

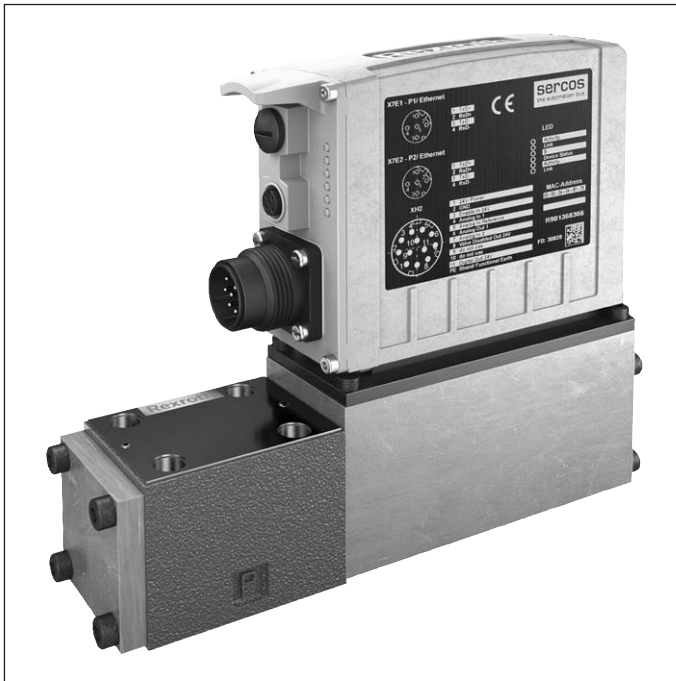
Directional control valve, direct operated, with integrated digital axis controller (IAC-Multi-Ethernet)

Type 4WRPDH

RE 29391

Edition: 2015-01

Replaces: 2014-10



- Sizes 6 and 10
- Component series 2X
- Maximum operating pressure of 350 bar
- Maximum flow 100 l/min ($\Delta p = 70$ bar)



Features

- Open
 - Integrated digital axis control functionality (IAC-Multi-Ethernet)
 - Bus connection/service interface (sercos, EtherCAT, EtherNet/IP, PROFINET RT)
- Scalable
 - 2 configurable analog sensor inputs
 - 1 input for linear measuring system (SSI, 1Vss or EnDat 2.2)
- Safe
 - Internal safety function (can be used up to category 4/PL e according to EN13849-1)
 - CE conformity according to EMC directive 2004/108/EC
- Accurate
 - Best-in-class hydraulic controller
 - High response sensitivity and low hysteresis

Contents

Features	1
Ordering codes	2, 3
Symbols	3
Function, section	4, 5
Technical data	6, 7
Representation of the axis controller in the system network	8
Block diagram/controller function block	9
Electrical connections, assignment	10, 11
LED display	12
Characteristic curves	13 ... 16
Dimensions	17 ... 19
Accessories	19 ... 21
Project planning and maintenance instructions	21
More information	22

Ordering codes

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
4	WRP	D	H			B			-	2X	/		/	24	D6

01	4 main ports	4
02	directional control valve	WRP
03	With integrated digital axis controller	D
04	Control spool/sleeve	H
05	Size 6	6
	Size 10	10
06	Symbols e.g. C, C1 etc.; possible design see page 3	
07	Installation side of the inductive position transducer	B

Rated flow of with 70 bar pressure differential (35 bar/control edge)

08		“L”	Flow characteristic		
			“P” (40 % inflection)	“P” (60 % inflection)	
	- Size 6				
	2 l/min	✓	-	-	02
	4 l/min	✓	✓	-	04
	12 l/min	✓	-	-	12
	15 l/min	-	-	✓	15
	24 l/min	✓	-	-	24
	25 l/min	-	-	✓	25
	40 l/min	✓	✓	-	40
	- Size 10				
	50 l/min	✓	✓	-	50
	100 l/min	✓	✓	-	100

Flow characteristic

09	Linear	L
	Inflected characteristic curve (60 % inflection for size 6 with rated flow “ 15 ” and “ 25 ”, otherwise 40 % inflection)	P
10	Component series 20 ... 29 (20 ... 29: unchanged installation and connection dimensions)	2X

Seal material

11	NBR seals	M
	FKM seals	V
	Observe compatibility of seals with hydraulic fluid used! (Other seals on request)	
12	Supply voltage 24 V	24

Ethernet interface

13	EtherNET/IP	E
	PROFINET RT	N
	Sercos	S
	EtherCAT (CANopen profile)	T

Electrical interface

14	± 10 VDC or 4 ... 20 mA	D6
----	-------------------------	-----------

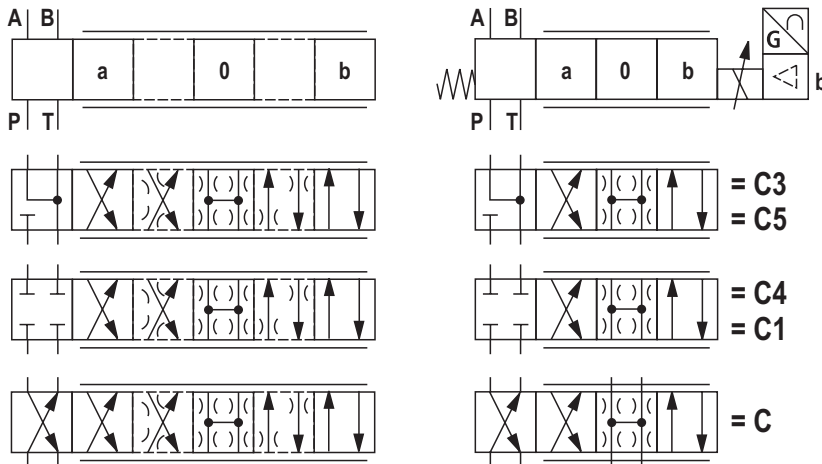
Ordering codes

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
4	WRP	D	H			B			-	2X	/		/	24	D6

Sensor interfaces

15	0 ... 10 V/4 ... 20 mA/EnDat 2.2	S
	0 ... 10 V/4 ... 20 mA/SSI	T
	0 ... 10 V/4 ... 20 mA/1Vss	U
16	Further details in the plain text	*

Symbols



For symbols **C5** and **C1**: ¹⁾

P → A: $q_{V \text{ nom}}$ B → T: $q_{V \text{ nom}}/2$

P → B: $q_{V \text{ nom}}/2$ A → T: $q_{V \text{ nom}}$

Notice:

Presentation according to DIN ISO 1219-1.
Hydraulic interim positions are shown by dashes.

