
RedRun - 25.50 - Y	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
RedRun -75.100 - Y	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S

Valve actuators without spring return, 24 to 230 VAC/DC

Type	Force	Running time	Spring return	Control mode	Feedback	Features	Size
InRun - 5.10 - X	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	InSwitch not adaptable!	S
InRun - 25.50 - X	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	InSwitch not adaptable!	S
InRun -75.100 - X	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	InSwitch not adaptable!	S
InRun - 5.10	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	-	S
InRun - 25.50	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	-	S
InRun -75.100	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	-	S
InRun - 5.10 - S	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
InRun - 25.50 - S	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
InRun -75.100 - S	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos	-	2 aux. switch, fixed switching points	S
InRun - 5.10 - P	500 / 1.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
InRun - 25.50 - P	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
InRun -75.100 - P	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	On-off, 3-pos-P	feedback potentiometer 1.000 Ω	-	S
InRun - 5.10 - Y	500 / 1.000 N	2/3/6/9/12 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
InRun - 25.50 - Y	2.500 / 5.000 N	2/3/6/9/12 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S
InRun -75.100 - Y	7.500 / 10.000 N (8.000 N)	4/6/9/12/15 sec/mm	-	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	-	S

Accessories (additional price)

Type	Technical data
...Run-...-CTS	Size „S", aluminium housing with Amercoat painting, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
ExSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, additionally Ex-e terminal box + mounting bracket necessary
RedSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, additionally Ex-e terminal box + mounting bracket necessary
InSwitch	2 external, adaptable, on site adjustable switches with 2 potentail free contacts, additionally terminal box + mounting bracket necessary
ExBox-SW	Ex-e terminal box suitable for ExRun...valve-actuators with external switches ExSwitch
RedBox-SW	Ex-e terminal box suitable for RedRun...valve-actuators with external switches RedSwitch
InBox-SW	Terminal box suitable for InRun...valve-actuators with external switches InSwitch
MKK-S	Mounting-bracket suitable for ...Box-terminal boxes for direct mounting on ...Run actuators size „S"
HV-SK, HV-SL	Manual override with locking mechanism suitable for ...Run actuators size „S". HV-SK = short version, HV-SL = long version for add. mounting of ...Box/Switch
Adaptation	Different adaptations for different valve types and sizes available. Please don't hesitate to ask for technical solution

Required data for valve adaptation

To select the right valve adaptation and get the right price information the following data are required:

1. Valve manufacturer

2. Valve type

3. Valve nominal size (diameter) DN

For adaptations which are still designed by Schischek this data are minimum requirements.

To design new adaptations we need additional details of the valve body as well as drawings.

At purchase order you have to order both parts actuator + adaptation.

…Run + valve adaptation

ExRun-…
RedRun-…
InRun-…

+

Adaptation

SCHISCHEK
EXPLOSIONPROOF
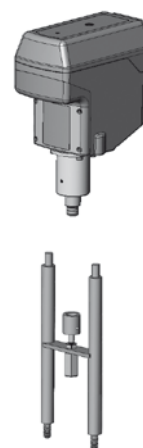
ExPlus/RedPlus/InPlus Linear actuators up to 300 mm stroke

NEW from IV. quarter 2008

Explosion proof		Industrial	Features of ExPlus, RedPlus, InPlus

ExPlus ...	RedPlus ...	InPlus...	Description	Basics for all ...Plus actuators
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2G.. II2D.. ATEX 94/9/EC	Explosion proof zone 2, 22 gas + dust PTB-certified II3G.. II3D.. ATEX 94/9/EC	InPlus actuators are **NOT** Explosion proof and only for use in safe area IP66	ExPlus, RedPlus and InPlus actuators for linear motion or rotary operation via lever. Types Ex-Red-In are different in certi-fication, but with same functions and dimension. **Delivery:** 1 actuator with 1 m cable, 2 linkages and 1 mounting bracket	24...230 V AC/DC self adaptable power supply Up to 5 different running times adjustable on site, 100 % overload protected Aluminium housing IP66 Integrated heater, -40...+40°C/+50°C 1 m cable, Mounting bracket, 2 fork-links In acc. with type: 300 or 3.000 N force 100 and 300 mm stroke On-off, 3-pos, 0-10VDC, 4-20mA ExPlus for installation in zone 1, 2, 21, 22 RedPlus for installation in zone 2, 22 InPlus for installation in the safe area

ExPlus... Ex-d linear actuators, 24...230 VAC/DC, zone 1, 2, 21, 22

Type	Force	Stroke	Running time	Control mode	Feedback	Features
ExPlus- 3.5-100 - X	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**ExSwitch not adaptable!**
ExPlus- 3.5-300 - X	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**ExSwitch not adaptable!**
ExPlus-10.30-100 - X	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**ExSwitch not adaptable!**
ExPlus-10.30-300 - X	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**ExSwitch not adaptable!**
ExPlus- 3.5-100	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
ExPlus- 3.5-300	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
ExPlus-10.30-100	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
ExPlus-10.30-300	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
ExPlus- 3.5-100 - Y	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
ExPlus- 3.5-300 - Y	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
ExPlus-10.30-100 - Y	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
ExPlus-10.30-300 - Y	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	

RedPlus... Ex-n linear actuators, 24...230 VAC/DC, zone 2, 22

| Type	Force	Stroke	Running time	Control mode	Feedback	Features
RedPlus- 3.5-100 - X	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**RedSwitch not adaptable!**
RedPlus- 3.5-300 - X	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**RedSwitch not adaptable!**
RedPlus-10.30-100 - X	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**RedSwitch not adaptable!**
RedPlus-10.30-300 - X	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**RedSwitch not adaptable!**
RedPlus- 3.5-100	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
RedPlus- 3.5-300	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
RedPlus-10.30-100	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
RedPlus-10.30-300	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
RedPlus- 3.5-100 - Y	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
RedPlus- 3.5-300 - Y	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
RedPlus-10.30-100 - Y	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
RedPlus-10.30-300 - Y	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	

InPlus... linear actuators, 24...230 VAC/DC, safe area (Industrial application, NON Ex)

Type	Force	Stroke	Running time	Control mode	Feedback	Features
InPlus- 3.5-100 - X	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**InSwitch not adaptable!**
InPlus- 3.5-300 - X	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**InSwitch not adaptable!**
InPlus-10.30-100 - X	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**InSwitch not adaptable!**
InPlus-10.30-300 - X	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	**InSwitch not adaptable!**
InPlus- 3.5-100	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
InPlus- 3.5-300	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
InPlus-10.30-100	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
InPlus-10.30-300	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	On-off, 3-pos	-	
InPlus- 3.5-100 - Y	300 N / 500 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
InPlus- 3.5-300 - Y	300 N / 500 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
InPlus-10.30-100 - Y	1.000 N / 3.000 N	100 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	
InPlus-10.30-300 - Y	1.000 N / 3.000 N	300 mm	0,5 / 1,0 / 2,0 sec/mm	3-pos, 0...10VDC, 4...20 mA	0...10VDC, 4...20 mA	

Accessories (additional price)

Type	Technical data
…Plus-…-CTS	Size „S", aluminium housing with Amercoat painting, resistant against corrosive and/or maritime atmosphere, some parts nickel plated
ExSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, adaptable to ExPlus-... actuators
RedSwitch	2 external, adaptable, on site adjustable Ex-aux. switches with 2 potentail free contacts, adaptable to RedPlus-... actuators
InSwitch	2 external, adaptable, on site adjustable aux. switches with 2 potentail free contacts, adaptable to InPlus-... actuators
ExBox-SW	Ex-e terminal box suitable for ExPlus...linear-actuators with external switches ExSwitch
RedBox-SW	Ex-e terminal box suitable for RedPlus...linear-actuators with external switches RedSwitch
InBox-SW	Terminal box suitable for InPlus...linear-actuators with external switches InSwitch
MKK-S	Mounting-bracket suitable for ...Box-terminal boxes for direct mounting on ...Plus linear actuators
HV-SK, HV-SL	Manual override with locking mechanism suitable for ...Plus linear actuators. HV-SK=short version, HV-SL=long version for add. mounting of ...Box/Switch

