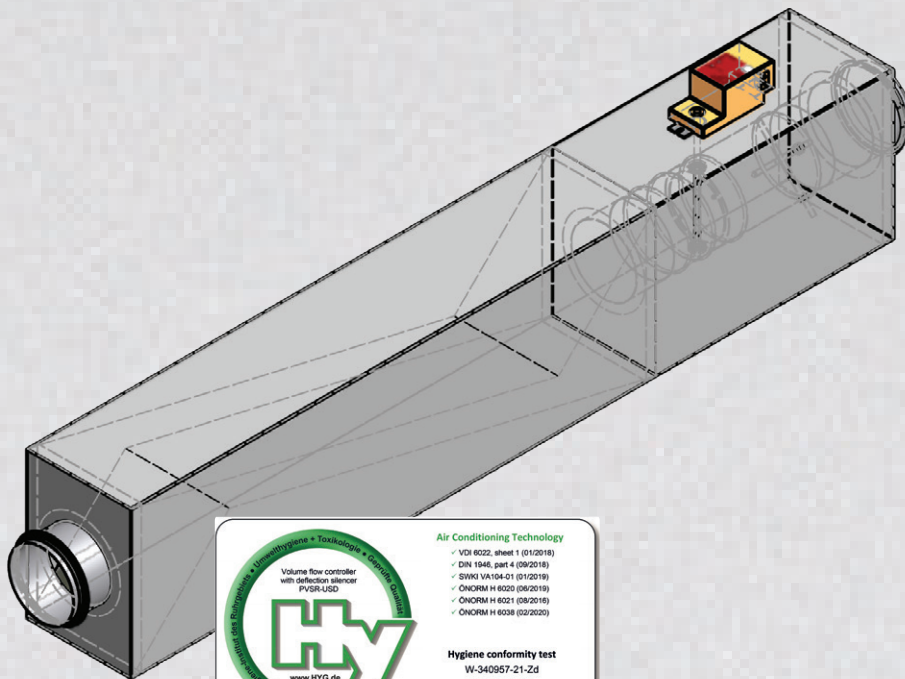


PVSR-USD VOLUME FLOW CONTROLLER REDIRECT MUFFLERS

**AIR
CONDUCTION**



HYG
Volume flow controller
with deflection silencer
PVSR-USD
www.HYG.de

Air Conditioning Technology

- ✓ VDI 6022, sheet 1 (01/2018)
- ✓ DIN 1946, part 4 (09/2018)
- ✓ DIN EN 1819-21 (01/2019)
- ✓ ONORM H 6020 (08/2019)
- ✓ ONORM H 6021 (08/2019)
- ✓ ONORM H 6038 (02/2020)

Hygiene conformity test
W-340957-21-Zd
Validity period:
04/2021 – 04/2026

 **PICHLER**

Systematic ventilation.

Product Description

The volume flow controller with redirect muffler PVSr-USD \varnothing 100 / \varnothing 125 / \varnothing 160 for VAV/CAV applications comprises:

- An inner part designed as a diversion chamber with acoustically and flow-optimised splitters
- Splitters with wear-resistant, moisture repellent surface glass silk surface with absorption and resonance elements for optimal sound damping
- Housing made of zinc-plated sheet steel with fitted control butterfly valve and shut-off function
- Control valve with all-round non-ageing and permanently elastic seal
- Reading recorder with mean-value calculating differential pressure sensor and control components

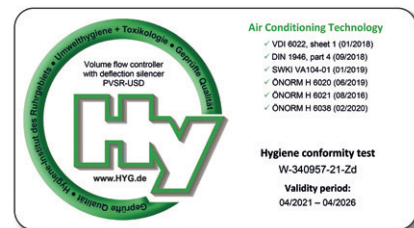
- Control flap in shut-off position airtight, Class 3 as per \ddot{O} NORM EN 1751
- Connecting piece for plug fitting with dual lip-seal
- Delivery with caps on the connectors to protect against dust and dirt
- Technical details with test report from Lucerne University, test report number HP-09855/2

Customer-specific defaults for control parameters, such as air volume flows V_{\min} , V_{\max} and V_{mid} with factory setting.