¹⁾ Standard = 1:1, $q_{V \text{ nom}}$ 2:1 from rated flow
40 l/min (version "40")

Flow characteristic

Symbol	Linear characteristic curve (version "L")	Inflected characteristic curve (version "P")	
		Inflection 60 % ($q_{V \text{ nom}} = 15, 25 \text{ l/min}$)	Inflection 40 % ($q_{V \text{ nom}} = 4, 40 \text{ l/min}$)
C3, C5			
C4, C1			
C			

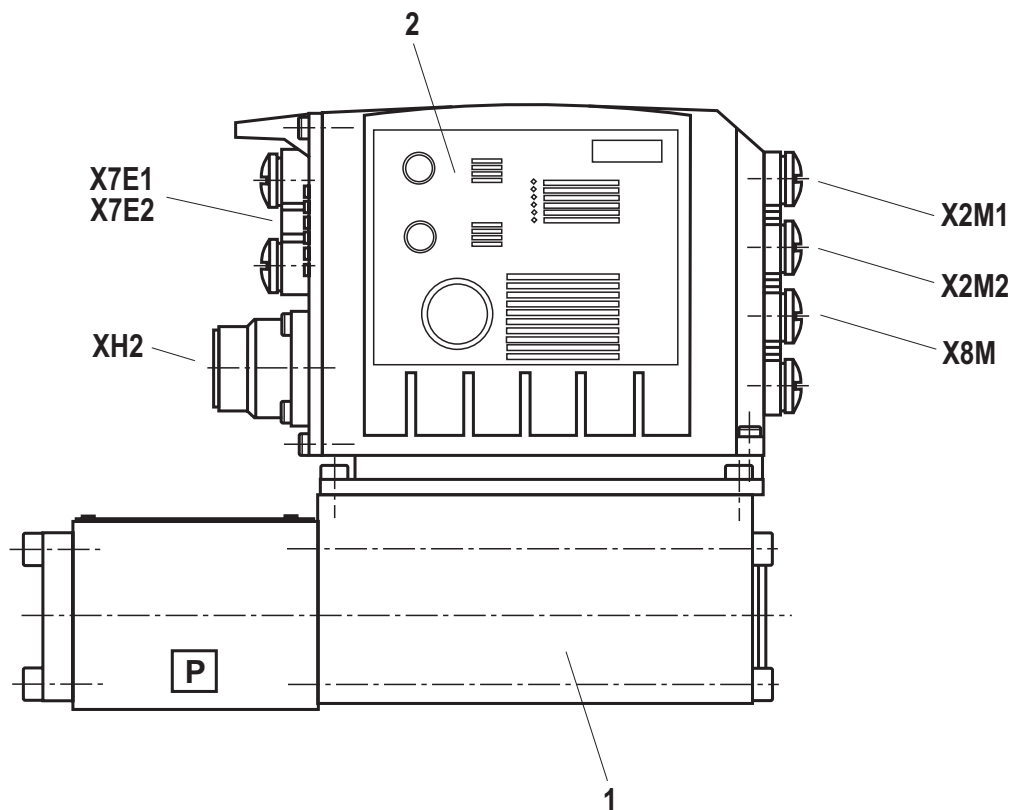
Function, section

Set-up

The directional control valve with IAC-Multi-Ethernet electronics mainly consists of:

- ▶ Direct-control directional control valve (1) with control spool and sleeve in servo quality
- ▶ Integrated digital axis controller (2) with:
 - analog/digital interface (XH2)
 - Ethernet interfaces (X7E1, X7E2)
 - analog sensor interfaces (X2M1, X2M2)
 - digital sensor interface (X8M)

Directional control valve with integrated axis controller, analog interfaces (X2M1, X2M2), digital interfaces (XH2, X8M) and Ethernet interfaces (X7E1, X7E2)



Function, section

Functional description

The **IAC-Multi-Ethernet** valve (Integrated Axis Controller based on directional control valves) is a digital directional control valve with integrated axis controller and the following functionalities:

- ▶ Position control
- ▶ Pressure control
- ▶ Force control
- ▶ Override control (position/pressure)

This enables, amongst others, the following operating modes:

- ▶ Valve direct control
- ▶ Drive-controlled position control
- ▶ Drive-controlled positioning
- ▶ Positioning block operation

- ▶ The command values are specified via the Ethernet interface (X7E1 or X7E2) or, alternatively, via the analog/digital interface (XH2)
- ▶ The feedback information of the actual value signals to the superior control system is provided optionally either via the Ethernet interface (X7E1 or X7E2) or the analog/digital interface (XH2)
- ▶ The control parameters are set via the Ethernet interface (X7E1 or X7E2)

Monitoring

The digital control electronics enables comprehensive monitoring functions/fault detection including:

- ▶ Undervoltage
- ▶ Communication error
- ▶ Cable break for analog sensor inputs and digital position measurement system
- ▶ Short-circuit monitoring for analog/digital outputs
- ▶ Monitoring of the microcontroller (watchdog)
- ▶ Temperature of the integrated electronics

IndraWorks PC program

To implement the project planning task and to parameterize the IAC-Multi-Ethernet valves, the user may use the IndraWorks engineering tool (see accessories).

- ▶ Project planning
- ▶ Parameterization
- ▶ Commissioning
- ▶ Diagnosis
- ▶ Comfortable management of all data on a PC
- ▶ PC operating systems: Windows XP (SP3), Windows 7

Safety function

The integrated control electronics of the valve enables the additional switch-off of a channel according to EN 13849-1 in the direction P to A (depending on the application, the fail-safe position must be adhered to). For this purpose, a suitable control system must be provided to perform the plausibility check between the direction-dependent valve signals “enable input” and “enable acknowledgement” (signal fed back by the valve). It is not possible to switch off direction P to B in a safety-relevant manner according to EN 13849-1 (depending on valve type).

