# YDAC INTERNATIONAL



# 2/2-Way -**Pressure Relief Valve**

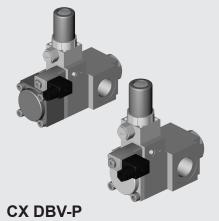
CX DBV (Right-Angle Design)



(also example order)

CX DBV = Pressure relief valve

CX DBV 12 120 G1 F P 24V







#### **Nominal size**

= DN 10 10 12 = DN 12 = DN 15 15

## Pressure range

= 3 - 40 bar = 5 - 64 bar 064 080 = 3 - 80 bar = 10 - 120 bar 120 = 5 - 140 bar = 12 - 160 bar 140 160 = 10 - 200 bar 200

= DN 20

#### Connection

= Female threaded connection G1"

### Seal

= FKM (Viton)

#### Control

= Electrical proportional control of pilot pressure reducing valve Ε = Stepless, manually adjustable control via solenoid valve to limit system pressure

= Stepless, manually adjustable control of pilot pressure reducing valve

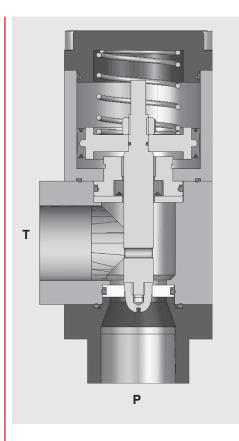
## Supply voltage

= 24V DC (not with CX DBV – H)

#### Version

ΕK = single piston = double piston





## Design

Essentially this valve consists of a valve body with integrated valve seat, and a hardened and ground cone poppet. The pre-set force is produced by a spring and a pressurised piston.

## **Functional description**

The compressed air with the spring exerts a force on the cone poppet and this is pressed onto the valve seat. The hydraulic force is applied to the opposing side of the cone poppet. If this is below the pre-set force, the valve will be closed. If the hydraulic force exceeds the pre-set force, then the cone poppet will be lifted away from the valve seat and operating fluid will flow from pressure port P to tank port T. This has the effect of limiting the pressure at port P. The hydraulic energy used is converted to heat and the operating fluid is drained to tank.

## **Piping**

To prevent turbulence reaching the valve, straight pipe sections are required in the following minimum lengths:

Upstream of the valve (P side): A length equivalent to 3 times the pipe diameter.

Downstream of the valve (T side): A length equivalent to 5 times the pipe diameter.

At outlet T there must be no restriction, no pressure head and as little flow resistance as possible.

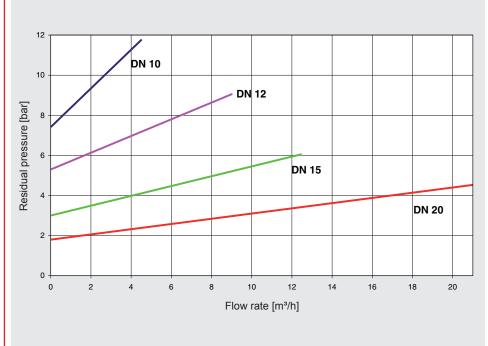
#### Technical data

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Design	E: Stepless closed loop pressure control via electrical setpoints 0 - 10 V		
	P: Stepless, manually adjustable control via solenoid valve which limits system pressure		
	H: Stepless, manually adjustable control of pressure		
Media	Contaminated fluids (50µm)		
Nominal size	DN 10, DN 12, DN 15, DN 20		
Pressure range	up to max. 200 bar		
Flow rate	See table		
Housing material	1.4305		
Seal material	FKM		
Temperature of medium	0 to +60 °C		
Ambient temperature	0 to +50 °C		
Ports	Female threaded connection G1"		
Electrical connection	E: male connection M12 x 1		
	P: Female connector to industry standard Form B, for AC operation with integrated rectifier		
Supply voltage	E: 24 V DC (max. residual ripple 10 %)		
	P: 24 V DC, 230 V AC, special voltages		
Voltage tolerance	E / P: ± 10 % to VDE 0580		
Power consumption	E: 2.5 Watt		
	P: 230 V 50 Hz: 9.2 VA   24 V DC: 6 W		
Duty cycle	E / P: 100 %		
IP class	E / P: IP 65 when connector is fitted		
Installation position	E: M12 connection preferably on top		
	H / P: pressure gauge preferably on top		
Control air	40 μ filtered, max. 8 bar		

NOTE: Further options and accessories available on request.