Mounting variations
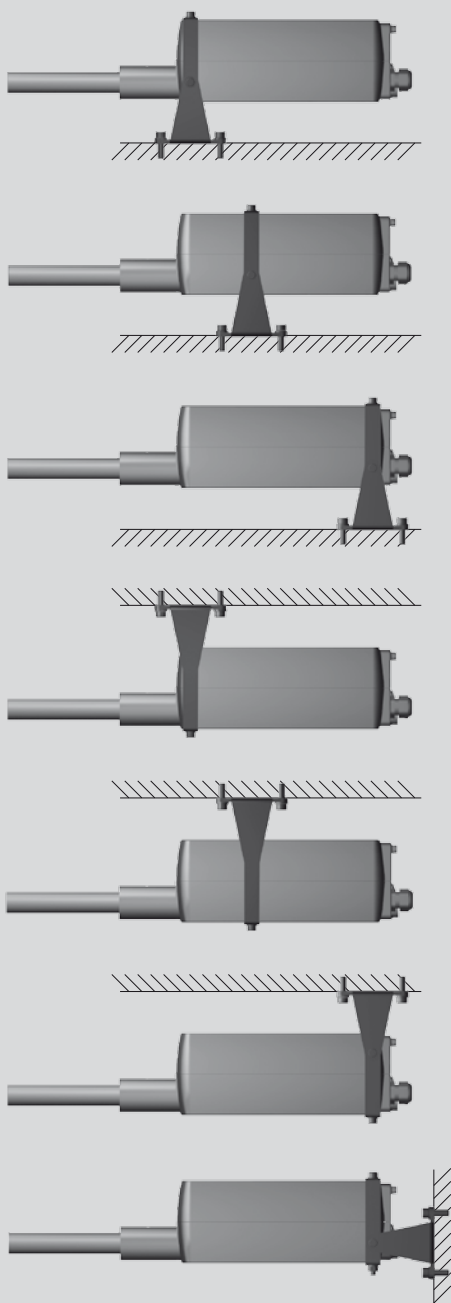
100 mm Stroke

300 mm Stroke
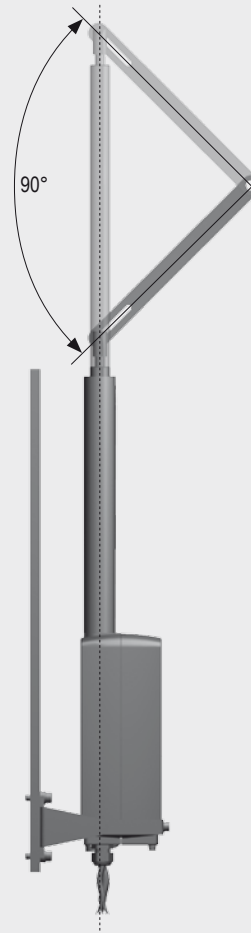
Force	Torque at stroke		
	100 mm	200 mm	300 mm
300 N	15 Nm	30 Nm	45 Nm
500 N	25 Nm	50 Nm	75 Nm
1000 N	50 Nm	100 Nm	150 Nm
3000 N	150 Nm	300 Nm	450 Nm

ExCos../RedCos../InCos.. Sensors — Overview and Accessories

The new ExCos..., RedCos and InCos Sensor-Technology

The new sensors are subdevided in 3 installation- and 3 application-areas.

Installation-areas:
ExCos-… Sensor for Ex-area zone 1, 2, 21, 22
RedCos-… Sensor for Ex-area zone 2, 22
InCos-… Sensor for safe area

Application-areas:
Ex / Red / InCos-P sensors for pressure and differential pressure
Ex / Red / InCos-D + …Pro active sensor-heads for temperature and/or humidity
Ex / Red / InCos-A + …Sens passive sensors for temperature, humidity and potentiometer

The new sensor concept grant enormous advantages to known solutions, especially in hazardous zones:

1. No transducer in the electrical control-panel necessary
2. No intrinsic safe electrical circuit within the control-panel necessary
3. No intrinsic safe wiring between the electrical control-panel and the sensor necessary
4. Cost reduction within the electrical components
5. Cost reduction within installation

	Type		Installation examples		Description

| Type

Δ P   **ExCos-P** NEW

°C %rF   **ExCos-D + ExPro** NEW

°C %rF   **ExCos-A + ExSens** NEW

°C %rF   **EXL-IMU-1 + ExSens**

°C %rF Δ P   **EXL-IRU-1 + ExSens**

| Installation examples

Pressure, Differential Pressure, VAV – modulating, active

ΔP
normal wiring

Temperature and / or Humidity – modulating, active

Duct sensor
normal wiring
Room sensor

Temperature and / or Humidity, Potentiometer – modulating, passive

Ex-i wiring (intrinsically safe)
normal wiring

Temperature, Humidity, Potentiometer – modulating, passive

Ex-i wiring (intrinsically safe)
normal wiring

Temperature, Humidity, Differential Pressure – binary, passive

Ex-i wiring (intrinsically safe)
normal wiring

| Safe area | Ex area |

| Description

ExCos-P…, RedCos-P…, InCos-P… Sensors
Transducers with integrated differential-pressure sensor for direct connection of the air-hoses. IP 66 aluminium housing with integrated terminal-box. Measuring range parametrizable on site. Outputs 0…10V VDC / 4…20 mA. Integrated actual value indication, illuminated.

ExCos-D…, RedCos-D…, InCos-D…
Transducer + ExPro, InPro-sensor probe
Transducer for the installation of an ExPro, or InPro (with InCos-D) for temperature C° and/or humidity in %. IP 66 aluminium housing with integrated terminal-box. Measuring-range parametrizable on site. Outputs 0…10V VDC / 4…20 mA. Integrated actual value indication, illuminated.

ExCos-A…, RedCos-A…, InCos-A…
Transducer + ExSens sensor
Transducer for a connection of an passive, modulating ExSens sensor type Pt 100, Ni 1000, 0…10 kΩ over Ex-i electrical conduit. IP66 aluminium housing with integrated terminal-box. Measuring range parametrizable on site. Outputs 0…10V VDC / 4…20 mA. Integrated actual value indication, illuminated.

EXL-IMU-1 transducer + ExSens sensor
Transducer for a connection of an passive, modulating ExSens sensor type Pt 100, Ni 1000, 0…10 kΩ over Ex-i electrical conduit. Installation in control box onto DIN-rail. Measuring range parametrizable at site. Outputs 0…10V VDC / 4…20 mA. Integrated actual value indication.

EXL-IRU-1 transducer + ExSens sensor
Switching module for a connection of an passive, binary ExSens sensor, e.g. diff. pressure switch, frost protection thermostat or hygrostat through intrinsically safe electrical conduit. Installation in control box onto DIN-rail. Output is potential-free.

ExCos-P/RedCos-P/InCos-P Differential pressure sensors

Explosion proof	Industrial	Features of ExCos-P, RedCos-P, InCos-P sensors

ExCos - P...	RedCos - P...	InCos - P...	Description	Basics for all …Cos-P sensors
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2(1)G Ex ema [ia] IIC T6 II2(1)D Ex tD A21 [iaD] IP66 T80°C ATEX 94/9/EC	Explosion proof zone 2, 22 gas + dust PTB-certified II3(1)G Ex nC [ia] IIC T6 II3(1)D Ex tD A22 [iaD] IP66 T80°C ATEX 94/9/EC	InCos sensors are **NOT** Explosion proof and only for use in safe area IP66	ExCos-P, RedCos-P and InCos-P are pressure sensors for HVAC systems, e.g. for differential pressure- or VAV control. VAV control must be tested by the manufacturerer of VAV dampers in acc. with diameter, design and characteristics of the air damper. **Delivery:** 1 sensor with integrated terminal box	No additional module in the panel required! No intrinsically safe wiring required 24 VAC/DC supply Outputs 0…10 VDC, 4…20 mA selectable Measurement range adjustable. Actual value indication (which can be switched off) All parameters can be adjusted on site without additional tools and measurement devices Aluminium housing IP 66 Integrated terminal box Dimensions (L × W × D) 177 × 107 × 66 mm

ExCos-P... Differential pressure and volume control sensors zone 1, 2, 21, 22

Type	Max. range	Overload protected	Measurement range, min. 20% of max. range		Installation sensor
ExCos - P100	+/- 100 Pa	up to 25.000 Pa	+/- Measurement range free adjustable, min. range	20 Pa	zone 1, 2, 21, 22
ExCos - P250	+/- 250 Pa	up to 25.000 Pa	+/- Measurement range free adjustable, min. range	50 Pa	zone 1, 2, 21, 22
ExCos - P500	+/- 500 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	100 Pa	zone 1, 2, 21, 22
ExCos - P1250	+/- 1.250 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	250 Pa	zone 1, 2, 21, 22
ExCos - P2500	+/- 2.500 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	500 Pa	zone 1, 2, 21, 22
ExCos - P5000	+/- 5.000 Pa	up to 75.000 Pa	+/- Measurement range free adjustable, min. range	1.000 Pa	zone 1, 2, 21, 22
ExCos - P7500	+/- 7.500 Pa	up to 120.000 Pa	+/- Measurement range free adjustable, min. range	1.500 Pa	zone 1, 2, 21, 22

RedCos-P... Differential pressure and volume control sensors zone 2, 22

Type	Max. range	Overload protected	Measurement range, min. 20% of max. range		Installation sensor
RedCos - P100	+/- 100 Pa	up to 25.000 Pa	+/- Measurement range free adjustable, min. range	20 Pa	zone 2, 22
RedCos - P250	+/- 250 Pa	up to 25.000 Pa	+/- Measurement range free adjustable, min. range	50 Pa	zone 2, 22
RedCos - P500	+/- 500 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	100 Pa	zone 2, 22
RedCos - P1250	+/- 1.250 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	250 Pa	zone 2, 22
RedCos - P2500	+/- 2.500 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	500 Pa	zone 2, 22
RedCos - P5000	+/- 5.000 Pa	up to 75.000 Pa	+/- Measurement range free adjustable, min. range	1.000 Pa	zone 2, 22
RedCos - P7500	+/- 7.500 Pa	up to 120.000 Pa	+/- Measurement range free adjustable, min. range	1.500 Pa	zone 2, 22