Technical data

(For applications outside these parameters, please consult us.)

General			
Size	NS	6	10
Design		Directional spool valve, direct operated, with steel sleeve	
Actuation		Proportional solenoid with position control, OBE	
Connection type		Plate connection, porting pattern according to ISO 4401	
Installation position		Any	
Ambient temperature range	°C	−20 ... +60	
Storage temperature range	°C	+5 ... +40	
Sine test according to DIN EN 60068-2-6		10 ... 2000 Hz / maximal 10 g / 10 cycles / 3 axes	
Noise test according to DIN EN 60068-2-64		20 ... 2000 Hz / 10g _{RMS} / 30 g peak / 30 min / 3 axes	
Transport shock according to DIN EN 60068-2-27		15 g / 11 ms / 3 axes	
Ground	kg	3,2	7,2
Maximum relative humidity (no condensation)	%	95	
Maximum surface temperature	°C	150	
MTTFd value according to EN ISO 13849	Years	150 (for further details see data sheet 08012)	

Hydraulic										
Maximum operating pressure	► Port A, B, P	bar	350 (Ns6); 315 (Ns10)							
	► Port T	bar	250							
Rated flow at (Δp = 35 bar per edge ¹⁾)		l/min	2	4	12	15	24/25	40	50	100
Limitation (change to fail-safe position)	► Symbol C3, C5	bar	350	350	350	350	350	160	315	160
	► Symbol C4, C1	bar	350	350	350	280	250	100	250	100
Leakage flow (at 100 bar)	► Linear characteristic curve "L"	cm³/min	< 150	< 180	< 300	–	< 500	< 900	< 1200	< 1500
	► Inflected characteristic curve"P"	cm³/min	–	–	–	< 180	< 300	< 450	< 600 (1:1) < 500 (2:1)	< 600
Hydraulic fluid			see table page 7							
Viscosity range	► Recommended	mm²/s	20 ... 100							
	► Maximum admissible	mm²/s	10 ... 800							
Hydraulic fluid temperature range (flown-through)			°C –20 ... +60							
Maximum admissible degree of contamination of the hydraulic fluid, cleanliness class according to ISO 4406 (c)			Class 18/16/13 ²⁾							

¹⁾ Flow with deviating Δp :

$$q_x = q_{Vnom} \times \sqrt{\frac{\Delta p_x}{35}}$$

²⁾ The cleanliness classes stated for the components have to be maintained in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.For the selection of the filters see www.boschrexroth.com/filter.

Technical data

(For applications outside these parameters, please consult us.)

Hydraulic fluid	Classification	Suitable sealing materials	Standards	Data sheet
Mineral oils	HL, HLP, HLPD, HVLP, HVLDP	NBR, FKM	DIN 51524	90220
Bio-degradable	▶ Insoluble in water	HETG	ISO 15380	90221
		HEES		
	▶ soluble in water	HEPG	ISO 15380	
Flame-resistant	▶ water-free	HFDU, HFDR	ISO 12922	90222
	▶ containing water	HFC (Fuchs Hydrotherm 46M, Petrofer Ultra Safe 620)	ISO 12922	on request



Important information on hydraulic fluids:

- ▶ For more information and data on the use of other hydraulic fluids, please refer to the above data sheets or contact us.
- ▶ There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.)!
- ▶ The flash point of the hydraulic fluid used must be 40 K higher than the maximum solenoid surface temperature.

▶ Flame-resistant – containing water:

- Maximum pressure differential per control edge 50 bar
- Pressure pre-loading at the tank port > 20 % of the pressure differential, otherwise increased cavitation
- Life cycle as compared to operation with mineral oil HL, HLP 50 to 100 %

static / dynamic		
Hysteresis	%	≤ 0,2
Manufacturing tolerance q_{Vmax}	%	≤ 10
Temperature drift	% / 10 K	Zero shift < 0.25
Pressure drift	% / 100 bar	Zero shift < 0.15
Zero compensation		Ex factory ± 1 %

