

TROX GmbH

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Constant Volume Flow Rate Controller Type EN-Ex Operating Instructions

EN-Ex



Note:

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

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

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

 II 2 GD Ex cT6 80°C  TÜV 05 ATEX 7159 X

General Description

Trox type E 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.

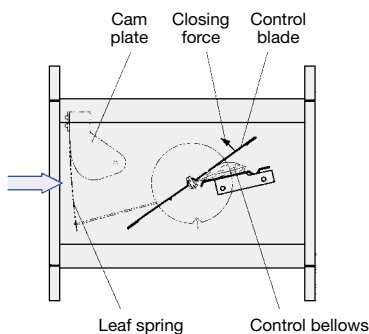
The EN controllers are also available with acoustic cladding to reduce case-radiated noise. To meet more demanding acoustic requirements, the TX attenuator can also be used.

Notes and Information on the EN-Ex:

- The EN-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. EN-Ex controllers can *not* be ordered or retrofitted with a motorized adjustment mechanism.
- Connect the earthing of the EN-Ex unit to the equipotential.

Technical Data

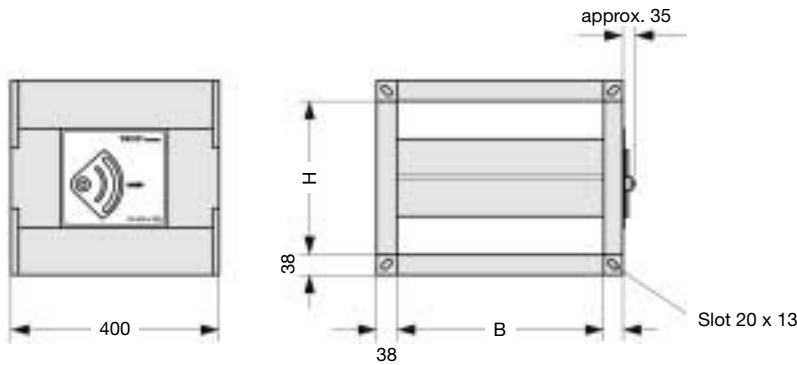
- Operating temperature 10 to 50 °C
- Differential pressure range from 50 to 1000 Pa
- For other technical and acoustic data, see EN standard leaflet 5/9.1/EN/...



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Aerodynamic data					Acoustic data, quick selection in dB(A) at $\Delta p_g = 250$ Pa			
D	l/s	m ³ /h	ΔV in \pm %	$\Delta p_{g, min}$ in Pa	Air-regenerated noise		Case-radiated noise	
					without attenuator	with attenuator TX	without acoustic cladding	with acoustic cladding
200 x 100	40	144	13	50	40	24	31	24
	100	360	7	50	47	36	38	31
	160	576	5	50	52	43	43	36
300 x 100	65	234	13	50	43	26	34	27
	163	587	7	50	50	38	41	34
	260	936	5	50	54	46	45	38
300 x 150	105	378	13	50	46	29	36	29
	263	947	7	50	52	41	42	35
	420	1512	5	50	57	48	47	40
300 x 200	130	468	13	50	51	30	39	32
	325	1170	7	50	56	41	44	37
	520	1872	5	50	59	47	47	40
400 x 200	210	756	13	50	50	31	38	31
	525	1890	7	50	55	41	43	36
	840	3024	5	50	58	48	46	39
500 x 200	230	828	13	50	48	29	36	29
	575	2070	7	50	53	40	41	34
	920	3312	5	50	56	46	44	37
600 x 200	255	918	13	50	46	29	34	27
	638	2297	7	50	51	40	39	32
	1020	3672	5	50	55	46	43	36
400 x 250	220	792	13	50	52	31	39	32
	550	1980	7	50	56	42	43	36
	880	3168	5	50	59	48	46	39
500 x 250	300	1080	13	50	51	31	38	31
	750	2700	7	50	56	42	43	36
	1200	4320	5	50	59	48	46	39
600 x 250	320	1152	13	50	49	30	36	29
	800	2880	7	50	54	41	41	34
	1280	4608	5	50	58	48	45	38

Aerodynamic data					Acoustic data, quick selection in dB(A) at $\Delta p_g = 250$ Pa			
D	l/s	m ³ /h	ΔV in \pm %	$\Delta p_{g, min}$ in Pa	Air-regenerated noise		Case-radiated noise	
					without attenuator	with attenuator TX	without acoustic cladding	with acoustic cladding
400 x 300	315	1134	13	50	55	34	42	35
	788	2837	7	50	60	45	47	40
	1260	4536	5	50	63	51	50	43
500 x 300	375	1350	13	50	53	33	40	33
	938	3377	7	50	58	43	45	38
	1500	5400	5	50	61	50	48	41
600 x 300	420	1512	13	50	51	32	38	31
	1050	3780	7	50	56	42	43	36
	1680	6048	5	50	59	49	46	39
400 x 400	420	1512	13	50	58	37	45	38
	1050	3780	7	50	63	47	50	43
	1680	6048	5	50	66	54	53	46
500 x 400	460	1656	13	50	56	35	42	35
	1150	4140	7	50	61	45	47	40
	1840	6624	5	50	64	52	50	43
600 x 400	510	1836	13	50	54	33	40	33
	1275	4590	7	50	59	44	45	38
	2040	7344	5	50	62	50	48	41
500 x 500	600	2160	13	50	59	38	45	38
	1500	5400	7	50	64	48	50	43
	2400	8640	5	50	67	55	53	46
600 x 500	640	2304	13	50	57	36	43	36
	1600	5760	7	50	62	46	48	41
	2560	9216	5	50	65	53	51	44
600 x 600	840	3024	13	50	60	39	45	38
	2100	7560	7	50	65	49	50	43
	3360	12096	5	50	68	56	53	46

Order code

Type _____

Volume flow rate controller
with acoustic cladding

Materials _____

Basic construction, galvanized steel, no entry required
Surface powder-coated (RAL 7001)

EN-Ex / 300 x 200

EN-Ex
END-Ex

B x H

P1