InCos-P... Differential pressure and volume control sensors for safe areas

Type	Max. range	Overload protected	Measurement range, min. 20% of max. range		Installation sensor
InCos - P100	+/- 100 Pa	up to 25.000 Pa	+/- Measurement range free adjustable, min. range	20 Pa	safe area
InCos - P250	+/- 250 Pa	up to 25.000 Pa	+/- Measurement range free adjustable, min. range	50 Pa	safe area
InCos - P500	+/- 500 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	100 Pa	safe area
InCos - P1250	+/- 1.250 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	250 Pa	safe area
InCos - P2500	+/- 2.500 Pa	up to 50.000 Pa	+/- Measurement range free adjustable, min. range	500 Pa	safe area
InCos - P5000	+/- 5.000 Pa	up to 75.000 Pa	+/- Measurement range free adjustable, min. range	1.000 Pa	safe area
InCos - P7500	+/- 7.500 Pa	up to 120.000 Pa	+/- Measurement range free adjustable, min. range	1.500 Pa	safe area

Accessories (additional price)

Type	Technical data
Ex/RedCos-P… -A	Module as before, but with 1 intrinsically safe circuit 4…20 mA output to connect external actual value indicator
InCos-P… -A	Module as before, but with one 4…20 mA output to connect external actual value indicator
EXC-RIA-261	Intrinsic safe actual value LCD indicator, for use in zone 1, 2, 21, 22, connectable to Ex-, RedCos… sensors with type addition …P.. - A
NOC-RIA-261	LCD indicator, connectable to InCos… sensors with type addition …P.. - A
MKR	Mounting bracket for installation on round air-ducts (diameter up to 600 mm)
Installation kit 2	Includes 2 meter pressure hose (inner diameter 6 mm) 2 plastic fittings

SCHISCHEK
EXPLOSIONPROOF

ExCos-D/RedCos-D/InCos-D Temperature/humidity transducer

Explosion proof	Industrial	Features ExCos-D, RedCos-D, InCos-D transducer

ExCos - D...	RedCos - D...	InCos - D...	Description	Basics for all …Cos-D sensors
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2(1)G Ex ema [ia] IIC T6 II2(1)D Ex tD A21 [iaD] IP66 T80°C ATEX 94/9/EC	Explosion proof zone 2, 22 gas + dust PTB-certified II3(1)G Ex nC [ia] IIC T6 II3(1)D Ex tD A22 [iaD] IP66 T80°C ATEX 94/9/EC	InCos sensors are NOT Explosion proof and only for use in safe area IP66	ExCos-D, RedCos-D and InCos-D transducer together with ExPro/InPro digital sensors are for temperature and/or humidity measurement in HVAC systems. **Delivery:** 1 transducer with connection for 1 ExPro-… sensor **Required accessory (additional price):** 1 ExPro sensor **Purchase example** for 1 temperature duct sensing, 150 mm sensor tube, additional external value indication, sensor in zone 21, indicator in zone 22. **Types to purchase:** 1 x ExCos-D + type addition …- A (Ex-i transducer) 1 x ExPro-CT150 + (Ex-i sensor) 1 x EXC-RIA-261 (Ex-i indicator)	No additional module in the panel required! No intrinsically safe wiring required. 24 VAC/DC supply Connector for ExPro sensors for room or duct mounting Outputs 0…10 VDC, 4…20 mA selectable Measurement range adjustable. Actual value indication (which can be switched off). All parameters can be adjusted on site without additional tools and measurement devices. Aluminium housing IP 66 Integrated terminal box Dimensions (L × W × D) 177 × 107 × 66 mm ExCos-D for zone 1, 2, 21, 22 RedCos-D for zone 2, 22 InCos-D for safe area

ExCos-D temperature-/humidity module for zone 1, 2, 21, 22

Type	Technical data	Installation module	Installation ExPro sensor
ExCos - D	Module to connect 1 ExPro sensor for temperture and/or humidity for use in hazardous areas	zone 1, 2, 21, 22	zone 1, 2, 21, 22

RedCos-D temperature-/humidity module for zone 2, 22

Type	Technical data	Installation module	Installation ExPro sensor
RedCos - D	Module to connect 1 ExPro sensor for temperture and/or humidity for use in hazardous areas	zone 2, 22	zone 1, 2, 21, 22

InCos-D temperature-/humidity module for safe area

Type	Technical data	Installation module	Installation InPro sensor
InCos - D	Module to connect 1 InPro sensor for temperture and/or humidity for use in safe area	safe area	safe area

Accessories (additional price)

Type	Technical data
Ex/RedCos - D-A	Module as before, but with 2* intrinsic safe circuit 4…20 mA output to connect external actual value indicator
InCos - D-A	Module as before, but with 2* 4…20 mA outputs to connect external actual value indicators
EXC-RIA-261	Intrinsic safe actual value LCD indicator, for use in zone 1, 2, 21, 22, connectable to Ex/RedCos-…D sensors
NOC-RIA-261	Actual value LCD indicator, for use in safe area, connectable to InCos-…D sensors
MKR	Mounting bracket for installation on round air-ducts (diameter up to 600 mm)

*Output 1 = for °C, Output 2 = for %rH

Example of combinations
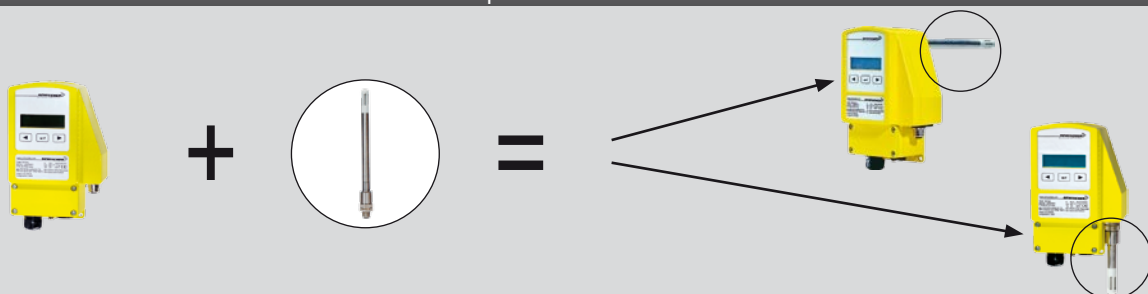
ExPro/InPro Digital temperature-/humidity sensors

Explosion proof	Industrial	Features ExPro, InPro sensors

ExPro-…	InPro-…	Description	Basics for all ExPro sensors
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified in acc. with ExCos-D and RedCos-D transducer ATEX 94/9/EC	Only for use with InCos-D… transducers! **NOT** for use in Ex area!	ExPro sensors for temperature and/or humidity (in acc. with type) in hazardous areas only for use together with ExCos-D… / RedCos-D… transducers! InPro sensors are suitable for temperature and/or humidity measurement in safe area and exceptional applicable with InCos-D tranducers. **Delivery:** 1 sensor with connector **Example:** room-humidity sensor, 50 mm length **Type:** 1 x ExPro-CF-50 **Attention:** only in combination with: 1 × ExCos-D or RedCos-D (InCos-D by InPro sensors)	Sensors connectable only to ExCos-D…, RedCos-D… transducer. Mechanical and electrical adaptation via connector. ExPro/InPro sensor can be screwed optional on the back or bottom-side of the housing. Using Humidity-sensors, the contamination and aggressiveness of the medium has to be regarded.

Sensors, for ExCos-D and RedCos-D transducer

Type	Function	Range	Sensor length	Main use	Connectable to		Installation area
ExPro-CT - 50	Temperature sensor	- 40…+ 125 °C	50 mm	Room/duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CT - 100	Temperature sensor	- 40…+ 125 °C	100 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CT - 150	Temperature sensor	- 40…+ 125 °C	150 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CT - 200	Temperature sensor	- 40…+ 125 °C	200 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CF - 50	Humidity sensor	0…100 %rF	50 mm	Room/duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CF - 100	Humidity sensor	0…100 %rF	100 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CF - 150	Humidity sensor	0…100 %rF	150 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CF - 200	Humidity sensor	0…100 %rF	200 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CTF - 50	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	50 mm	Room/duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CTF - 100	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	100 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CTF - 150	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	150 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22
ExPro-CTF - 200	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	200 mm	Duct	ExCos-D	RedCos-D	zone 1, 2, 21, 22

Sensors, for InCos-D transducer

Type	Function	Range	Sensor length	Main use	Connectable to	Installation area
InPro-CT - 50	Temperature sensor	- 40…+ 125 °C	50 mm	Room/duct	InCos-D	safe area
InPro-CT - 100	Temperature sensor	- 40…+ 125 °C	100 mm	Duct	InCos-D	safe area
InPro-CT - 150	Temperature sensor	- 40…+ 125 °C	150 mm	Duct	InCos-D	safe area
InPro-CT - 200	Temperature sensor	- 40…+ 125 °C	200 mm	Duct	InCos-D	safe area
InPro-CF - 50	Humidity sensor	0…100 %rF	50 mm	Room/duct	InCos-D	safe area
InPro-CF - 100	Humidity sensor	0…100 %rF	100 mm	Duct	InCos-D	safe area
InPro-CF - 150	Humidity sensor	0…100 %rF	150 mm	Duct	InCos-D	safe area
InPro-CF - 200	Humidity sensor	0…100 %rF	200 mm	Duct	InCos-D	safe area
InPro-CTF - 50	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	50 mm	Room/duct	InCos-D	safe area
InPro-CTF - 100	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	100 mm	Duct	InCos-D	safe area
InPro-CTF - 150	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	150 mm	Duct	InCos-D	safe area
InPro-CTF - 200	Combination temperature/humidity	- 40…+ 125 °C, 0…100 %rF	200 mm	Duct	InCos-D	safe area