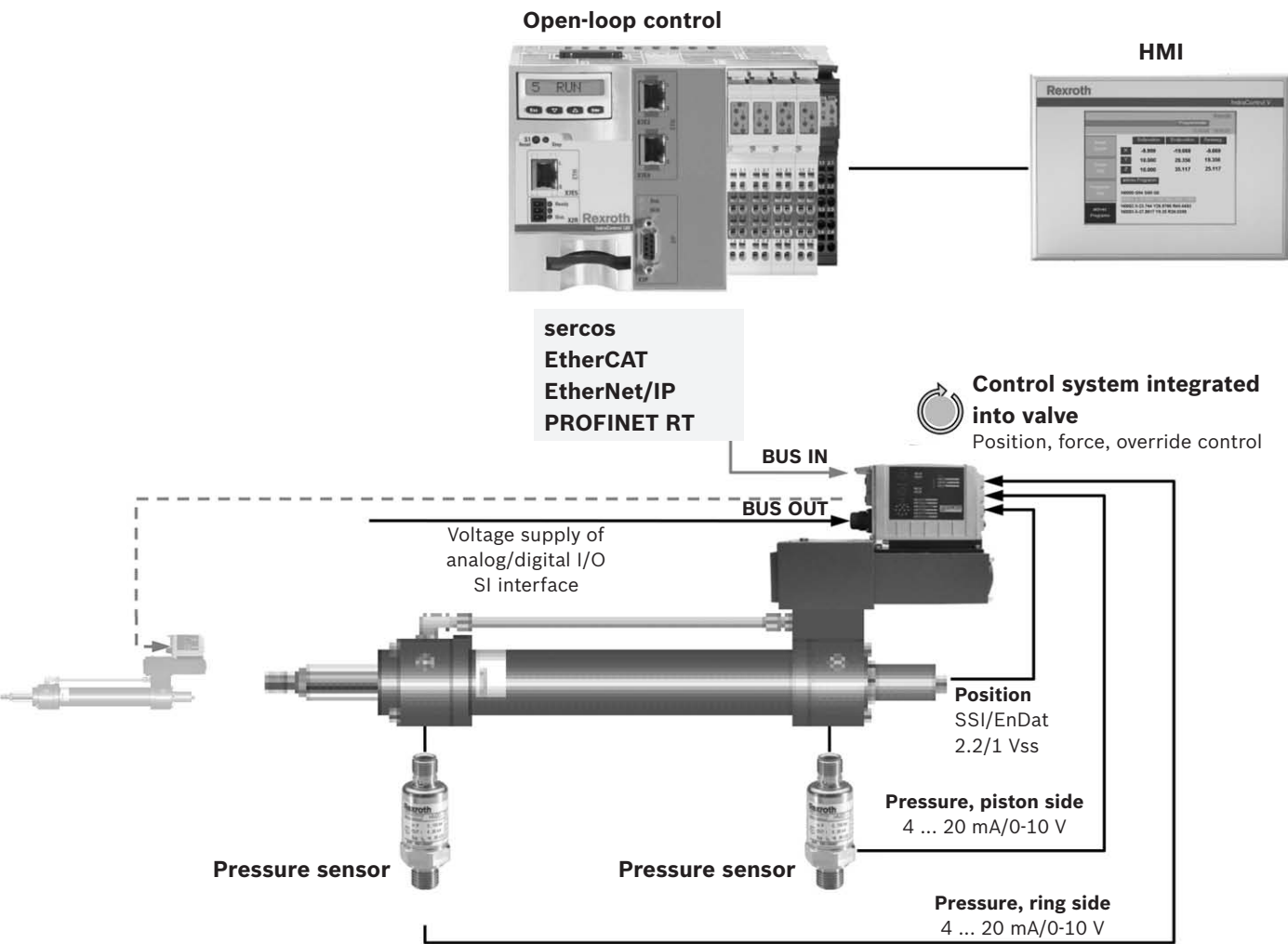
electrical, integrated electronics (OBE)		
Relative duty cycle	%	100 (continuous operation)
Protection class according to EN 60529		IP 65 with mounted and locked plug-in connectors
Supply voltage ^{3); 4)}	▶ Nominal voltage	VDC 24
	▶ Lower limit value	VDC 18
	▶ Upper limit value	VDC 36
	▶ Maximum admissible residual ripple	Vpp 2.5 (Comply with absolute supply voltage limit value!)
Current consumption	▶ Maximum ⁵⁾	A 2,5
	▶ Impulse current	A 4
Maximum power consumption	▶ Size 6	W 40
	▶ Size 10	W 60
AD/DA resolution	▶ Analog inputs	12 bit
	▶ Analog output	10 bit
Protective grounding conductor and screening		see device pin assignment (CE-compliant installation) page 10 and 11
Required fuse protection, external	A	4, time-lag
Adjustment		calibrated at plant, see valve characteristic curve page 13 ... 16
Conformity		CE according to EMC Directive 2004/108/EC tested according to EN 61000-6-2 and EN 61000-6-3

³⁾ Supply voltage is used directly for sensor connections X2M1, X2M2 and X8M (no internal voltage limitation)

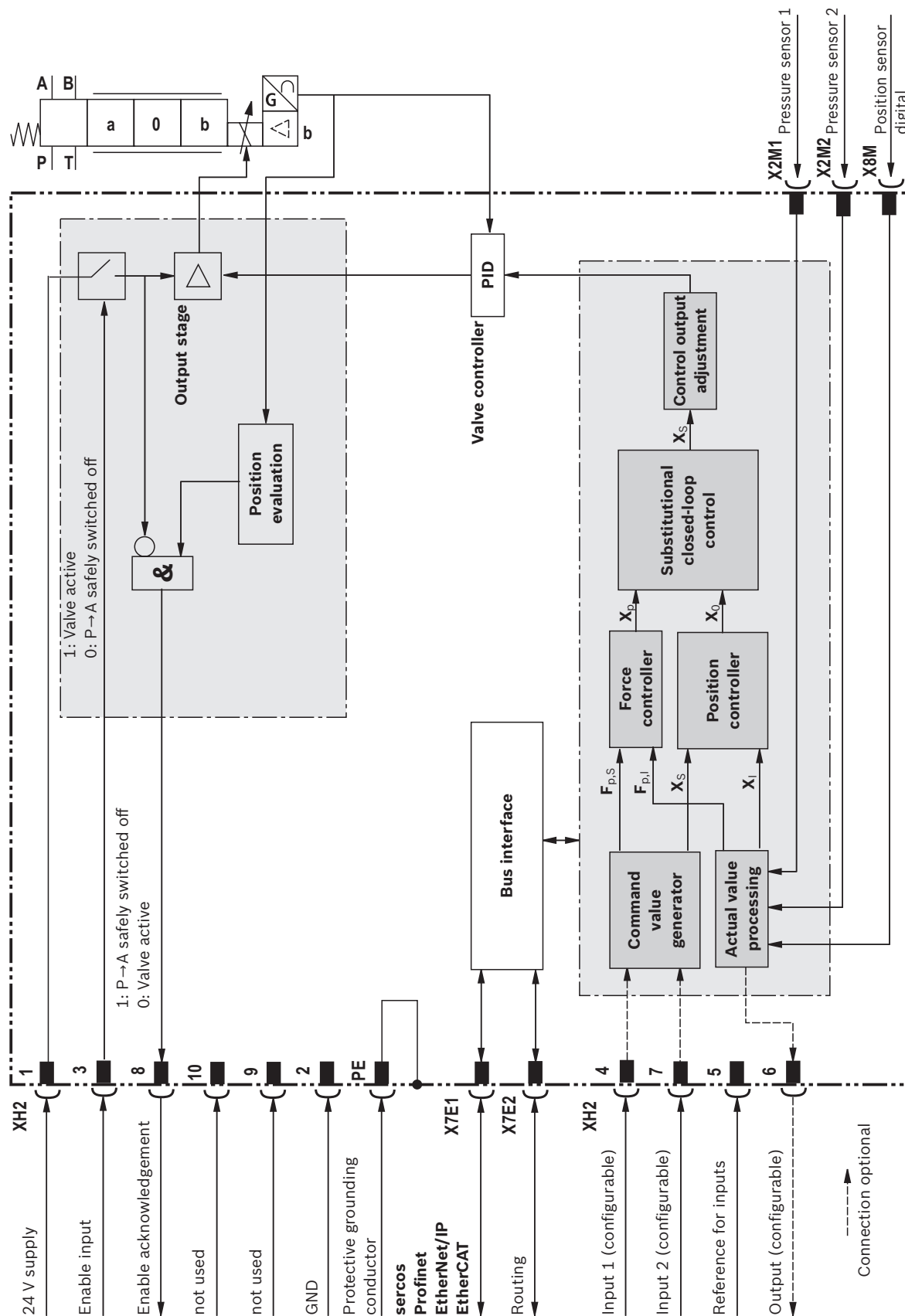
⁴⁾ The voltage limit values must be complied with directly on the valve connector (note the cable length and cable cross-section!)