An air inspection of every device unit is conducted on a specially adapted test rig. Subsequent adjustment of the parameters for commissioning on-site is easy to arrange.

EXTERNAL INSPECTION

The construction design complies with hygiene requirements as stipulated in the guidelines contained in VDI 6022 (Blatt 1 01/2018), SWKI VA104-01 (01/2019), DIN 1946-4 (09/2018), \ddot{O} NORM H 6021 (08/2016), \ddot{O} NORM H 6020 (06/2019) and \ddot{O} NORM H 6038 (02/2020), and is in accordance with performed expert appraisals on hygiene.



Application area

The PVSr-USD compact unit with integrated VAV/CAV compact regulator, with MP bus interface, for variable or constant air volume flow systems with control valve and airtight shut-off function, is suitable for room air and for the position independent installation into air supply and extract air.



Design

The difference between the air supply and extract air lies in the positioning of the differential pressure pickup.

Optionally, a extract air can be activated via a Master-Slave sequential circuit on the VAV compact regulator in parallel with the air supply unit (that assumes the reference value in this case).

NOTE THE AIR DIRECTION DURING THE INSTALLATION.

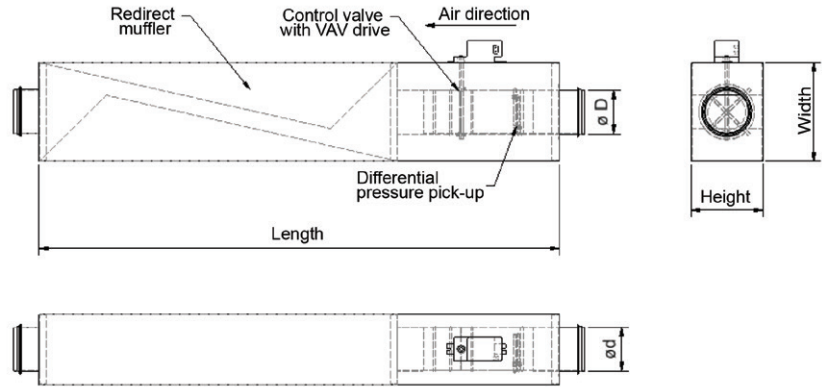


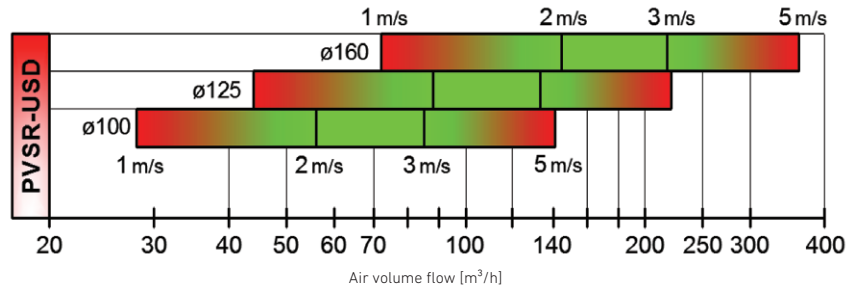
Figure: PVSr-USD combination as air supply unit

