

Flow switches | VHS09, VK309

For insertion installation

US version available

Note: The US versions are separate products.
The units are not converted, but pre-configured at the factory for the respective variants.

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VHS09



VK309



Highlights

- Universal flow switches for copper pipe Ø 32...88.9
- Adjustable for pipe size and setpoint by trimming the paddle
- Soldering adapter for copper pipes

Technical data	VHS09		VK309	
Switching function	Contact → closes at increasing flow → opens at decreasing flow Reversing possible		Contact → closes at increasing flow → opens at decreasing flow	
Pressure rating	PN 25	Max. 360 psi	PN 10	Max. 160 psi
Temperature ranges				
Medium	-25...110 °C	-13...230 °F	-25...100 °C	-13...212 °F
Ambient	-25...80 °C	-13...176 °F	-25...70 °C	-13...158 °F
Electrical data				
Electrical connection	Plug connector DIN EN 175301-803-A incl. cable socket		1.5 m PVC jacket cable	59" PVC jacket cable
Switching current	Max. 1 A			
Switching voltage	Max. 230 VAC, 48 VDC			
Rating	Max. 26 VA, 20 W			
Degree of protection EN 60529	IP65			
Protection class EN 60730-1	Class II			

Approvals

Approvals	VHS09	VK309
	TÜV certificate	
		WRAS (approved product)
		KTW-BWGL: Product hygiene suitability for drinking water according to the 1+ system with external monitoring*
		Ignition protection type n - nC according to DIN EN IEC 60079-15 (VDE 0170-16):2020-03
 • UL 508 • UL 353 • CSA C22.2#14-10		ETL recognized component

* Only for flow switches VK309M2P10PD11

Options

Options	
For type	See order code
VHS09	→ Plug connector DIN EN 175301-803-A incl. cable socket with two LED for switching voltages 24 V...230 V AC/DC ±20 %, ambient temperature -20...70 °C / -4...158 °F → or 4-pin-sensor plug M12 x 1
For type	On request
VK309	→ Reversed switching function

Set point ranges

Set point ranges								
Paddle to be trimmed to								
	Paddle mark	9	15	20	30	40	50	60
	Installation length L ₁ [mm]	39	45	50	60	70	80	90
Setpoints* / Max. flow rate [m³/h]								
Ø 32 x 1	Increasing flow ON**	2						
	Decreasing flow OFF	1.9						
	Max. flow rate	10						
Ø 35 x 1	Increasing flow ON**	2.6	1.8					
	Decreasing flow OFF	2.4	1.6					
	Max. flow rate	20	13					
Ø 35 x 1.5	Increasing flow ON**	2.5	1.7					
	Decreasing flow OFF	2.2	1.6					
	Max. flow rate	18	12					
Ø 42 x 1.5	Increasing flow ON**	3.9	2.8	2.2				
	Decreasing flow OFF	3.7	2.7	2.1				
	Max. flow rate	30	20	15				
Ø 54 x 1.5	Increasing flow ON**				3.2			
	Decreasing flow OFF				3			
	Max. flow rate				21			
Ø 54 x 2	Increasing flow ON**				3			
	Decreasing flow OFF				2.9			
	Max. flow rate				20			
Ø 64 x 2	Increasing flow ON**		8.6	7.2	5.2	4		
	Decreasing flow OFF		7.9	6.6	4.7	3.7		
	Max. flow rate		53	42	30	24		
Ø 76.1 x 2	Increasing flow ON**		13.6	10.8	8	6.4	5.2	
	Decreasing flow OFF		12.1	10	7.4	5.8	4.7	
	Max. flow rate		80	65	46	35	31	
Ø 88.9 x 2	Increasing flow ON**				10.9	9	7.3	6.1
	Decreasing flow OFF				10.7	8.4	6.9	5.9
	Max. flow rate				67	52	42	39

* Water, 20 °C, horizontal pipe, tolerance ±15 %

** Typical value

Set point ranges

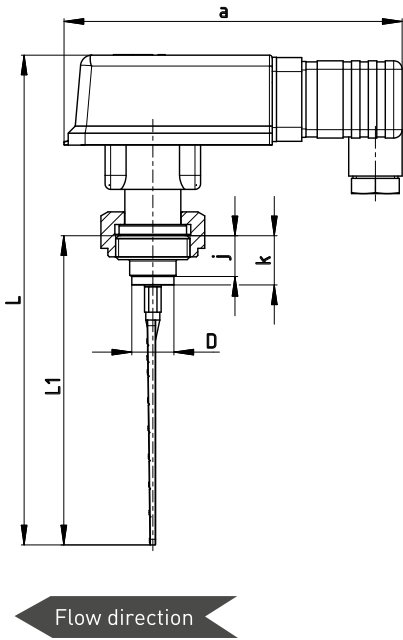
Set point ranges							
Paddle to be trimmed to							
	Paddle mark	9	15	20	30	40	50
	Installation length L ₁ [inch]	1.5	1.8	2	2.4	2.8	3.1
Setpoints* / Max. flow rate [US gpm]							
1¼"	Increasing flow ON**	10.2	7				
	Decreasing flow OFF	9.6	6.6				
	Max. flow rate	60	50				
1½"	Increasing flow ON**	16.5	11.5	8.8			
	Decreasing flow OFF	15	10.5	8.3			
	Max. flow rate	100	85	70			
2"	Increasing flow ON**		23	18.5	13.4		
	Decreasing flow OFF		21.6	17	12.5		
	Max. flow rate		150	130	85		
2½"	Increasing flow ON**		31.5	26.7	19.8	15.5	
	Decreasing flow OFF		29	24.7	18.5	14.9	
	Max. flow rate		250	200	150	120	
3"	Increasing flow ON**			48.4	36.3	28.5	23.9
	Decreasing flow OFF			45.9	34.2	26.5	22
	Max. flow rate			300	230	180	140