⁵⁾ The maximum current consumption increases according to the external load when the sensor inputs or the switching output are used

Representation of the axis controller in the system network



Block diagram/controller function block

**Detailed description of the safety function:**

After the signal at the enable input has been removed, the output stage, and thus the solenoid of the valve, are internally separated from the available supply voltage. The enable acknowledgement will only be activated after the safe valve control spool position has been achieved.

For a detailed description of the safety function, see operating instructions 29391-B.

Electrical connections, assignment

Connector pin assignment XH2, 11-pole + PE according to EN 175201-804

Pin	Core marking ¹⁾	Interface D6 assignment
1	1	24 VDC supply voltage
2	2	GND
3	3	Release input output stage 24 VDC (high $\geq$ 15 V; low < 2 V)
4	4	Command value 1 (4 ... 20 mA / $\pm$ 10 V) ²⁾
5	5	Reference for command values
6	6	Actual value (4 ... 20 mA / $\pm$ 10 V) ^{2, 3)}
7	7	Command value 2 (4 ... 20 mA / $\pm$ 10 V) ²⁾
8	8	Enable acknowledgement output stage 24 VDC ($I_{\max}$ 50 mA) ⁴⁾
9	9	not used
10	10	not used
11	11	Switching output 24 V (error signal or power switching signal) maximum 1.5 A ⁴⁾
PE	green-yellow	Functional ground (connected directly to metal housing)

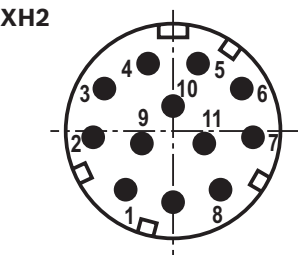
- 1)

Core marking of the connection lines for mating connector with cable set (see accessories page 20)
- 2)

Selection via commissioning software
- 3)

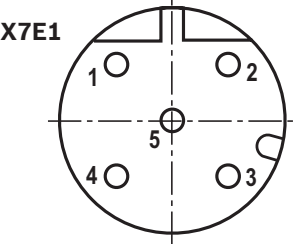
For diagnostic purposes, precise actual value response via Ethernet interface
- 4)

A load increases the current consumption on pin 1



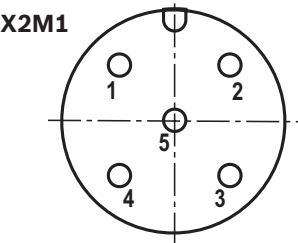
Device pin assignment for Ethernet interface “X7E1” and “X7E2” (coding D), M12, 4-pole, socket

Pin	Assignment
1	TxD +
2	RxD +
3	TxD –
4	RxD –
5	not used



Analog configurable sensor interfaces, connections “X2M1”, “X2M2” (coding A), M12, 5-pole, socket

Pin	Assignment
1	+24 V voltage output (sensor supply) ^{1; 2)}
2	Sensor signal input current (4 ... 20 mA) ³⁾
3	GND
4	Sensor signal input voltage (0 ... 10 V) ³⁾
5	Negative differential amplifier input to pin 4 (optional)



- 1)

Voltage output equal to the voltage supply on input XH2. (Maximum load capacity, see page 11)
- 2)

A load increases the current consumption of the valve (pin 1 on connector XH2)
- 3)

Only one signal input per interface, configurable

Electrical connections, assignment

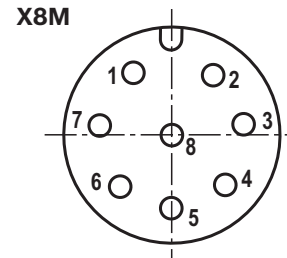
Digital sensor interface SSI, EnDat 2.2 or 1 Vss measurement system "X8M", M12, 8-pole, socket

Pin	Allocation SSI ¹⁾	Allocation EnDat 2.2 ^{1; 2)}	1Vss pin assignment
1	GND	GND	GND
2	+24 V ³⁾	+5 V ³⁾	+5 V ³⁾
3	Data +	Data +	A +
4	Data –	Data –	A –
5	GND	GND	B +
6	Clock –	Clock –	B –
7	Clock +	Clock +	R +
8	+24 V ³⁾	+5 V ³⁾	R –

¹⁾ Pins 2, 8 and 1, 5 all with the same assignment

²⁾ Supported resolution ≥ 10 nm

³⁾ A load increases the current consumption of the valve
(pin 1 on connector XH2)

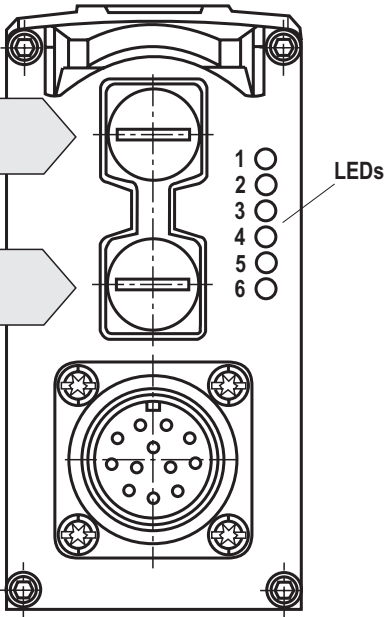


Notices:

- ▶ Maximum load on pin 2 of the sensor interfaces "X2M1", "X2M2" and "X8M" in total (sensor supply) 350 mA (1Vss, EnDat 2.2: 250 mA). This can be divided across "X2M1", "X2M2" and "X8M" as desired.
- ▶ SSI:
 - Coding: Gray-Code
 - Data width: adjustable 12 ... 28 bits
 - Line receiver / line driver: RS485
- ▶ EnDat 2.2:
 - Interface (clock and data) according to EnDat specification in accordance with RS 485
 - Resolution: minimum 10 nm or higher
- ▶ Reference potential for all signals: GND
- ▶ We recommend connecting the screens on both sides over the metallic housings of the plug-in connectors. Using connector pins will affect the effectiveness of the screen. Internal screens are not required.

