TRO X® TECHNIK

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Constant Volume Flow Rate Controller Type RN-Ex
Operating Instructions

RN-Ex

The system-powered constant volume flow rate controllers type RN in explosion-proof construction are ATEX-approved for use in supply and exhaust air ventilation systems in potentially explosive atmospheres.

The RN-Ex controllers are certified for explosion protection group II for zones 1, 2 & 21, 22.

Zones 1 and 2 apply to situations with gases, while zones 21 and 22 apply to situations with dusts.

The zones are classified by the operator or designer in compliance with applicable standards.

The RN-Ex type controllers bear the following ATEX certification:

⟨Ex⟩ **II 2 GD Ex cT6 80 °C**   CE **TÜV 05 ATEX 7159 X**

Note:

Equipment used in systems which pass through/serve explosion protection zones must be certified for this type of use. Approval must be granted by a designated authority and be ATEX-certified.

General Description

Trox type R volume flow rate controllers are system-powered controllers for constant volume systems. The volume flow rate controller operates without an external power supply. A control blade supported in bearings maintains a preset volume flow constant over the entire differential pressure range.

The aerodynamic closing forces on the control blade generate a closing torque. An inflatable control bellows amplifies this force and acts as an oscillation damper. A leaf spring acts against this closing torque through a cam plate. The cam plate is calibrated so that as the pressure difference changes, the angle of the control blade is set so that the volume flow remains constant within close tolerances.

The nominal volume flow can easily be set externally without tools using the scale. For easier site installation, controllers can be ordered and installed by size. The required volume flow is then simply and accurately set during commissioning.
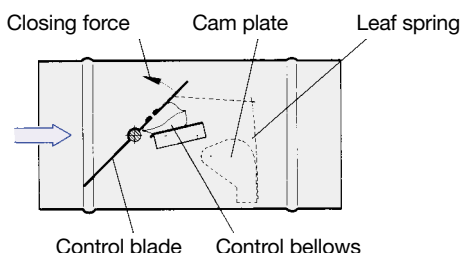
The RN controllers are also available with acoustic cladding to reduce case-radiated noise. To meet more demanding acoustic requirements, the CA or CS attenuators can also be used.

Notes and Information on the RN-Ex:

– The RN-Ex Supplementary Installation and Operating Instructions, document no. E016EA7, is included with the unit and should be read carefully prior to installation.
– Certification is valid only for the constant volume flow rate construction. RN-Ex controllers can *not* be ordered or retrofitted with a motorized adjustment mechanism.
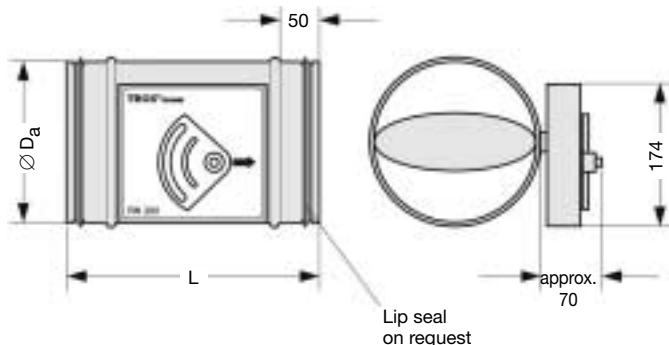– Connect the earthing of the RN-Ex unit to the equipotential.

Technical Data
– Operating temperature 10 to 50 °C
– Differential pressure range from 50 to 1000 Pa
– For other technical and acoustic data, see RN standard leaflet 5/9/EN/...

Closing force   Cam plate   Leaf spring

Control blade   Control bellows

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Dimensions in mm		
D	**Ø D_a**	**L**
80	79	310
100	99	310
125	124	310
160	159	310
200	199	310
250	249	400
315	314	400
400	399	400

Aerodynamic data					Acoustic data, quick selection in dB(A) at Δp_g = 250 Pa				
					Air-regenerated noise			Case-radiated noise	
D	**l/s**	**m³/h**	**Δ V in ± %**	**Δ $p_{g\,min}$ in Pa**	**without attenuator**	with CF attenuator		**without acoustic cladding**	**with acoustic cladding**
						500 lg.	**1000 lg.**		
80	11	40	20	100	37	18	<	24	<
	28	101	11	100	43	28	17	30	<
	45	162	8	100	48	36	27	35	<
100	22	80	10	50	36	24	15	23	<
	56	202	7	50	45	34	28	32	<
	90	324	5	50	51	42	36	38	16
125	35	126	10	50	40	29	22	21	<
	88	317	7	50	49	40	34	30	<
	140	504	5	50	53	45	40	34	<
160	60	216	10	50	44	35	29	35	<
	150	540	7	50	52	46	42	43	21
	240	864	5	50	55	48	44	46	24
200	90	324	10	50	46	35	27	37	15
	225	810	7	50	50	46	38	41	19
	360	1296	5	50	56	51	42	47	25
250	145	522	10	50	48	40	31	39	17
	363	1307	7	50	52	47	39	43	21
	580	2088	5	50	57	52	46	48	26
315	230	828	10	50	47	40	37	38	16
	575	2070	7	50	54	49	43	45	23
	920	3312	5	50	58	55	49	49	27
400	350	1260	10	50	46	47	45	41	19
	875	3150	7	50	60	49	43	55	33
	1400	5040	5	50	65	61	55	60	38

< indicates values less than 15

Order code

RN-Ex	/	**125**	/	

Type
Volume flow rate controller — RN-Ex
with acoustic cladding — RND-Ex

D

Materials
Basic construction galvanised steel, no entry required
Stainless steel — A2
Surface powder-coated — P1
(RAL 7001)

Accessories
no entry required — without, basic construction
D2 — Lip seal