Item no.	Beschreibung	Volume flow (m ³ /h)	Ø D (mm)	B (mm)	H (mm)	L (mm)	Weight (kg)
10PVSrUSDZ100	Supply air, without MP-Bus, External Inspection	30...140	100	280	200	1500	Approx. 20
10PVSrUSDZ125	Supply air, without MP-Bus, External Inspection	45...220	125	280	200	1500	Approx. 22
10PVSrUSDZ160	Supply air, without MP-Bus, External Inspection	85...360	160	260	280	1600	Approx. 30
10PVSrUSDA100	Extract air, without MP-Bus, External Inspection	30...140	100	280	200	1500	Approx. 20
10PVSrUSDA125	Extract air, without MP-Bus, External Inspection	45...220	125	280	200	1500	Approx. 22
10PVSrUSDA160	Extract air, without MP-Bus, External Inspection	85...360	160	260	280	1600	Approx. 30
10PVSrBUSDZ100	Supply air, with MP-Bus, External Inspection	30...140	100	280	200	1500	Approx. 20
10PVSrBUSDZ125	Supply air, with MP-Bus, External Inspection	45...220	125	280	200	1500	Approx. 22
10PVSrBUSDZ160	Supply air, with MP-Bus, External Inspection	85...360	160	260	280	1600	Approx. 30
10PVSrBUSDA100	Extract air, with MP-Bus, External Inspection	30...140	100	280	200	1500	Approx. 20
10PVSrBUSDA125	Extract air, with MP-Bus, External Inspection	45...220	125	280	200	1500	Approx. 22
10PVSrBUSDA160	Extract air, with MP-Bus, External Inspection	85...360	160	260	280	1600	Approx. 30

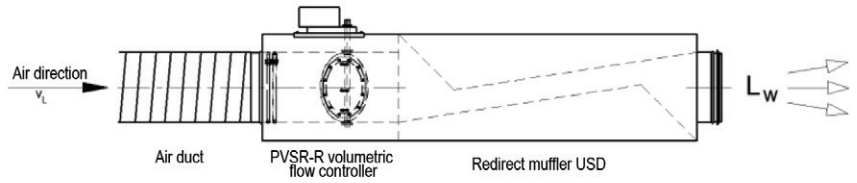


Technical Details

QUICK SELECTION



FLOW NOISE SOUND POWER LEVEL



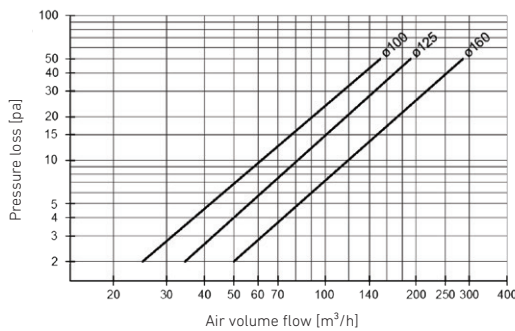
Nominal size	v_L [m/s]	Volume flow		$\Delta p_t = 50$ Pa										$\Delta p_t = 125$ Pa										$\Delta p_t = 250$ Pa									
		[m³/h]	[l/s]	L_w [dB/Oct]								L_{wA} [dB(A)]	L_w [dB/Oct]								L_{wA} [dB(A)]	L_w [dB/Oct]								L_{wA} [dB(A)]			
				Hz									Hz									Hz											
				63	125	250	500	1000	2000	4000	8000		63	125	250	500	1000	2000	4000	8000		63	125	250	500	1000	2000	4000	8000				
ø 100	1	28	8	34	24	18	<16	<16	<16	<16	<16	18	34	26	19	<16	<16	<16	<16	<16	19	29	26	20	<16	<16	<16	<16	<16	19			
	3	85	24	51	51	32	<16	<16	<16	<16	<16	35	55	54	32	19	<16	<16	<16	<16	36	53	52	38	27	<16	<16	<16	<16	36			
	5	141	39	56	53	38	29	<16	<16	<16	<16	40	58	58	40	30	21	<16	<16	<16	41	62	63	44	31	21	<16	<16	<16	45.4			
ø 125	1	44	12	45	38	24	<16	<16	<16	<16	<16	21	46	40	26	<16	<16	<16	<16	<16	23	44	40	26	17	<16	<16	<16	<16	25			
	3	133	37	58	50	33	22	<16	<16	<16	<16	37	61	53	34	22	<16	<16	<16	<16	39	62	58	40	27	<16	<16	<16	<16	42			
	5	221	61	59	55	42	34	24	<16	<16	<16	41	61	57	44	34	25	<15	<15	<16	42	70	66	46	34	24	<16	<16	<16	50			
ø 160	1	83	23	43	36	27	23	<16	<16	<16	<16	25	45	38	29	24	<16	<16	<16	<16	27	43	37	28	24	<16	<16	<16	<16	26			
	3	217	60	57	54	40	29	<16	<16	<16	<16	38	59	56	41	29	<16	<16	<16	<16	40	60	54	47	39	22	<16	<16	<16	43			
	5	362	101	60	55	45	36	28	17	<16	<16	42	62	58	47	37	28	19	<16	<16	44	67	65	51	41	29	19	<16	<16	49			