Accessories (additional price)

Type	Technical data
MFK	Mounting flange for duct-installation, for variable depth of immersion
TH-VA	Probe made of stainless-steel, length 120 mm, other lengths on request
FA-VA	Filter-set made of stainless-steel, pore-size 10 µm. **Not suitable for high-humidity measurements!**
MKR	Mounting bracket for installation on round air-ducts (diameter up to 600 mm)

ExCos-A/RedCos-A/InCos-A Temperature / humidity transducer

Explosion proof		Industrial	Features of ExCos-A, RedCos-A, InCos-A	
ExCos - A...	**RedCos - A...**	**InCos - A...**	**Description**	**Basics for all …Cos-A transducer**
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2(1)G Ex ema [ia] IIC T6 II2(1)D Ex tD A21 [iaD] IP66 T80°C ATEX 94/9/EC	Explosion proof zone 2, 22 gas + dust PTB-certified II3(1)G Ex nC [ia] IIC T6 II3(1)D Ex tD A22 [iaD] IP66 T80°C ATEX 94/9/EC	InCos sensors are **NOT** Explosion proof and only for use in safe area IP66	ExCos-A, RedCos-A and InCos-A transducer together with modulating ExSens passive sensors are for temperature or humidity measurement in HVAC systems. **Delivery:** 1 transducer with connection for modulating 1 ExSens sensor **Required accessory (additional price):** 1 ExSens sensor **Purchase example** for measuring of temperature in air duct, with Pt 100 in zone 1. **Types to purchase:** 1 x ExCos-A (Ex-i transducer) 1 x TFR-2G (Ex-i sensor)	No additional module in the panel required! No intrinsically safe wiring required. 24 VAC/DC supply Connector for 1 ExSens sensor for room or duct mounting. Outputs: 0…10 VDC, 4…20 mA selectable Input: Pt 100, Pt 500, Pt 1000, Ni 100, Ni 200, Ni 500, Ni 1000, Ni 1000 Siemens, KP 250, Passive sensors with resistance output 0…1000 Ohm, 0…10.000 Ohm Measuring range adjustable. Actual value indication (which can be switched off). All parameters can be adjusted on site without additional tools and measurement devices. Aluminium housing IP 66 Integrated terminal box Dimensions (L × W × D) 177 × 107 × 66 mm ExCos-A for zone 1, 2, 21, 22 RedCos-A for zone 2, 22 InCos-A for safe area

ExCos-A Transducer for passive sensors for zone 1, 2, 21, 22

Type	Technical data	Installation module	Installation sensor*
ExCos - A	Module to connect 1 modulating ExSens sensor for temperture or humidity for use in hazardous areas	zone 1, 2, 21, 22	zone 0, 1, 2, 20, 21, 22

* in acc. with certification of sensor!

RedCos-A Transducer for passive sensors for zone 2, 22

Type	Technical data	Installation module	Installation sensor*
RedCos - A	Module to connect 1 modulating ExSens sensor for temperture or humidity for use in hazardous areas	zone 2, 22	zone 0, 1, 2, 20, 21, 22

* in acc. with certification of sensor!

InCos-A Transducer for passive sensors for safe area

Type	Technical data	Installation module	Installation sensor
InCos - A	Module to connect 1 modulating sensor for temperture or humidity for use in safe area Sensors: all passive sensors like Pt 100, Pt 1000, Ni 100, 200, 1000	safe area	safe area

Accessories (additional price)

Type	Technical data
Ex/RedCos - AA	Module as before, but with 1 intrinsically safe circuit 4…20 mA output to connect external actual value indicator
InCos - A	Module as before, but with one 4…20 mA output to connect external indicator
EXC-RIA-261	Intrinsically safe actual value LCD indicator, for use in zone 1, 2, 21, 22, connectable to Ex/RedCos-…A sensors
NOC-RIA-261	Actual value LCD indicator, for use in safe area, connectable to InCos-…A sensors
MKR	Mounting bracket for installation on round air-ducts (diameter up to 600 mm)

ExLine Ex-transducer with Ex-i circuit for zone 0, 1, 2, 20, 21, 22

Explosion proof		Features EXL-IMU-1	
EXL-IMU-1	**Module**	**Description**	**Basics EXL-IMU-1**
Explosion proof zone 0, 1, 2, 20, 21, 22 gas + dust PTB-certified II(1)GD [EEx ia] IIC ATEX 94/9/EC		EXL-IMU-1 module with intrinsically safe circuit to change a passive sensor signal (e.g. Pt 100) into an active mA/VDC signal. **Delivery:** 1 Ex-i module for DIN rail mounting **Accessory (optional):** modulating sensors type ExSens	Transducer for passive, potential free, modulating sensors series ExSens. 2-3-4-wire connection 24 VAC/DC supply Output: 0…10 VDC, 4…20 mA Input: Pt 100/500/1000, Ni 100/200/500/1000, LS-Ni 1000 Siemens, KP 250, LF 20, DFK-.., VFK-.., Passive sensors with resistance output 0…1.000 Ohm, 0…10.000 Ohm Display for adjustment and actual value indication Module must be installed in the safe area, sensor in the hazardous area.

EXL-IMU-1 transducer

Type	Technical data	Installation module	Installation sensor*
EXL-IMU-1	1 module (rail mounting) for 1 passive sensor series ExSens	Safe area	zone 0, 1, 2, 20, 21, 22
Optional:			
N1 supply unit	Input 120…230 VAC, output 24 VDC, max. 0,5 A, max. 4 pcs. EXL-IMU-1 connectable. N1 supply unit is required only in case of 120…230 VAC supply!		

* in acc. with certification of sensor!

ExSens Passive modulating sensors for zone 1, 2, 22

Explosion proof		Features modulating ExSens sensors	
ExSens	**passive**	**Description**	**Basics for ExSens sensors**
Explosion proof zone 1, 2, 22 gas + dust Manufacturer certificate ATEX 94/9/EC		ExSens sensors for temperature, humidity or pressure measurement in hazardous areas with manufacturer certification in acc. with ATEX 94/9/EC. The sensors are passive and potential free. **Delivery:** 1 Sensor **Purchase example:** for 1 room humidity sensor **Type to purchase:** 1 × FFR-2G	Sensors for installation in hazardous areas, connected to a relevant transducer, e.g. ExCos-A, RedCos-A or EXL-IMU-1. The transducer changes the passive resistance signal into an acitve 0...10 VDC/4...20 mA signal.

Sensors, connectable to ExCos-A, RedCos-A and EXL-IMU-1 transducer

Type	Function	Measuring range	Sensor	Connectable to transducers	Sensor in zone
TFR-2G	Room temperature	- 30…+ 60 °C	Pt 100 DIN	EXL-IMU-1, ExCos-A, RedCos-A	1, 2
TFR-2G3D	Room temperature (IP65)	- 40…+ 60 °C	Pt 100 DIN	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
TFK-2G3D	Duct temperature (IP65), 200 mm	- 30…+ 150 °C	Pt 100 DIN	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
TFK-2G3D-400	Duct temperature lenght 400 mm	- 30…+ 150 °C	Pt 100 DIN	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
TFT-2G3D	Probe temperature (IP65), 100 mm	- 30…+ 150 °C	Pt 100 DIN, tubing G1/2" Ms	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
TFT-V4A-2G3D	Probe temperature (IP65), 100 mm	- 30…+ 150 °C	Pt 100 DIN, tubing G1/2" VA	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
TFM-2G3D-3	Mean value temperature 3 m	- 30…+ 80 °C	Pt 1000 DIN	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
TFR-AN-2G3D	Room temperature direct contact	- 30…+ 150 °C	Pt 100 DIN	EXL-IMU-1, ExCos-A, RedCos-A	1, 2, 22
FFR-2G	Room humidity	30…100 %rF	0…1 kΩ	EXL-IMU-1, ExCos-A, RedCos-A	1, 2
FFK-2G	Duct humidity	30…100 %rF	0…1 kΩ	EXL-IMU-1, ExCos-A, RedCos-A	1, 2
TFFR-2G	Room combination temp./humidity	30…100 %rF, -10…+60 °C	0…1 kΩ, Pt 100	2× EXL-IMU-1, 2× ExCos-A, 2× RedCos-A	1, 2
TFFK-2G	Duct combination temp./humidity	30…100 %rF, -20…+60 °C	0…1 kΩ, Pt 100	2× EXL-IMU-1, 2× ExCos-A , 2× RedCos-A	1, 2
DFK-07-2G-FP	Differential pressure (IP65)	ΔP < 700 Pa	x…y Ω	EXL-IMU-1	1, 2
DFK-17-2G-FP	Differential pressure (IP65)	ΔP < 1700 Pa	x…y Ω	EXL-IMU-1	1, 2
VFK-07-2G-FP	Volume control (IP65)	0…15 m/s	x…y Ω	EXL-IMU-1	1, 2
SGR-2G	Potentiometer	Resistance	0…1 kΩ	EXL-IMU-1, ExCos-A, RedCos-A	1, 2

