

Comatrol

RESPONSIVENESS IN MOTION

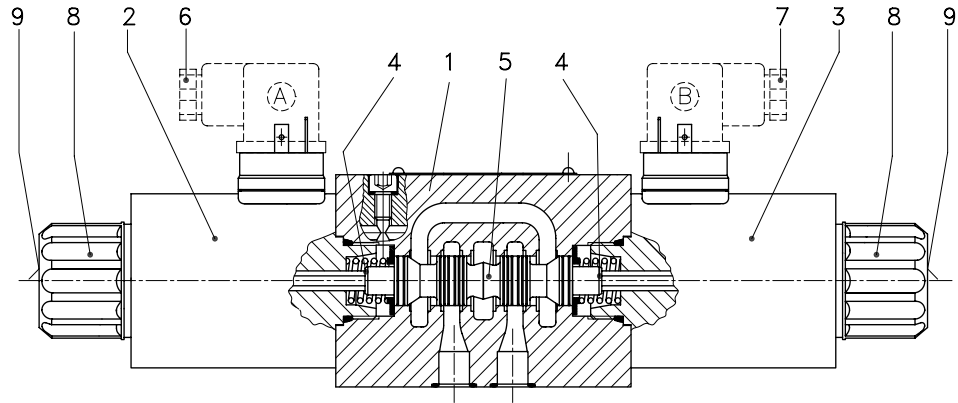
Member of the Danfoss Group



DCV05 Solenoid Valves

www.comatrol.com

OVERVIEW



DCV 05 directional control valves consist of: housing (1), control spool (5), centering springs (4), and operating solenoids (2, 3).

The three-position directional valves have two solenoids and two springs. The two position directional valves have one solenoid and one return spring.

The operating solenoids are DC and are supplied through connectors A and B (6, 7). For AC supply, the solenoids are provided with rectifiers integrated directly into the coil. T

The connectors must be ordered separately. By loosening nut (8), the solenoid can be rotated in four positions 90° apart.

Provided that the pressure in T-port does not exceed 360 psi [25 bar], the valve can be actuated by manual override (9).

The valve housing (1) is phosphate coated. The operating solenoids (2, 3) are zinc coated.

FEATURES

- 3 position, 4-way and 2 position, 4-way directional valves
- Solenoids can be fixed in three positions 90° apart
- Push button manual override
- Installation dimensions to DIN 24340 and ISO 4401





ORDER CODE

DCV05 - 3Z11 - 01200 - E10 - K1 - N2 - B

Directional control valves

Nominal size

Operating positions

Code	Description
2	Two positions
3	Three positions

Spool

See *Spool options*, page 4

Voltage

Code	Description
01200	12 VDC / 3.17 A
02400	24 VDC / 1.73 A
12060	115 VAC / 0.35 A / 60 Hz
23050	230 VAC / 0.17 A / 50 Hz

The AC coils correspond with E5 connectors only.

Connector

Code	Description
E1	DIN 43650
E2	DIN 43650 diode in coil
E5	DIN 43650 rectifier in coil
E8	Lead wires
E9	Lead wires with diode in coil
E10	Deutsch on lead wires
E11	Deutsch on lead w/ diode in coil

Seals

Code	Description
B	Buna-N
V	Viton

Manual override

Code	Description
00	Standard
N2	Protective rubber boot

Connector plug (DIN 43650)

Code	Description
Omit	No plug
K1	Connector plug
K2	Connector plug with LED



TECHNICAL DATA

Specifications

Nominal size		10 [0.39]
Maximum flow	l/min [US gal/min]	See p-Q characteristics, below. Replace valves with: NFPA D05, CETOP 5, NG10
Max. operating pressure	bar [psi]	350 [5075]
Max. back pressure (port T)	bar [psi]	210 [3045]
Pressure drop	bar [psi]	see Δ p-Q characteristics, page 4
Weight – with 1 solenoid	Kg [lb]	3.9 [8.6]
with 2 solenoids		5.4 [11.9]