* Water, 68 °F, horizontal pipe, tolerance ±15 %

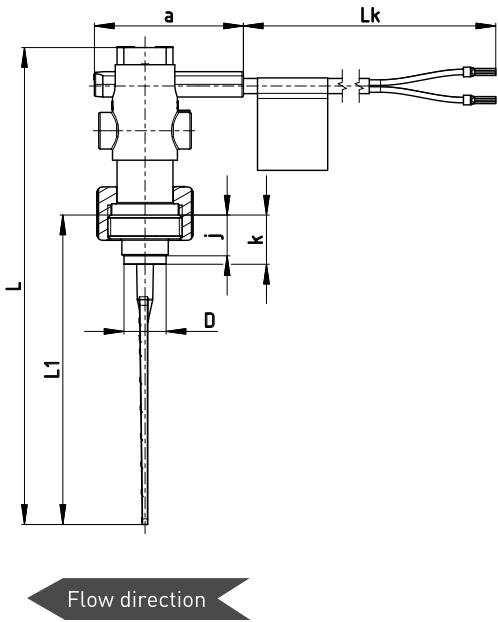
** Typical value

Technical drawings | Dimensions

VHS09

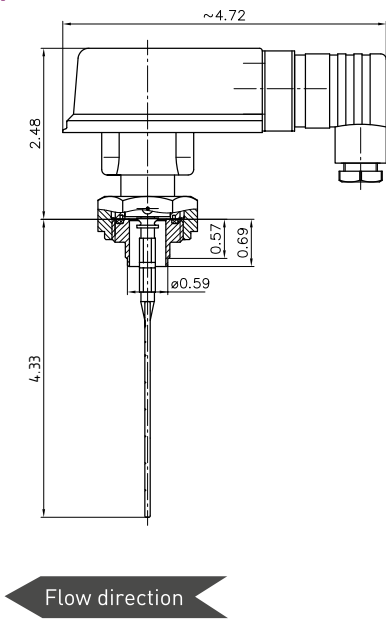


VK309

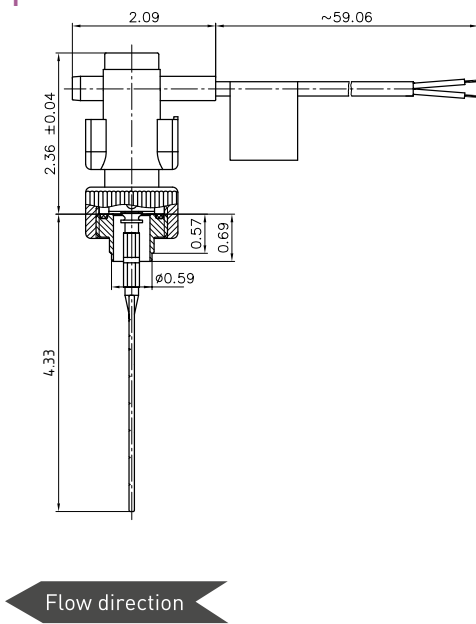


Dimensions (mm)							
Type	L	L1	D	j	k	a	Lk
VHS09	174	110	Ø 15	14.5	17.5	120	—
VK309	170	110	Ø 15	14.5	17.5	53	1500 ± 10

VHS09 NPT



VK309 NPT



Materials

Materials in contact with fluid		
Type	VHS09	VK309
Body	Brass CW614N	PPE+PS Noryl™ 30 % glass fibre reinforced
Paddle / Sleeve	PPE+PS Noryl™ 30 % glass fibre reinforced / Stainless steel	PPE+PS Noryl™ 30 % glass fibre reinforced / Without
Process connection	Brass CW614N	
Pin	Stainless steel 1.4571	Without
Magnet	Hard ferrite	
O-ring	NBR	

Article numbers

Type	Artikelnummer
VHS09 Plug connector incl. cable socket (standard) Plug connector incl. cable socket with LED (option) 4-pin-sensor plug M12 x 1 (option)	VHS09M2P171D11 VHS09M2P191D11 VHS09M2P181D11
VK309 1.5 m PVC jacket cable 1.5 m PVC jacket cable, Ignition protection type n - nC	VK309M2P10PD11 VK309M2P10PD11E

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Type	Article Number
VHS09 Plug connector (Standard), Paddle plastic	VHS09M2P171D11

Type	Artikelnummer
VHS09 NPT Plug connector incl. cable socket (standard) Plug connector incl. cable socket with LED (option) 4-pin-sensor plug M12 x 1 (option)	VHS09M2P171D21 VHS09M2P191D21 VHS09M2P181D21
VK309 NPT 59" PVC jacket cable 59" PVC jacket cable, Ignition protection type n - nC	VK309M2P10PD21 VK309M2P10PD21E