ExLine Ex-switching module for potential free, binary signals in zone 0, 1, 2, 20, 21, 22

Explosion proof		Features EXL-IRU-1 module	
EXL-IRU-1	**EXL-IRU-1**	**Description**	**Basics EXL-IRU-1**
Explosion proof zone 0, 1, 2, 20, 21, 22 gas + dust PTB-certified II(1)GD [EEx ia] IIC ATEX 94/9/EC		EXL-IRU-1 module with intrinsically safe circuit to change a passive potential free binary signal (e.g. contact) into a contact in the safe area. **Delivery:** 1 Ex-i module for DIN rail mounting *Accessory (optional):* binary sensors type ExSens	24 VAC/DC supply Input: passive potential free binary sensor. Output: potential free contact in the safe area Integrated time running relais 30...120 sec. 2 LED to show switching position. DIN rail mounting. Module must be installed in the safe area, sensor in the hazardous area.

EXL-IRU-1 switching module

Type	Technical data	Installation module	Installation sensor*
EXL-IRU-1	1 module (rail mounting) for 1 passive binary sensor series ExSens	Safe area zone 0, 1, 2, 20, 21, 22	
Optional:			
N1 supply unit	Input 120…230 VAC, output 24 VDC, max. 0,5 A, max. 4 pcs. EXL-IRU-1 connectable. N1 supply unit is required only in case of 120…230 VAC supply!		

* in acc. with certification of sensor!

ExSens passive binary sensors for zone 1, 2, 22

Explosion proof		Features ExSens sensors	
ExSens	**binary passive**	**Description**	**Basics for binary ExSens sensors**
Explosion proof zone 1, 2, 22 gas + dust Manufacturer certification ATEX 94/9/EC		ExSens binary sensors for temperature, humidity or pressure measurement in hazardous areas with manufacturer certification in acc. with ATEX 94/9/EC. The sensors are passive and potential free. **Delivery:** 1 Sensor **Purchase example:** for 1 frost protection thermostat **Type to purchase:** 1 × TBK-FR-2G	Sensors for installation in hazardous areas, connected to a switching module type EXL-IRU-1. The module changes the passive binary signal into a contact in the safe area. Sensor must be installed in the hazardous area, module in the safe area.

Sensors, connectable to switching module type EXL-IRU-1

Type	Function	Range	Sensor	Information	Connectable to module type	Sensor in zone
TBR-2G	Room thermostat	0…+40°C, 1K	Contact, 2-pos		EXL-IRU-1	1, 2
TBR-2G3D	Room thermostat (IP65)	-35…+30 °C, 2-20 K	Contact, 2-pos		EXL-IRU-1	1, 2, 22
TBR-2-2G	Room thermostat 2 stage	-30…+60 °C, 2-10 K	2× Contact, 2-pos		EXL-IRU-1	1, 2
TBR-AN-2G	Room temperature direct contact	-30…+60 °C, 2-20 K	Contact, 2-pos		EXL-IRU-1	1, 2, 22
TBK-2G	Duct thermostat (IP65)	0…+65°C, 2-20 K	Contact, 2-pos		EXL-IRU-1	1, 2
TBT-2G	Probe thermostat (IP54)	20…+90 °C, 2-20 K	Contact, 2-pos	L = 120 mm	EXL-IRU-1	1, 2
TBT-VA-2G	Probe thermostat with VA sleeve	0…+90°C, 3K	Contact, 2-pos	V4A	EXL-IRU-1	1, 2
TBK-FR-2G	Frost protection thermostat (IP65)	-10…+12 °C	Contact, 2-pos	capillary 6 m	EXL-IRU-1	1, 2,
FBR-2G	Room humidistat	35…100 %rH, ~ 4 %rH	Contact, 2-pos		EXL-IRU-1	1, 2
FBK-2G	Duct humidistat	35…100 %rH, ~ 4 %rH	Contact, 2-pos	L = 180 mm	EXL-IRU-1	1, 2
DBK-2G	Differential pressure	20-300, 50-500, 100-1.000 Pa	Contact, 2-pos		EXL-IRU-1	1, 2
DBK-2G3D	Differential pressure (IP65)	40-125, 100-400, 350-1.400 Pa	Contact, 2-pos		EXL-IRU-1	1, 2, 22
WFBK-2G	Air paddle	2…8 m/s, paddle V2A	Contact, 2-pos		EXL-IRU-1	1, 2
SWBT-2G	liquid flow switch	-20…+60 °C	Contact, 2-pos		EXL-IRU-1	1, 2
NBW-K-2G	Fan belt protection (IP65)	up to < 20.000 m³/h	Namur sensor + bracket		EXL-IRU-1	1, 2
NBW-G-2G	Fan belt protection (IP65)	more than > 20.000 m³/h	Namur sensor + bracket		EXL-IRU-1	1, 2

Accessories (additional price)

Type	Technical data
Installation kit 1	for frost protection sensor type TBK-FR-2G, PG entries for capillary, 6 brackets, support bracket
Installation kit 2	includes 2 meter pressure hose (inner diameter Ø 6 mm) 2 plastic fittings

SCHISCHEK
EXPLOSIONPROOF

ExMag Ex-doorholder magnets for zone 1, 2, 21, 22

Explosion proof		Features ExMag magnets		
ExMag	**Magnet**	**Description**		**Basics ExMag**

ExMag	**Magnet**	**Description**	**Basics ExMag**
Explosion proof zone 1, 2, 21, 22 gas + dust PTB-certified II2G Ex mb II T6 II2D Ex tD 21IP65 T80°C ATEX 94/9/EC		ExMag doorholder magnets are electric magnets to keep doors open or closed as long as supply voltage is available. **Delivery:** 1 magnet + accessories **Purchase example:** 650 N magnet + anchor + Ex-terminal box **Type to purchase:** 1 × EXM-650 + 1 GH 6 + 1 × EXC-K4	ExMag electric magnets. Force in acc. with type 1 m cable An Ex-e terminal box is required for electrical connection. We recommend a stabilised 24 VDC power supply. The max. AC-ripple must not exceed 20%.

ExMag magnets

Type	Force	Supply	Function	Current	Installation in
EXM - 650	650 N	24 VDC	Magnet	44 mA	Zone 1, 2, 21, 22
EXM -1300	1.300 N	24 VDC	Magnet	65 mA	Zone 1, 2, 21, 22
EXM -2000	2.000 N	24 VDC	Magnet	160 mA	Zone 1, 2, 21, 22

Accessories (additional price)

Type	Technical data
GH - 6	Anchor for EXM-650
GH - 13/20	Anchor for EXM-1300 and EXM-2000
EXC-K4	Ex-e terminal box, IP 66
EXC-K4/S	Ex-e terminal box, IP 66, with integrated fuse
EXC-T1	Ex-d push button
N1 supply unit	Input 120…230 VAC, output 24 VDC, max. 0,5 A

ExComp Different Ex-components

Explosion proof		Features ExComp components		
ExComp	**Components**	**Description**		**Basics ExComp**

ExComp	**Components**	**Description**	**Basics ExComp**
Explosion proof zone 1, 2, 21, 22 (in acc. to type) gas + dust PTB-certified ATEX 94/9/EC		Different explosion proof products like switches, frost protection thermostats, ... **Delivery:** 1 component **Purchase example:** Switch 20 A, 6 pole **Type to purchase:** 1 × EXC-R 20/6	No specific information. Data in acc. with every single product / type

ExComp components

Type	Application	Explosion proof	Technical data
EXC-T...	Thermostat	II2G EEx ed IIC T6	-30…+70 °C, different ranges and types
EXC-TF...	Frost protection thermostat	II2G EEx ed IIC T6	+4…+ 15 °C, $\Delta T = 2K$, capillary 6 m
EXC-R 10/3...	Switch	II2G EEx ed IIC T6	10 A - 230 / 400 V - 2,5 / 4,6 KW - 3 pole
EXC-R 20/3...	Switch	II2G EEx ed IIC T6	20 A - 230 / 400 V - 4,5 / 9,0 KW - 3 pole
EXC-R 20/6...	Switch	II2G EEx ed IIC T6	20 A - 230 / 400 V - 4,5 / 9,0 KW - 6 pole
EXC-R 40/3...	Switch	II2G EEx ed IIC T6	40 A - 230 / 400 V - 11 / 20 KW - 3 pole
EXC-R 40/6...	Switch	II2G EEx ed IIC T6	40 A - 230 / 400 V - 11 / 20 KW - 6 pole
EXC-R 80/3...	Switch	II2G EEx ed IIC T6	80 A - 230 / 400 V - 23 / 40 KW - 3 pole
EXC-R 80/6...	Switch	II2G EEx ed IIC T6	80 A - 230 / 400 V - 23 / 40 KW - 6 pole
EXC-RIA-261	Actual value indication	II2G EEx ia IIC T6	4...20 mA, loop powered
EXC-...	Smoke detector, duct / room	II2G EEx m II T4	24 VDC, incl. terminal box
EXC-DS1/VA	Safety temperature sensor	II2G EEx d IIC T6	Duct mounting, potential free contact, switching at 70°C…160°C (10°C steps)

Notices

Information about electrical explosionproof according ATEX 94/9/EC

Regulations for explosion protection

Explosion protection regulations in the EU member states are marked by the change of EU protection guideline 67/117/EWG ff to the two new EU guidelines 94/9/EC (ATEX 95) and 95/C 332/06 (ATEX 137). As a result of the new directives, explosion protection in European regulations there will be a harmonisation of standards. There will be a transitional period to adjust from the „old" to the „new" European law. The regulations covering the „old" law were in effect up to June 30th 2003.

