

Nessie[®] Directional Control Valve type VDH 30EC 4/3 For Cetop 3 flange mounting (ISO 4401) and inline mounting





Data sheet	Nessie [®] directional control valve type VDH 30EC 4/3			
Technical data	Max. pressure port P, A and B *)	140 bar		
	Return pressure, port T (T ≤ A, B pressure) *)		140 bar	
	Min. inlet pressure		5 bar	
	Max flow		30 l/min	
	Min. flow		1 l/min	
	Pressure loss at 5 / 15 / 30 l/min. (P \rightarrow A + B \rightarrow T)		5 / 8 /25 bar	
	Opening time when changing direction **)		110 ms	
	Closing time when changing direction **)		130 ms	
	Leakage, port P \rightarrow A, B, T		0 ml/min	
	Leakage, port A, B \rightarrow T		0 ml/min	
	Leakage, port, A, B \rightarrow P (inlet pressure port P = 0 bar)		max 5 ml/min	
	Leakage, port A, B \rightarrow P (inlet pressure port P = pressure	port A, B)	0 ml/min	
	Service life		7 million activations	
	Degree of enclosure	IP 67		
	 *) The pressure in each of the ports P, A and B must always be high **) No electrical delay required when changing direction 	her than the pressure in port T		
Temperature	 Storage temperature: -40°C to +70°C – provided that the valve is drained of fluid and stored "plugged" 	 Operation on water cont Fluid temperature at -30°C 1) to +50°C 	<i>taining antifreeze:</i> nd ambient temperature:	
	 Operation on (clean) water: Fluid temperature and ambient temperature: +3°C to +50°C 	1) please see paragraph on an	tifreeze protection	
Antifreeze Protection	If a system requires antifreeze protection, Danfoss recommends Dowcall N or Chillsafe mono propyl- ene glycol from the Dow Chemical Company and Arco Chemical Company, respectively. Both antifreezes are biologically degradable and must be used together with <i>demineralized</i> water.	 Mixing ratio must be: min. 30% antifreeze and 70% demineralized water providing frost protection to -13°C and preventing biofilm in the system. max. 50% antifreeze and 50% demineralized water due to increased viscosity, providing frost protection to -30°C. 		

Valves (without coils)	Function symbol	Weight kg	Code number
VDH 30 EC - NC stainless steel, AISI 304		3.8	180L0046
VDH 30 EC - NC stainless steel, AISI 316		3,8	180L0047
VDH 30 EC - 2xNC +2xNO stainless steel, AISI 304		3,8	180L0050
Activation of valve	Electrical: 12 V d.c., 24 V d.c., 24 V a Power consumption: 18 W (d.c.), 1 Manual with permanent magnet	.c., 110 V a.c. , 240 V a 0 W (a.c.) per coil	.C.

Code numbers

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Code numbers (continued)

The valves are supplied with screws and O-rings, but without coils.

Ceton 3 blocks and cover plate	Weight kg	Code number
Inline block for 1 valve	0.8	180L0060
Block for 1 valve	2.4	180L0081
Block for 2 valves	4.4	180L0082
Block for 3 valves	7.3	180L0083
Block for 4 valves	9.6	180L0084
Block for 5 valves	12.1	180L0085
Cover plate*) (for covering-up non-used valve outlets on block)	0.1	180L0079

*) Supplied with screws and O-rings

Coil	Coils (clip-on) (NC + NO)
24 V / 50 Hz /10 W	018F7920
220 V / 50 Hz /10 W	018F7921
240 V / 50 Hz /10 W	018F7924
24 V / 60 Hz /10 W	018F7922
220 V / 60 Hz /10 W	018F7925
240 V / 60 Hz /10 W	018F7926
110 V / 50/60 Hz /10 W	018F7923
12 V d.c. / 18 W	018F7913
24 V d.c. / 18 W	018F7914

For other voltages, please contact Danfoss Sales Organisation for Water Hydraulics.

*) Requires special blocks, please contact Danfoss Sales Organisation for Water Hydraulics.



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Available valve configurations

The table below shows the possible valve configurations, depending on which coils are activated.

For VDH 30EC 4/3 NC

Diagram showing flow routes through the valve, port lettering and coil numbers.

For VDH 30EC 4/3 NC + NO

Function	1	2	3	4	
A B T T P T	off	off	off	off	
A B P T	off	on	off	on	
A B	on	off	on	off	
A B T P T	off	off	on	off	
A B	on	off	off	off	
	off	off	off	on	
A B	off	on	off	off	
A B T P T	off	off	on	on	
A B T P T	on	on	off	off	
A B P T	off	on	on	off	
A B	on	off	off	on	
	on	on	on	on	

	1	2	3	4	9.10
Function	NC	NC	NO	NO	M355
A B	off	off	on	on	A 180
A B P T	off	on	on	off	
A B P T	on	off	off	on	
	off	off	off	on	
	on	off	on	on	
	off	off	on	off	
	off	on	on	on	
	off	off	off	off	
	on	on	on	on	
	off	on	off	on	
	on	off	on	off	
	on	on	off	off	

For VDH 30EC 4/3 NC







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Data sheet

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Dimensions (mm) VDH 30EC 4/3



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Dimensions (mm) Inline block for 1 valve



Dimensions (mm) Cetop blocks





Nessie® directional control valve type VDH 30EC 4/3

Code numbers

Code number	
180L5005	
180L5002	
180L5003	

Dimensions	Code number	
9.25 × 1.78	633B1243	
	Dimensions 9.25 × 1.78	

Assembly screw	Tightening torque	Code number
M5 × 40 ISO 4762 A4, 1 pc (pos. 10)	7 Nm	681X0162
Tools	Application	Code number
Special tool for orifice insert	Mounting/dismounting of orifice Orifice insert in valve housing: 12 Nm ±2 Nm Armature to be screwed into the valve housing: 60 Nm ±2 Nm	180Z0034
Spool tool included in 180L5005	Mounting of spool	
Permanent magnet	For manual activation of valve	180Z0212

Mounting of valve on cetop block

The valve is designed to be mounted on a block with CETOP 3-port connection. Four stainless steel screws and four O-rings are supplied with the valve for mounting. Remember to smear/ spray the threads on the screws with Molykote[®] D pasta from Dow Corning, or Klüber UH1 84-201 from Klüber lubrication, before mounting the valve.



Coil on valves with short armature tubes (NC and NO valves)

- 1. Place the o-ring on the armature tube.
- 2. The coil is clicked on by means of a light pressure by hand – without using tools.



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Dismounting



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