SPOOL OPTIONS

Functional Symbols

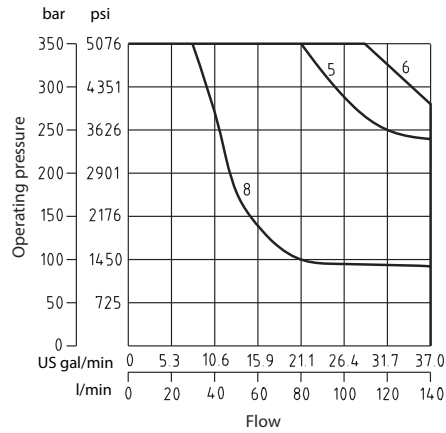
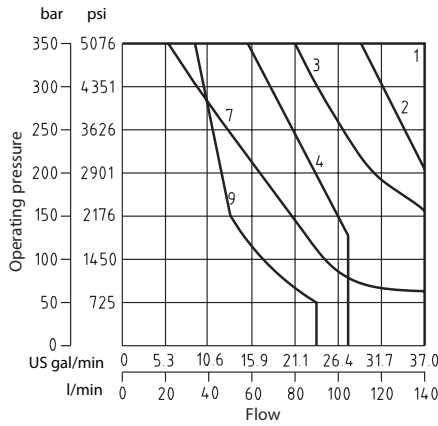
3 - Position			2 - Position		
Code	Symbol	Transition	Code	Symbol	Transition
B11			C11		
C11			R11		
H11			R21		
Y11			X11		
Z11			X25		
			Y51		
			Z51		



CHARACTERISTICS

p - Q Characteristics

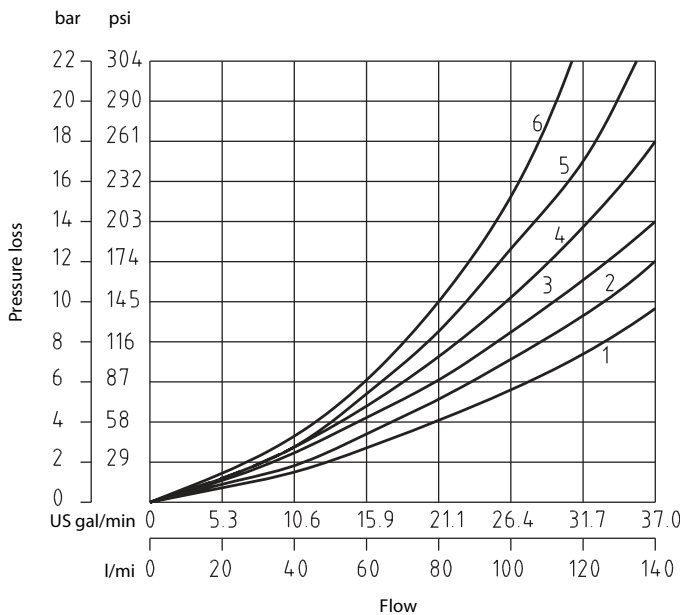
Operating limits for maximum hydraulic power transferred by the directional valve.
 For respective spool type – see *Spool Options*, page 5. Measured at viscosity = 32 mm²/s (cSt) [156 SUS].



Spool	Curve
B11	4
C11	3
H11	1
R11	2
R21	2
Y11	5
X11	2
X25	
Y51	5
Z11	1
Z51	1

p - Q Characteristics

Measured at viscosity = 32 mm²/s (cSt) [156 SUS].



Spool	P-A	P-B	A-T	B-T	P-T
B11	1	1	2	2	
C11	4	3	4	5	1
H11	1	1	2	2	1
R11	1	1	2	2	
R21	1	1	1	3	
X11	1	1	2	2	
Y11	1	1	2	2	
Y51		1	2		
Z11	1	1	2	2	
Z51		1	2		



TERMINAL OPTIONS

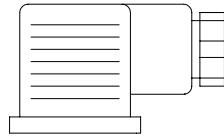
Code	Sketch
E1, E2, E5	<p>Technical sketches for terminal options E1, E2, and E5. The left sketch shows a side view with a width dimension of 74.1 [2.92]. The right sketch shows a top view with dimensions: 42.8 [1.68] for the terminal height, Ø31.1 [1.22] for the main body diameter, and Ø62.0 [2.44] for the base diameter. The part number P104 549 is indicated.</p>
E8, E9	<p>Technical sketches for terminal options E8 and E9. The left sketch shows a side view with a width dimension of 74.1 [2.92]. The right sketch shows a top view with dimensions: 200 [7.9] for the terminal height, 42.8 [1.68] for the terminal base height, Ø31.1 [Ø1.22] for the main body diameter, and Ø62.0 [Ø2.44] for the base diameter.</p>
E10, E11	<p>Technical sketches for terminal options E10 and E11. The left sketch shows a side view with a width dimension of 74.1 [2.92]. The right sketch shows a top view with dimensions: 200 [7.9] for the terminal height, 42.8 [1.68] for the terminal base height, Ø31.1 [Ø1.22] for the main body diameter, and Ø62.0 [Ø2.44] for the base diameter.</p>