Since July 1st 2003, electric explosion proof equipment must comply with ATEX Ex-protection guidelines in accordance with 94/9/EC – on the approximation of the laws of the Member States concerning equipment and protective systems for use in potentially explosive atmospheres.

Information on uniform classification of potentially explosive systems and how to use this as a basis for selecting and classifying systems and equipment, incl. their installation, can be found in guideline 1999/92/EC (ATEX 137).

ATEX: Guideline 94/9/EC of the European parliament and the Council from March 23rd 1994 brought the legislation of the member states, concerning equipment and protective systems for use in explosion risk areas, into line.

ExVO: Directive on the distribution of equipment and protection systems for potentially explosive areas – explosion protection prescription - 11.GSGV.

ElexV: Operational Safety regulation, minimum regulation in order to improve health-safety and security of employees at hazardous workplaces!

Certificates

Corresponding approvals and certificates are required for electrical explosion proof equipment. Testing must be carried out by an official testing agency (for example the PTB - Physikalisch Technische Bundesanstalt in Braunschweig / Federal German Physical and Technical Institute of Braunschweig). ATEX approvals are also accepted in many countries and states outside Europe.

Responsibilities

The responsibility for compliance with all regulations and guidelines, from production to planning, up until installation, operation and maintenance, has greatly increased

Each individual must be conscious about the fact that he accepts personal responsibility as part of a total project:

• building owner
• end-user
• architect
• consulting engineer / control company
• inspection authority
• contractor / installer
• manufacturer
• product supplier
• maintenance engineers

The type plate and its components

The type plate and its components

From 1/7/2003 the new ATEX guidelines come into force. The then current legal bases for the certification and labelling of electric explosion proof equipment is the EC guideline:

Example, for the labelling of a quarter turn actuator:

Manufacturer's name, manufacturer's address, designation of type, electrical data (V, A, W, Hz) ambient temperature if different from - 20 to + 40°C, unit serial number, in addition to the classification of Ex protection.

www.schischek.com	SCHISCHEK
ExMax-15-SF	Ⓔ II2G EEx d ia IIC T6 / (T5)
	Ⓔ II2D IP66T80°C
24...230 VAC/DC, 15 Nm, size S	PTB 04 ATEX 1028X CE 0158
Ta = - 40 ... + 40 / (+50) °C, IP 66	90579 Langenzenn, Germany
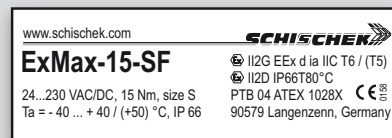
Correct installation

For the installation of electrical systems in areas with explosive gas atmospheres of group II, rule IEC 60 079-14 (EN 60079-14) will apply.

Electric circuits of protection types d, e, q, o, m, p
Installation in the panel is identical to „standard" installation, however the procedures for connecting Ex equipment must be followed. This refers, for example to voltage, current, fuses and motor protection equipment, etc. The requirements for specific products must be taken from their corresponding test certificates, standards and prescriptions as well as from the guidebook. It is only permitted to work on electric circuits within the Ex-area (for example when connecting to Ex-e terminal box if the voltage has been switched off). An Ex-e terminal box should only be opened after the voltage has been switched off.

**Electric circuits of protection type „i"
(intrinsically safe)**
For the planning and operation of switchgears and control systems installed in the safe area, but which contain circuits leading into the Ex-area, certain requirements should be considered. This applies especially to intrinsically safe circuits. Intrinsically safe circuits and non-intrinsically safe circuits should be kept separate. Minimum distances (distances) between bare connections must be observed, the cables must not produce any inadmissible external inductance or capacitance. The maximum admissible electrical limits of Ex-i equipment must be observed at all times. Intrinsically safe and non-intrinsically safe electrical circuits should not cross, however it is allowed between two intrinsically safe circuits. Intrinsically safe circuits must be clearly marked. Intrinsically safe circuits are marked by a „light blue" color. This color is recommended for all

intrinsically safe circuits to prevent confusion and / or linking up to a non-intrinsically safe circuit. Examples: cabels, cables, cable conduits, dampers, connection boxes, cable connectors,...
A minimum distance of 50 mm should be allowed between intrinsically safe and non-intrinsically safe circuits, and a minimum distance of 6 mm between two different intrinsically safe circuits. During installation the cables of intrinsically safe and non-intrinsically safe circuits should be laid out separately!

Suggestion on how to create a pannel
It is necessary to keep intrinsically safe and non-intrinsically safe equipment separate. It is recommended, in this case, that a sufficient distance be kept, to avoid extra costs in the future.
Large transformers, frequency rectifiers, large relays and other electric equipment that may influence intrinsically safe circuits by inductance or capacitance should be installed at a sufficient distance. As a precaution Ex-i equipment should have a suitable cover to protect it from incorrect handling. The appropriate standards and regulations must be observed.

ATEX
Atmosphère
Explosible
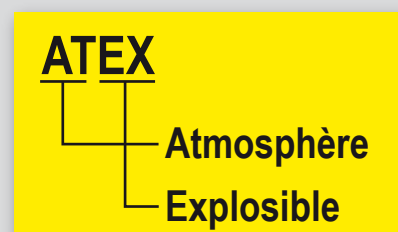
Information about electrical explosion-proof according ATEX 94/9/EC

Classification and labelling of explosion proof areas

Classification and labelling of explosion proof areas

Flammable medium	Hazardous locations Probability of a potential explosive atmosphere occuring	Classification of explosion proof areas	Product classification		
			Product group	Product category	
Gases, vapours, mists	Always, temporarily or often present	Zone 0	II	1G	
	Occasionally present	Zone 1	II		2G
	Very seldom or only present for a short period	Zone 2	II		3G
Dusts	Always, temporarily or often present	Zone 20	II	1D	
	Occasionally present	Zone 21	II		2D
	Does not occur or only seldom for a short period	Zone 22	II		3D

Official institutes

Country (Example)	code number	Institute Notified Body
Germany	0102	PTB
Germany	0158	EXAM

Example:

CE 0158

Classification of areas, haz. due to flamm. gases, vapours, mists

Classification of areas, hazardous due to flammable gases, vapours, mists

Explosion group			Examples depending on - explosion group - temperature class				
IIA			Ammoniak Methan Ethan Propan	Ethylalcohol Cyclohexene n-Butane	Petrol Diesel fuel Fuel oil n-Hexane	Acetaldehyd	
	IIB		City gas Acrylic nitrile	Ethylene Ehtylenoxyd	Ethylglycol Carbon hydrogen	Ethylether	
		IIC	Hydrogen	Acetylene			Carbon disulphide

Attention: this list is only an extract of possible flammable mediums and makes no claim to be complete !

Temperature class
T1<450°C
T2 < 300 °C
T3 < 200 °C
T4 < 135 °C
T5 < 100 °C
T6 < 85 °C

Product use depending on temperature class (T1 - T6). The temperature class indicates the max. temperature of the exposed surface of the product. At dust explosion proof is the max. surface temperature direct shown.(e.g. T80°C)

II 2G Ex d ia IIC T6 PTB 04 ATEX 1028 -
II 2D Ex tD A21 IP66 T80 °C

Protection principle	Type of protection	Code	Symbol	To use in zone	CENELEC	IP	Protection against solids/dust	Protection against water	Application	Code
Prevents transmission of the explosion outside	flameproof enclosure	Ex d		1 or 2	EN 60079-1	8	-	protected against long periods of immersion	For common use	-
Prevents high temperatures and sparks	increased safety	Ex e		1 or 2	EN 60079-7	7	-	protected against the effects of temporary immersion		
Low current / voltage supply	intrinsic safety	Ex i Ex iD		0, 1 or 2*	EN 60079-11 EN 61241-11	6	totally protected against dust	protected against strong jets of water	For use under special circumstances	X
Positive pressure device	pressurised apparatus	Ex p Ex pD		1 or 2	EN 60079-2 EN 61241-4	5	protected against dust - limited ingress	protected against low pressure jets from all directions		
Encapsulated	moulding	Ex m Ex mD		1 or 2	EN 60079-18 EN 61241-18	4	protected against solids objects > 1 mm	protected against sprays from all directions	This product is an Ex-certified component for use in a complete system.	U
Parts immersed in oil to isolate from explosive atmosphere	oil immersion	Ex o		1 or 2	EN 60079-6	3	protected against solids objects > 2,5 mm	protected against direct sprays up to 60° from vertical		
Prevents transmission of explosion outside	powder filling	Ex q		1 or 2	EN 60079-5	2	protected against solids objects > 12,5 mm	protected against direct sprays up to 15° from vertical		
As above, but for use in zone 2	protection „n"	Ex n		2	EN 60079-15	1	protected against solids objects > 50 mm	protected against vertical falling drops of water		
Dust explosion proof	protection „tD"	Ex tD		20, 21 22	EN 61241-1	0	no protection	no protection		

Protection principle - Type of protection - CENELEC regulations, Basic rule EN 60079-0	Ingress Protection EN 60529	Further information

* **ia** in zones 0, 1 and 2   **ib** in zones 1 and 2

Where and when do I have to take explosion proof into consideration?