LED display

LED	Interface	Sercos	EtherNET/IP	EtherCAT	PROFINET
1	X7E1	Activity	Activity	Not used	Activity
2		Link	Link	Link/activity	Link
3	Electronics module	S	Network status	Network status	Network status
4		Module status	Module status	Module status	Module status
5	X7E2	Activity	Activity	Not used	Activity
6		Link	Link	Link/activity	Link



Displays of the status LEDs

Module status LED (LED 4)	Status display
From	No voltage supply
Green-red, flashing	Initializing
Green, flashing	Drive ready
Green	Drive active
Orange flashing	Warning
Red, flashing	Error

Network status LED (LED 3)	Status display
From	No voltage supply
Green	Operation

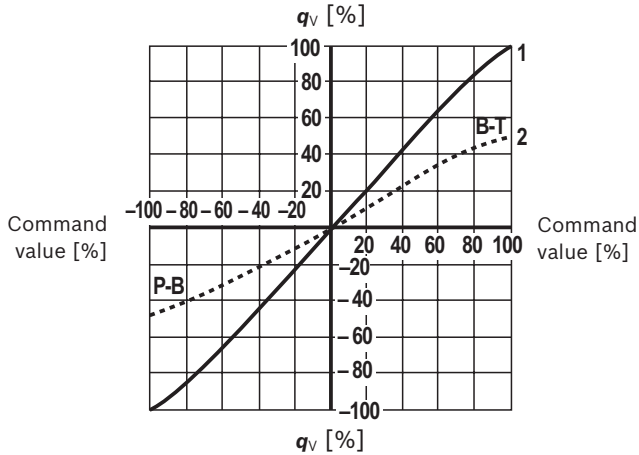
 Notices:

- ▶ LEDs 1, 2, 5 and 6 relate to interfaces “X7E1” and “X7E2”
 - Link: Cable plugged in, connection established (permanently lit)
 - Activity: Data sent/received (flashing)
- ▶ Module status LEDs 3 and 4 relate to the electronics module
- ▶ For a detailed description of the diagnosis LEDs, please refer to the functional description Rexroth HydraulicDrive HDS-xx.

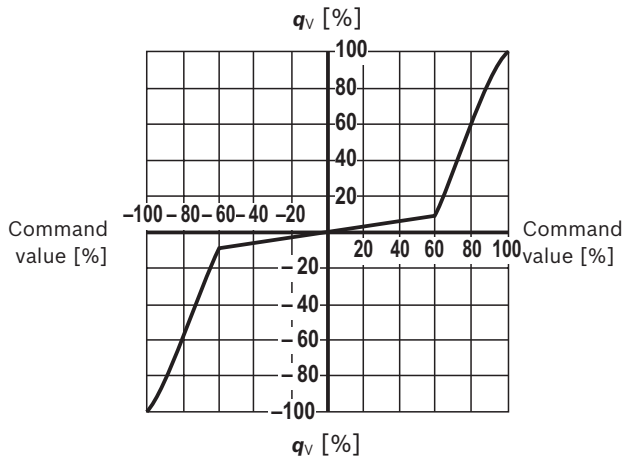
Characteristic curves: Size 6 – flow characteristic
(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$)

Flow/signal function

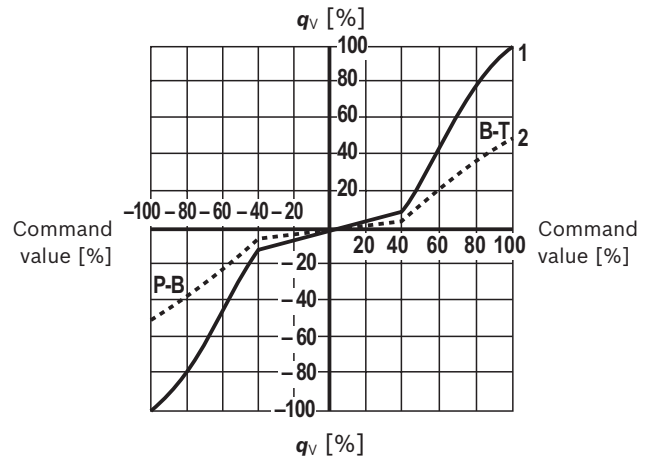
Linear characteristic curve “L”



Inflected characteristic curve “P”, inflection at 60 %

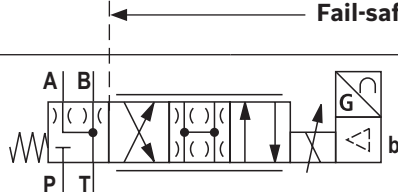
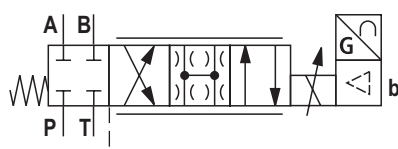
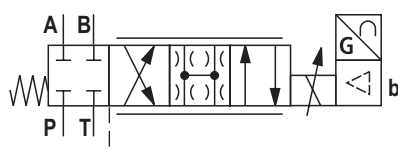