CONNECTOR OPTIONS

DIN 43650

Code	Type	Model	Max. input voltage	
			VDC	VAC
K1	Plug B (black)	Without rectifier	250	230
	Plug A (grey)	Without rectifier	250	230
K2	Plug B (black)	Without rectifier and LED	30	230
	Plug A (grey)	Without rectifier and LED	30	230



MANUAL OVERRIDE OPTION

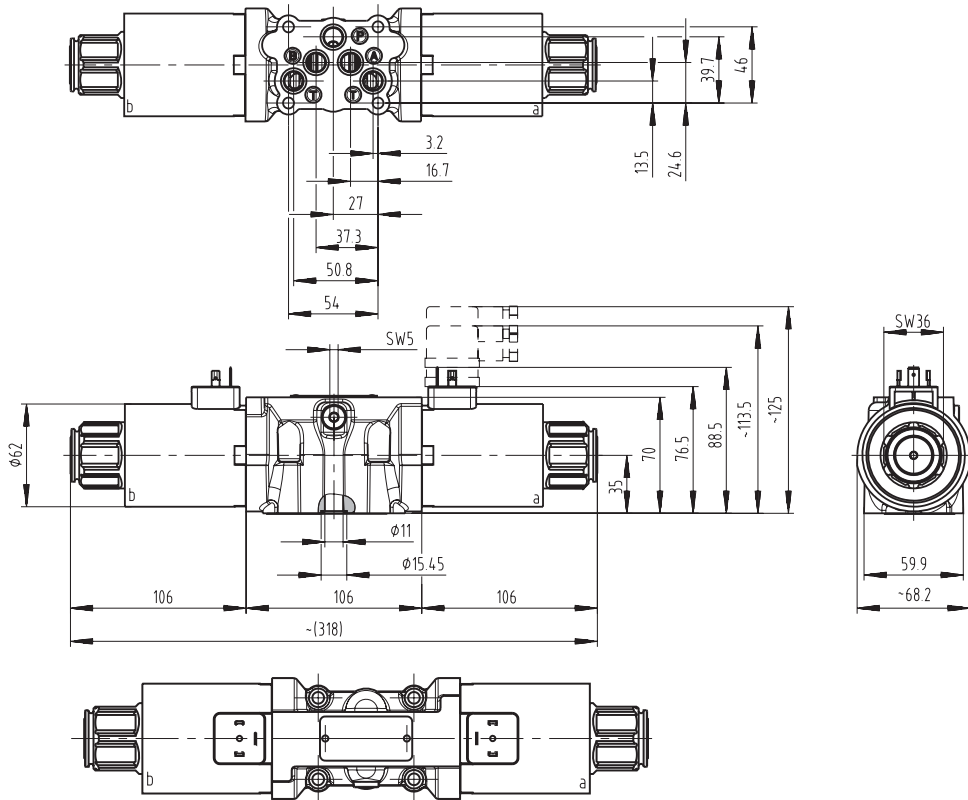
Standard	Covered by coil nut
<p>Code 00 mm [in]</p> <p>34 [1.34]</p> <p>a</p>	<p>Code N2</p> <p>50,5</p> <p>Manual override covered by coil nut</p>



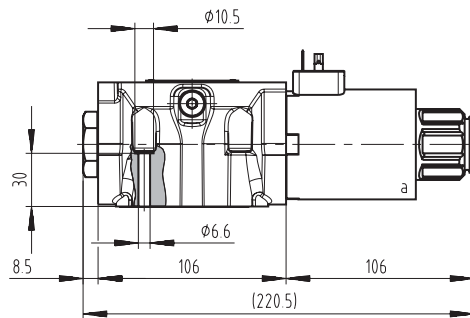
DIMENSIONS

Valve with two solenoids

Dimensions: mm [in]