L_w [dB(A)] Sound power level, flow noise
 v_L [m/s] Flow speed, air duct
 Δp_t [Pa] Total pressure difference

SOUND ATTENUATION

Attenuation	PVSR-USD		
	ø 100	ø 125	ø 160
125 HZ	18 dB	18 dB	19 dB
250 HZ	28 dB	28 dB	26 dB
500 Hz	36 dB	34 dB	31 dB
1 kHz	50 dB	41 dB	41 dB
2 kHz	55 dB	47 dB	51 dB
4 kHz	51 dB	43 dB	53 dB
8 kHz	48 dB	43 dB	44 dB

PRESSURE LOSS FOR VALVE POSITION OPEN



Specifications

VOLUME FLOW CONTROLLER WITH REDIRECT MUFFLER PVSr-USD Ø100 MM

with integrated VAV compact regulator with MP bus interface, for variable or constant air volume flow systems, suitable for room air with control valve and airtight shut-off valve, readings recorder with mean-value calculating differential pressure sensor and control components, for position independent installation in air supply and extract air customer-specific defaults for the control parameters, such as air volume flows V_{min} , V_{max} and V_{mid} with factory setting and technical air-related testing of every single device on special test rig, subsequent adjustment of the parameters for commissioning on-site is easy to arrange. Inherently stable housing made of zinc-coated sheet steel, control and shut-off valve with integrated seal-lip made of zinc-coated sheet steel with non-ageing and permanently elastic seal, measuring device with flow-optimised circular pipe profiles with integrated reference holes, insensitive to dirt, quality plastic friction bearings, with connecting pieces for plug fitting and integrated lip-seal, delivery with caps on the connecting pieces to protect against dirt and dust.

By following the installation instructions, the volume flow controller can be installed position-independently in the air duct system. Shut-off valve in shut-off position airtight to Class 3 as per ÖNORM EN 1751, VAV compact regulator, pressure sensor, digital controller and valve actuator as a communication-capable VAV compact solution. Brushless, anti-blocking drive with power-save mode. Integrated MP bus interface, connection of active/passive sensors or switches via MP bus. Diagnostics socket for controllers and rotational direction adaptation.

The construction design complies with hygiene requirements as stipulated in the guidelines contained in VDI 6022 (Blatt 1 01/2018), SWKI VA104-01 (01/2019), DIN 1946-4 (09/2018), ÖNORM H 6021 (08/2016), ÖNORM H 6020 (06/2019) and ÖNORM H 6038 (02/2020), and is in accordance with performed expert appraisals on hygiene.