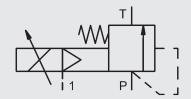
DN [mm]	Version	Pressure control range [bar]	Connection	Max. flow rate [m³/h]
10	SP	12 – 160	G 1	3.0
12	SP	10 – 120	G 1	6.0
15	SP	5 – 64	G 1	8.3
20	SP	3 - 40	G 1	14.1
12	DP	10 – 200	G 1	6.0
15	DP	5 – 140	G 1	8.3
20	DP	3 - 80	G 1	14.1

## **Pressure minimization**



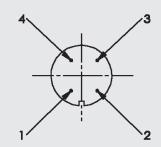
## **Series CX DBV-E**

# **Switching function**



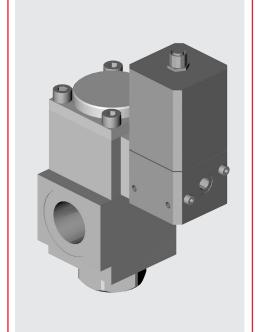
NC (closed when de-energised)

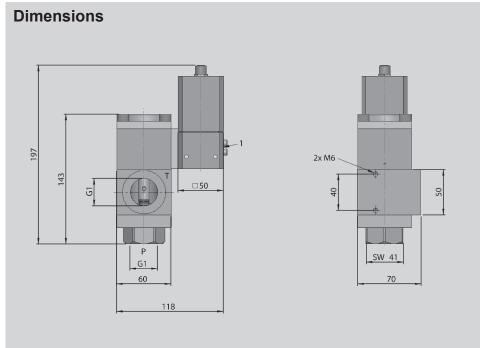
# **Electrical connection (M12x1)**



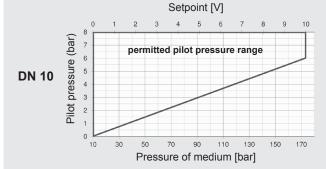
1	Supply
2	Setpoint (-)
3	GND (-)
4	Setpoint (+) 0-10V

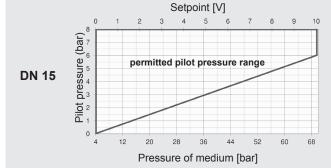
# Single piston version (EK)

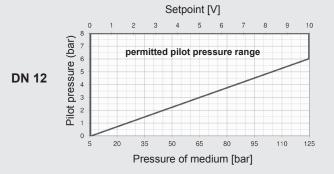


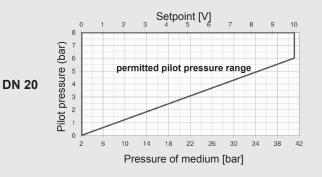


## **Control pressure graphs**

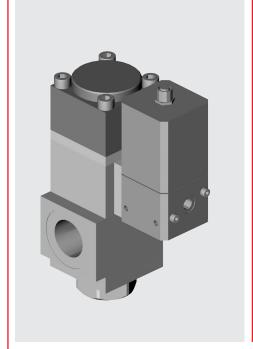








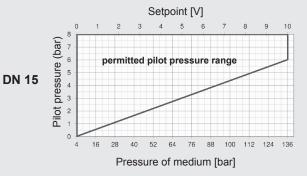
# Double piston version (DK)

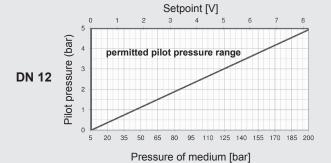


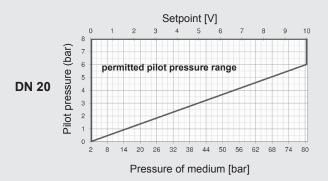
# 

# **Control pressure graphs**

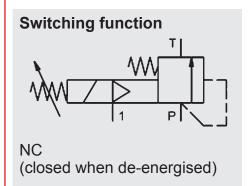
DN 10 not available in double piston version DK