Inflected characteristic curve “P”, inflection at 40 %



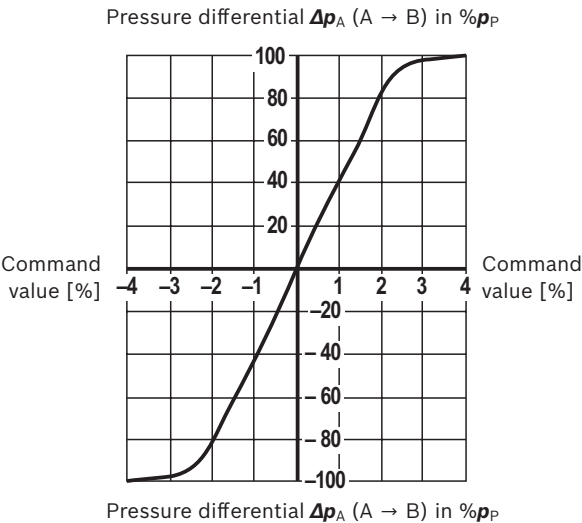
1 $q_{VA} : q_{VB} = 1:1$

2 $q_{VA} : q_{VB} = 2:1$

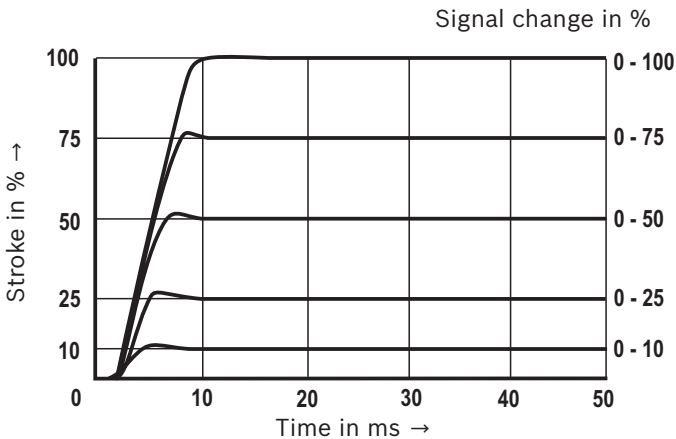
 Fail-safe position			
	Leakage flow at 100 bar	P→A P→B	50 cm ³ /min 70 cm ³ /min
	Flow at $\Delta p = 35 \text{ bar}$	A→T B→T	10 ... 20 l/min 7 ... 20 l/min
	Leakage flow at 100 bar	P→A P→B	50 cm ³ /min 70 cm ³ /min
		A→T B→T	70 cm ³ /min 50 cm ³ /min
Fail-safe	$p = 0 \text{ bar} \rightarrow 7 \text{ ms}$	Enable “off” or internal shut-off if an error has occurred $U_B \leq 18 \text{ V}$ or $I \leq 2 \text{ mA}$ (with 4 ... 20 mA signal, cable break detection: current threshold configurable)	
	$p = 100 \text{ bar} \rightarrow 10 \text{ ms}$		

Characteristic curves: Size 6
(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$)