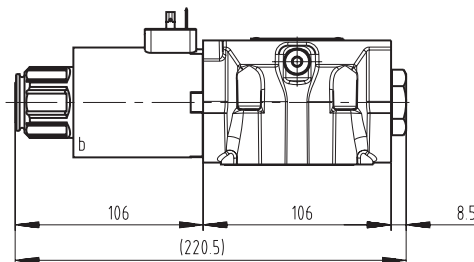


Valve with solenoids- side a



Functional symbols
 R11, R21, Y51, Z51, X25

Valve with solenoids - side b

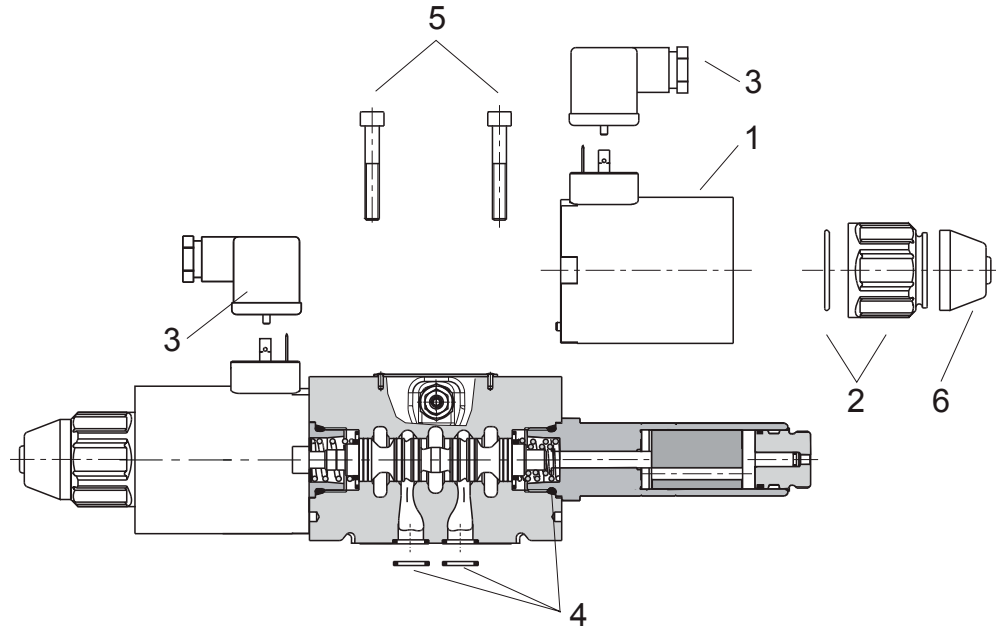


Functional symbols
 X11, C11



REPLACEMENT PARTS

1. Solenoid coil
2. Nut + sealing ring
3. Connector plug
4. Set of sealing
5. mounting bolts
6. boots



D5 - DCV05 Solenoid Valves Catalog

Solenoid

Voltage	E1 DIN	E2 DIN	E5 DIN	E8 Lead	E9 Lead	E10 Deutsch	E11 Deutsch	E12	E13
	43650	43650 w/Diode	w/Rectifier	Wires	Wires w/ Diode	on Leads	on Leads w/Diode	Deutsch	Deutsch w/Diode
Ordering Number									
01200	158-8019	***	***	***	***	158-8102	158-8099	11041824	158-8105
02400	158-8021	***	***	***	***	***	***	158-8100	***
12060	***	***	158-8027	Not Available					
23050	***	***	158-8020						

*** Consult Factory



**REPLACEMENT PARTS
 (continued)**

Solenoid nut

Manual override Code	Type of nut	Ordering number
No Code	Standard nut	158-8068
N2	Protective Rubber Boot	Consult factory

Connector (DIN 43650)

Code	Model	Connector plug A	Connector plug B
		gray	black
Ordering number			
K1	No rectifier or LED	158-8076	158-8075
K2	With LED	Consult factory	Consult factory

Seal kit

Type	Ordering number
Buna-N	158-8023
Viton	158-8094

Mounting bolts – set

Type	Ordering number
M6 x 40 bolts	158-8024
1/4-20 bolts	158-8095