- Nominal voltage: AC 24 V, 50 / 60 Hz / DC 24 V
- Actuation: continuous DC 0 - 10 V
- Working range: DC 2 - 10 V
- Repeater: DC 2 - 10 V
- Power consumption: 3 W
- Connection: 1m cable, 4 x 0.75 mm²
- Torque: 5 Nm
- Push-button: Adaptation / addressing / service function
- LED: 24 V supply and status/service function
- Angle of rotation: 95 degrees, mechanical or electronic adjustment
- Protection class: III safety extra-low voltage, protection rating: IP54
- Operating temperature: + 0°C to + 50°C
- including diagnostics socket on cabinet for control and setting devices

Integrated muffler with fitted, efficient redirect muffler splitters, the inner part is designed as a redirect chamber with acoustically and flow-optimised splitters, splitters made of non-combustible, wear-resistant and moisture-repellent surface, with absorption and resonance elements for optimal noise damping, with connecting pieces with dual lip-seal for simple spigot assembly.

Fluidic and acoustic data checked by Lucerne/Technology & Architecture University with test report number HP-09855/2.

Technical Details

Size	ø 100 mm
Dimensions:	280 x 200 mm
Length:	1500 mm
Air volume flow V_{min} / V_{max}	...../..... m ³ /h
Air volume flow V_{mid}	..... m ³ /h
Working range:	..... V
Model VAV compact regulator	..... with MP bus
Manufacturer	PICHLER
Model	PVSr-USD
	LO:
	SO:
ST	EP:



VOLUME FLOW CONTROLLER WITH REDIRECT MUFFLER PVSR-USD Ø125 MM

with integrated VAV compact regulator with MP bus interface, for variable or constant air volume flow systems, suitable for room air with control valve and airtight shut-off valve, readings recorder with mean-value calculating differential pressure sensor and control components, for position independent installation in air supply and extract air customer-specific defaults for the control parameters, such as air volume flows V_{min} , V_{max} and V_{mid} with factory setting and technical air-related testing of every single device on special test rig, subsequent adjustment of the parameters for commissioning on-site is easy to arrange. Inherently stable housing made of zinc-coated sheet steel, control and shut-off valve with integrated seal-lip made of zinc-coated sheet steel with non-ageing and permanently elastic seal, measuring device with flow-optimised circular pipe profiles with integrated reference holes, insensitive to dirt, quality plastic friction bearings, with connecting pieces for plug fitting and integrated lip-seal, delivery with caps on the connecting pieces to protect against dirt and dust.

By following the installation instructions, the volume flow controller can be installed position-independently in the air duct system. Shut-off valve in shut-off position airtight to Class 3 as per ÖNORM EN 1751, VAV compact regulator, pressure sensor, digital controller and valve actuator as a communication-capable VAV compact solution. Brushless, anti-blocking drive with power-save mode. Integrated MP bus interface, connection of active/passive sensors or switches via MP bus. Diagnostics socket for controllers and rotational direction adaptation.

The construction design complies with hygiene requirements as stipulated in the guidelines contained in VDI 6022 (Blatt 1 01/2018), SWKI VA104-01 (01/2019), DIN 1946-4 (09/2018), ÖNORM H 6021 (08/2016), ÖNORM H 6020 (06/2019) and ÖNORM H 6038 (02/2020), and is in accordance with performed expert appraisals on hygiene.

- Nominal voltage: AC 24 V, 50 / 60 Hz / DC 24 V
- Actuation: continuous DC 0 - 10 V
- Working range: DC 2 - 10 V
- Repeater: DC 2 - 10 V
- Power consumption: 3 W
- Connection: 1m cable, 4 x 0.75 mm²
- Torque: 5 Nm
- Push-button: Adaptation / addressing / service function
- LED: 24 V supply and status/service function
- Angle of rotation: 95 degrees, mechanical or electronic adjustment
- Protection class: III safety extra-low voltage, protection rating: IP54
- Operating temperature: + 0°C to + 50°C
- including diagnostics socket on cabinet for control and setting devices

Integrated muffler with fitted, efficient redirect muffler splitters, the inner part is designed as a redirect chamber with acoustically and flow-optimised splitters, splitters made of non-combustible, wear-resistant and moisture-repellent surface, with absorption and resonance elements for optimal noise damping, with connecting pieces with dual lip-seal for simple spigot assembly.