## Explosion proof means: „Preservation of Life. Health. Basic values"

When can a danger of explosion occur?
A danger of explosion occurs when a flammable medium (gas, vapor, mist or dust) in a dangerous quantity is present.

What creates an explosion?
An explosion may occur when the following 3 components are present at the same time:

- Explosive atmosphere
- Source of ignition
- Air (oxygen)
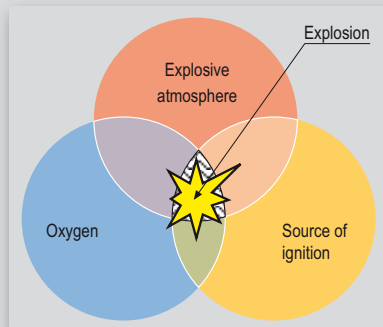
Typical sources of ignition
Very often the reason for accidents is self-ignition, extraordinary surface temperatures and sparks due to mechanical reasons. But there are also a lot of other sources of ignition, caused by either mechanical and/or electrical equipment.
These are for example:

- Self-ignition
- Extraordinary surface temperatures
- Open flames
- Sparks caused by mechanical reasons
- Static electricity
- Lightning strike
- Ultra-sonic
- Chemical sources of ignition
- Electric sparks
- Electric arcs
- Adiabatic compression
- Adiabatic shock waves
- Electric balancing power

Is your system safe?

We have the following situation NOW or in the FUTURE:

Yes.No (Please check)

- ☐ ☐ Flammable materials are stored.
- ☐ ☐ Flammable materials are used.
- ☐ ☐ Flammable materials are bottled.
- ☐ ☐ Flammable materials are used during the cleaning process.
- ☐ ☐ Flammable materials are used in the production process.
- ☐ ☐ Flammable materials will be produced during the production process.

6 x „No": Obviously you do not need explosion proof

at least 1 x „YES":
When planning you have to consider rules, regulations and instructions concerning explosion proof

Example: BetrSichV, ExVO, EX-RL

Remarks:
All information, tables, checklists and further documentation are only for your assistance and do not claim to be complete. In no way do they replace official regulations and rules or even laws by the authorities. We want to point out that it is very important to undertake all measures for an exact classification of the Ex-area.

Typical Applications:

- Chemical, pharmaceutical and industrial plants
- Refineries, petrol depots, gas stations
- Paint and solvent shops
- Drying and coating cabinets
- Laboratories in industry and schools
- Water treatment works, power plants
- Compressor stations, gas works
- All kinds of storekeeping and stocks
- All kinds of filling stations
- All kinds of cleaning stations
- Mills, silos, silos for bulk goods
- Offhore and onshore
- Oil and gas pipelines
- Printing works, food industry, …

Schedule:

- Analyse whether you need explosion proof or not
- Ask experts in order to analyse the risk of danger
- Define zones, areas, categories, explosion groups and temperature classes
- Planning according to all necessary rules and regulations
- Choose the best supplier and the right product
- Keep to the installation rules
- Check the labelling of the equipment
- Make sure that the appliance will be put into operation correctly
- Confirm a final inspection by the responsible authority
- Guarantee regular and correct maintenance according to the regulations
- The correct documentation has to be maintained

From fire to detonation
Effect and reaction velocity increase significantly from fire, outburst flame, via ignition and explosion up to detonation. Explosions are more likely with gaseous media and detonations by dust media.
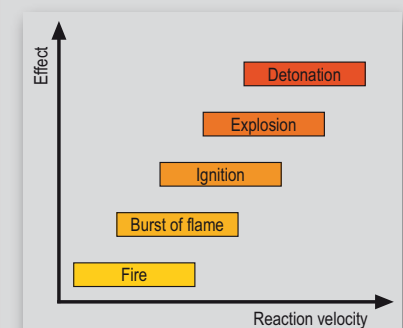
Zones • Explosion groups • Temperature classes

Implementation

Potentially explosive areas should be divided into zones, and the equipment should be divided into groups and categories. The labelling on the identification plate of certified equipment indicates in which zone the explosion proof equipment can be used.

Division into product groups

Groups are divided into group I and group II. Group I consists of mining „underground" and group II deals with prevention of gas and dust explosion protection for all other applications.

Division into zones

Potentially explosive areas are divided into six zones, according to time-related and local probability, that a potentially explosive atmosphere (p.e.a.) exists.

A distinction is made between combustible gases, mists, vapors and combustible dust. The zones are described in the accompanying table.

Gases, mists and vapors are placed in zones 0, 1 and 2, whereby the requirements for the chosen equipment increase from zone 2 to 0. Equipment in zone 0 must be built in a way „that even if a type of protection fails or if two faults occur, that sufficient explosion protection is guaranteed". Therefore for example a passive, potential free sensor, installed in zone 0, and connected to an intrinsically safe electric circuit (II2(1)G [EExia] IIC), must display current approval.

Zones 20, 21 und 22 are for dust, whereby the requirements for the chosen equipment increase from zone 22 to 20. Equipment in zone 20 and 21 need special approval.

Division into product groups

Product groups determine, in which zones the equipment should be installed. Once again there are six categories. Categories 1G, 2G and 3G are classifications for gas explosion protection (G = Gas); to which equipment with 1G for zone 0, 1 and 2, equipment with 2G for zone 1 und 2 and equipment with 3G for zone 2 are suited. Categories 1D, 2D and 3D are classifications for dust explosion protection (D = Dust); to which equipment with 1D for zone 20, 21 and 22, equipment with 2D for zone 21 and 22 and equipment with 3D for zone 22 are suited.

Classification and labelling of explosion proof areas

Flammable medium	Hazardous locations Probability of a potential explosive atmosphere occuring	Classification of explosion proof areas	Product classification		
			Product group	Product category	
Gases, vapours, mists	Always, temporarily or often present	Zone 0	II	1G	
	Occasionally present	Zone 1	II	1G / 2G	
	Very seldom or only present for a short period	Zone 2	II	2G / 3G	
Dusts	Always, temporarily or often present	Zone 20	II	1D	
	Occasionally present	Zone 21	II	1D / 2D	
	Does not occur or only seldom for a short period	Zone 22	II	2D / 3D	

Zone 0, 1 and 2

Zone 2 · Zone 1 · Zone 0 · Gases-Mist-Vapours · Safe area

An Example of a typical zone activity would be filling a barrel of petrol in an enclosed area.

Zone 20, 21 and 22


Zone 22 · Zone 21 · Zone 20 · Dust · Safe area
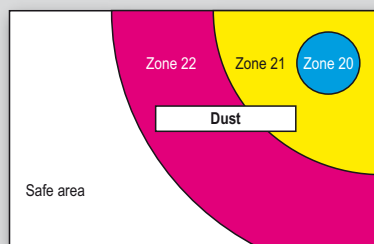
An example of a typical zone activity would be filling a grain silo in an enclosed area.

Explosion groups, temperature classes

The equipment groups and categories determine, in which zones the equipment should be installed, therefore the explosion groups and temperature classes determine, to which mediums inside the zones, the equipment is suited. The type of protection used is not a mark of quality but is instead a constructive solution for selecting equipment for explosion protection.
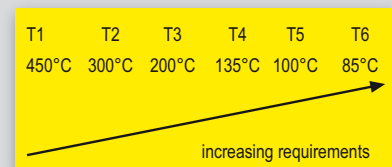
Division into explosion groups

Explosion proof equipment for gases, mists and vapors is divided into three explosion groups (IIA-IIB-IIC) according to the type of protection being used. The explosion group is a means to measure the ignitability of gases (potentially explosive atmospheres). The equipment requirements increase from II A to II C.

II A   II B   II C

increasing requirements
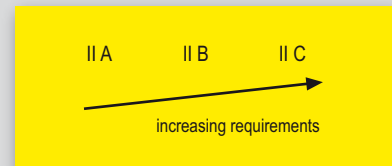
Division into temperature classes

Explosion proof equipment, installed within the Ex area, is divided into 6 temperature classes (T1 to T6). Temperature class is not – as it is often wrongly believed – the operating temperature range of the equipment, but the maximum permissible surface temperature of the equipment, in relation to + 40°C ambient temperature on any surface area, and should not be exceeded at any time. The maximum surface temperature must remain below the ignition temperature of the surrounding medium at all times. The equipment requirements rise from T1 to T6.