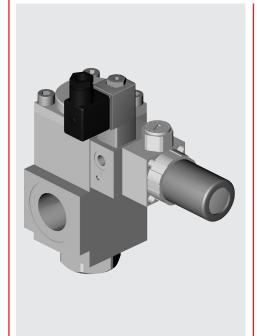


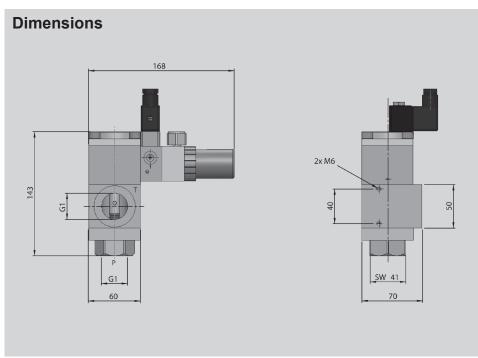


# Series CX DBV-P

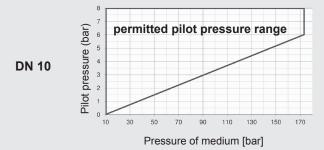


# Single piston version (EK)

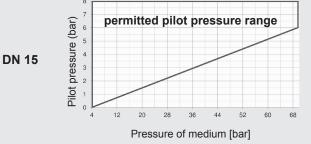


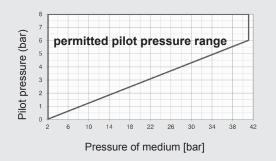


## **Control pressure graphs**



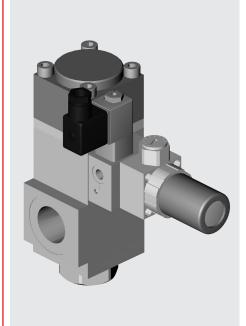


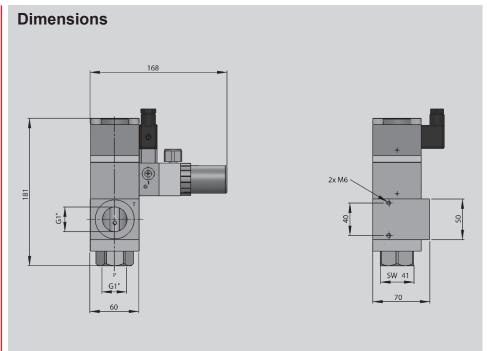




**DN 20** 

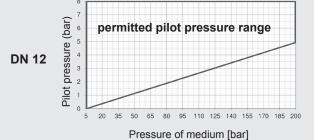
# Double piston version (DK)

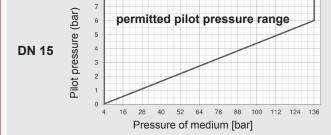


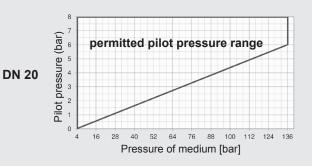


# **Control pressure graphs**

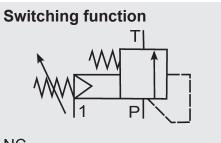
DN 10 not available in double piston version DK





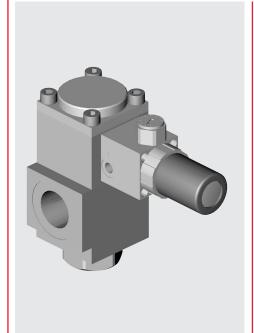


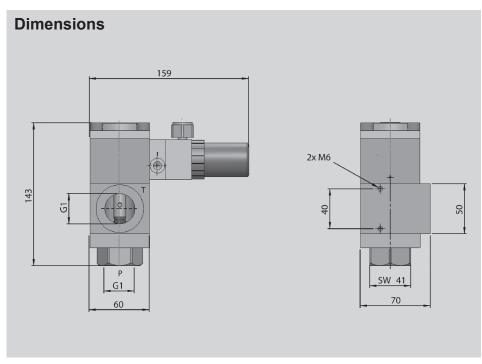
## Series CX DBV-H



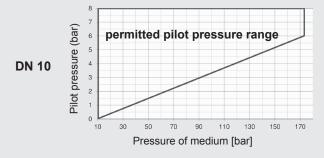
NC (closed when de-energised)

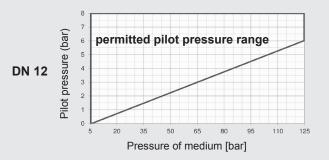
# Single piston version (EK)

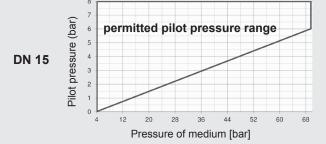


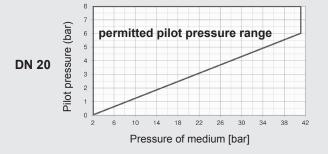


# **Control pressure graphs**

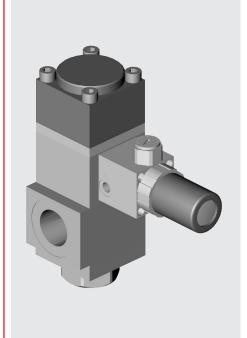


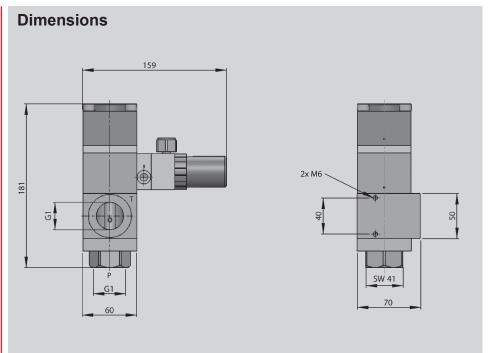






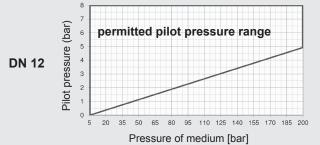
# Double piston version (DK)



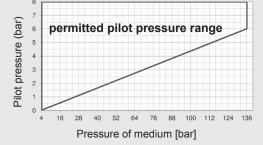


## Control pressure graphs

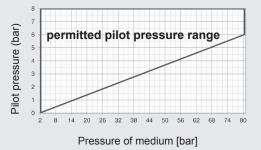
DN 10 not available in double piston version DK



**DN 15** 



**DN 20** 



## **NOTE**

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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