Fluidic and acoustic data checked by Lucerne/Technology & Architecture University with test report number HP-09855/2.

Technical Details

Size	ø 125 mm
Dimensions:	280 x 200 mm
Length:	1500 mm
Air volume flow V_{min} / V_{max}	...../..... m ³ /h
Air volume flow V_{mid}	..... m ³ /h
Working range:	..... V
Model VAV compact regulator	..... with MP bus
Manufacturer	PICHLER
Model	PVSR-USD
	LO:
	SO:
ST	EP:



VOLUME FLOW CONTROLLER WITH REDIRECT MUFFLER PVSR-USD Ø160 MM

with integrated VAV compact regulator with MP bus interface, for variable or constant air volume flow systems, suitable for room air with control valve and airtight shut-off valve, readings recorder with mean-value calculating differential pressure sensor and control components, for position independent installation in air supply and extract air customer-specific defaults for the control parameters, such as air volume flows V_{min} , V_{max} and V_{mid} with factory setting and technical air-related testing of every single device on special test rig, subsequent adjustment of the parameters for commissioning on-site is easy to arrange. Inherently stable housing made of zinc-coated sheet steel, control and shut-off valve with integrated seal-lip made of zinc-coated sheet steel with non-ageing and permanently elastic seal, measuring device with flow-optimised circular pipe profiles with integrated reference holes, insensitive to dirt, quality plastic friction bearings, with connecting pieces for plug fitting and integrated lip-seal, delivery with caps on the connecting pieces to protect against dirt and dust.

By following the installation instructions, the volume flow controller can be installed position-independently in the air duct system. Shut-off valve in shut-off position airtight to Class 3 as per ÖNORM EN 1751, VAV compact regulator, pressure sensor, digital controller and valve actuator as a communication-capable VAV compact solution. Brushless, anti-blocking drive with power-save mode. Integrated MP bus interface, connection of active/passive sensors or switches via MP bus. Diagnostics socket for controllers and rotational direction adaptation.

The construction design complies with hygiene requirements as stipulated in the guidelines contained in VDI 6022 (Blatt 1 01/2018), SWKI VA104-01 (01/2019), DIN 1946-4 (09/2018), ÖNORM H 6021 (08/2016), ÖNORM H 6020 (06/2019) and ÖNORM H 6038 (02/2020), and is in accordance with performed expert appraisals on hygiene.

- Nominal voltage: AC 24 V, 50 / 60 Hz / DC 24 V
- Actuation: continuous DC 0 - 10 V
- Working range: DC 2 - 10 V
- Repeater: DC 2 - 10 V
- Power consumption: 3 W
- Connection: 1m cable, 4 x 0.75 mm²
- Torque: 5 Nm
- Push-button: Adaptation / addressing / service function
- LED: 24 V supply and status/service function
- Angle of rotation: 95 degrees, mechanical or electronic adjustment
- Protection class: III safety extra-low voltage, protection rating: IP54
- Operating temperature: + 0°C to + 50°C
- including diagnostics socket on cabinet for control and setting devices

Integrated muffler with fitted, efficient redirect muffler splitters, the inner part is designed as a redirect chamber with acoustically and flow-optimised splitters, splitters made of non-combustible, wear-resistant and moisture-repellent surface, with absorption and resonance elements for optimal noise damping, with connecting pieces with dual lip-seal for simple spigot assembly.

Fluidic and acoustic data checked by Lucerne/Technology & Architecture University with test report number HP-09855/2.

Technical Details

Size	ø 160 mm
Dimensions:	260 x 280 mm
Length:	1600 mm
Air volume flow V_{min} / V_{max}	...../..... m ³ /h
Air volume flow V_{mid}	..... m ³ /h
Working range:	..... V
Model VAV compact regulator with MP bus
Manufacturer	PICHLER
Model	PVSR-USD
	LO:
	SO:
ST	EP:





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