T1	T2	T3	T4	T5	T6
450°C	300°C	200°C	135°C	100°C	85°C

increasing requirements

Application

Air safety dampers • Air control dampers • Fire / smoke dampers

Air damper control
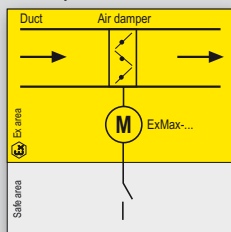
Schischek actuators are approved for direct installation and operation in explosion risk areas, as they are of the highest explosion groups and temperature class and are suitable for all gases, vapors, steam and dust. The electrical connection is made via an explosion proof terminal box (type ExBox-...). Please ensure during installation that all cables are securely fixed and connected in such a way that they are protected from mechanical damage.

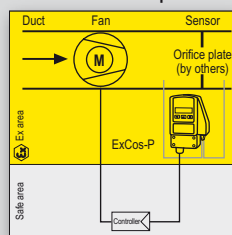### Automatic air damper control
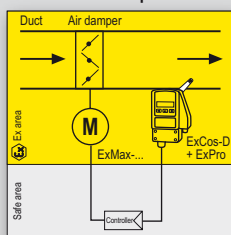
In this example the control system consists of an actuator and a ExCos-D transducer with ExPro probe.
The combination can be installed directly into the Ex area.
The transducer converts the probe signal into an active signal (0...10 VDC or 4...20 mA) for input in a PLC systems.
The output signal from the controller goes directly to the actuator. Between sensor and controller is no additionally Ex i module and also no intrinsically safe (IS) wiring methode required.
For the actuator and transducer the maximum permissible surface temperatures have to be taken into account.

Control of fire / smoke dampers
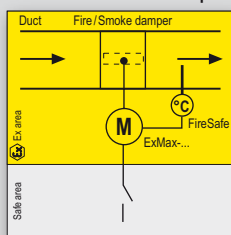
In applications for fire/smoke dampers, the actuator has to reliably return the damper to its safety position via an external switch / contact. The actuator will return the damper to its safety position by an internal spring. The contact comes from a safety thermal trigger type FireSafe which is direct connenced to the actuator.

Heating • Cooling • Humidification • VAV control

Heating - cooling control
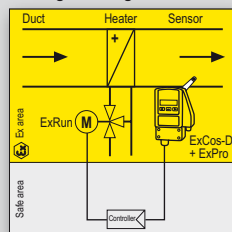
In this example the control system consists of an actuator and a ExCos-D transducer with ExPro probe.
The combination can be installed directly into the Ex area.
The transducer converts the probe signal into an active signal (0...10 VDC or 4...20 mA) for input in a PLC systems.
The output signal from the controller goes directly to the actuator. Between sensor and controller is no additionally Ex i module and also no intrinsically safe (IS) wiring methode required.
For the actuator and transducer the maximum permissible surface temperatures have to be taken into account.

Humidity control
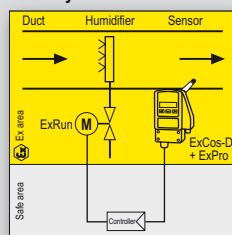
In this example the control system consists of a valve actuator and an ExCos-D transducer with ExPro probe.
The combination can be installed directly into the Ex area.
The transducer converts the probe signal into an active signal (0...10 VDC or 4...20 mA) for input in a PLC systems.
The output signal from the controller goes directly to the actuator. Between sensor and controller is no additionally Ex i module and also no intrinsically safe (IS) wiring methode required.
For the actuator and transducer the maximum permissible surface temperatures have to be taken into account.

VAV and differencial pressure control

In this example the control system consists of an actuator and a differential pressure ExCos-P transducer.
The combination can be installed directly into the Ex area.
The transducer converts the differential pressure signal into an active signal (0...10 VDC or 4...20 mA) for input in a PLC systems. The output signal from the controller goes directly to the actuator. Between sensor and controller is no additionally Ex i module and also no intrinsically safe (IS) wiring methode required. The controller, situated in the safe area will, depending on changing circumstances being monitored, control a fan (must be Ex proof) or a modulating damper actuator (also Ex proof) to maintain the required air volume / pressure.
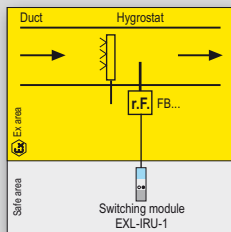
Thermostats • Humidistats • Pressurestats • Filter protection

Thermostats
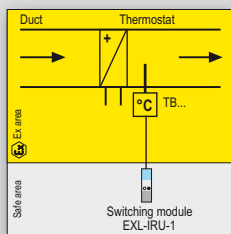
Thermostats are passive switching equipment without any electrical energy supply of their own (type TB...). The switching function is performed mechanically. The integrated switches are within a circuit designed as intrinsically safe by using a switching module (type EXL-IRU-1). The switching module should be installed in the safe area. The output contact can be used for sequence functions (relays, contacts, direct circuit..).

Hygrostats

Hygrostats are passive switching equipment without any electrical energy supply of their own (type FB...). The switching function is performed mechanically. The integrated switches are within a circuit designed as intrinsically safe by using a switching module (type EXL-IRU-1). The switching module should be installed in the safe area. The output contact can be used for sequence functions (relays, contacts, direct circuit..).
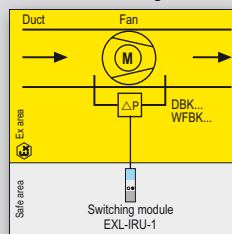
Filter monitoring
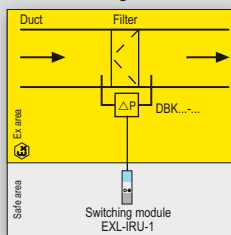
For monitoring air filters in hazardous areas, only passive differential pressure switches (type DBK...) can be used. The switching function is mechanical and is an intrinsically safe (IS) circuit that is supplied via a switching module (EXL-IRU-1). The switching module must be installed in the safe area. The output function can be used for switching relays, contacts etc.

Fan belt protection • Frost protection

### Drive belt monitoring with differential pressure sensor / air paddle

For monitoring fans in hazardous areas, only passive differential pressure switches (DBK-...) or air paddle (type WFBK-...) can be used. The switching function is mechanical and is an intrinsically safe (IS) circuit that is supplied via a switching module (EXL-IRU-1). The switching module must be installed in the safe area. The output function can be used for switching relays, contacts etc. Switching modules to indicate fan failure, are delivered with integrated time running relay with delay on start up.

Drive belt monitoring with inductive sensor
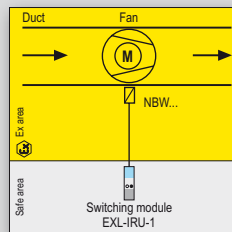
For monitoring fans contact less in hazardous areas, only inductive sensors (NBW-...) can be used. The switching function is mechanical and is an intrinsically safe (IS) circuit that is supplied via a switching module (EXL-IRU-1). The switching module must be installed in the safe area. The output function can be used for switching relays, contacts etc. Switching modules to indicate fan failure, with integrated time running relay with delay on start up, monitor the fan shaft rotation via a inductive sensor.

Frost protection
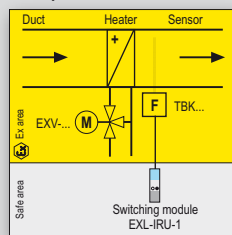
For frost protection in hazardous areas you can use a frost thermostat (type TBK-...) in the duct together with a switching module (type EXL-IRU-1). The passive sensor in the hazardous area is connected via an intrinsically safe circuit (IS) to the switching module , mounted in the safe area. The output contact can be used to follow up functions (relays, contacts, ect…).

Headquarter

Manufacturing and Sales EU

Schischek GmbH
Mühlsteig 45
Gewerbegebiet V
90579 Langenzenn
Germany
Tel. +49 9101 9081-0
Fax +49 9101 9081-77
info@schischek.de
www.schischek.de

Sales worldwide (outside EU)

Schischek AG
Fuchsacker 678
9426 Lutzenberg
Switzerland
Tel. +41 71 8886450
Fax +41 71 8886452
info@schischek.ch
www.schischek.ch

Subsidiaries

Sales United Kingdom

Schischek Ltd.
Kenmore House,
Navigation Road,
Chelmsford,
Essex.
CM2 6HX
United Kingdom
Tel. +44 1245-256007
Fax +44 1245-265374
info@schischek.co.uk
www.schischek.co.uk

Sales France

Schischek SARL Antidéflagration
108 Rue Damrémont
75018 Paris
France
Tel. +33 1 42526102
Fax +33 1 42526116
info@schischek.fr
www.schischek.fr

Sales Italy

Schischek s.r.l.
Via Adelasio 22
24020 Ranica (BG)
Italy
Tel. +39 0 35 4123408
Fax +39 0 35 4123408
info@schischek.it
www.schischek.it

Subsidiaries

Sales Singapore

Schischek AG
Singapore Representative Office
10, UBI Crescent, 07 - 44
UBI Techpark, Lobby ‚C‘
Singapore - 408 564
Tel. +65 67498494
Fax +65 67498497
info@schischek.com.sg
www.schischek.com

Appointed Distributor