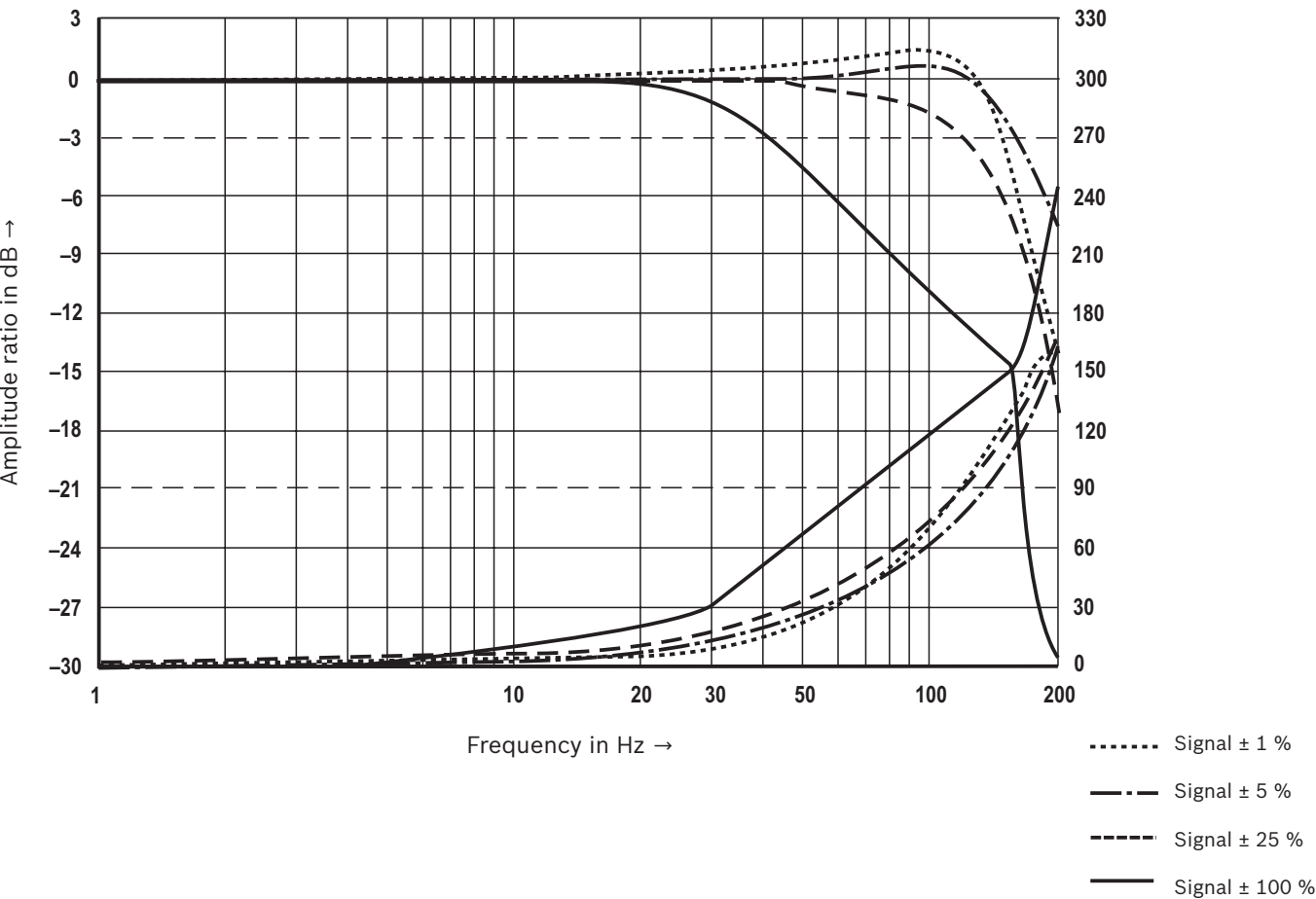
Pressure/signal characteristic curve



Transition function with stepped electric input signals



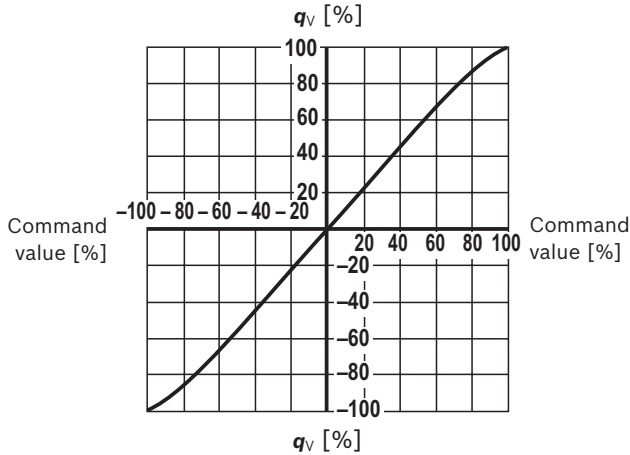
Frequency response



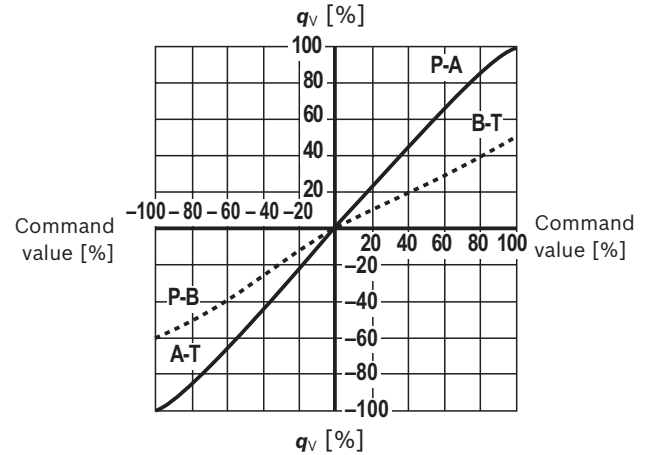
Characteristic curves: Size 10 – flow characteristic
(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$)

Flow/signal function

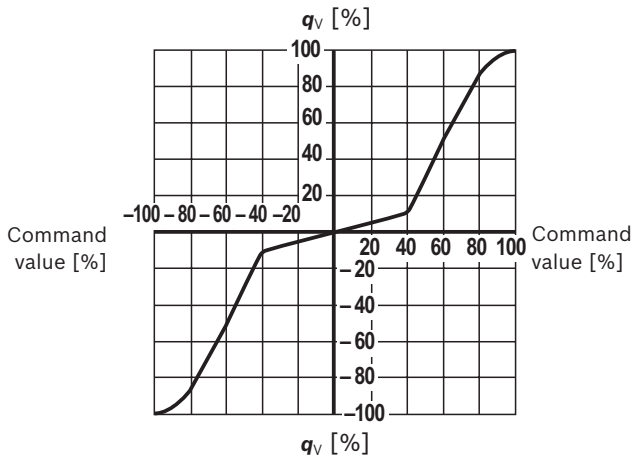
Linear characteristic curve “L” (1:1)



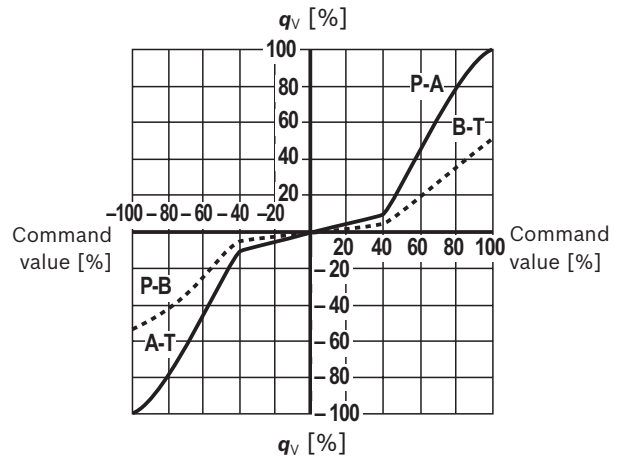
Linear characteristic curve “L” (2:1)

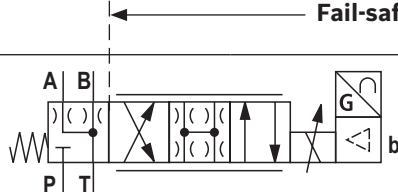
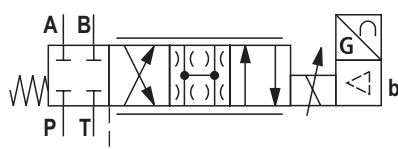
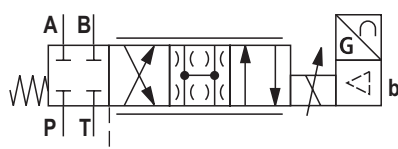


Inflected characteristic curve “P”, inflection at 40 % (1:1)



Inflected characteristic curve “P”, inflection at 40 % (2:1)

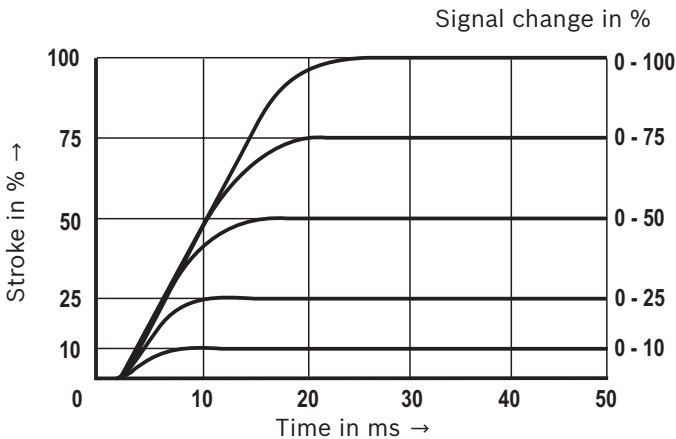
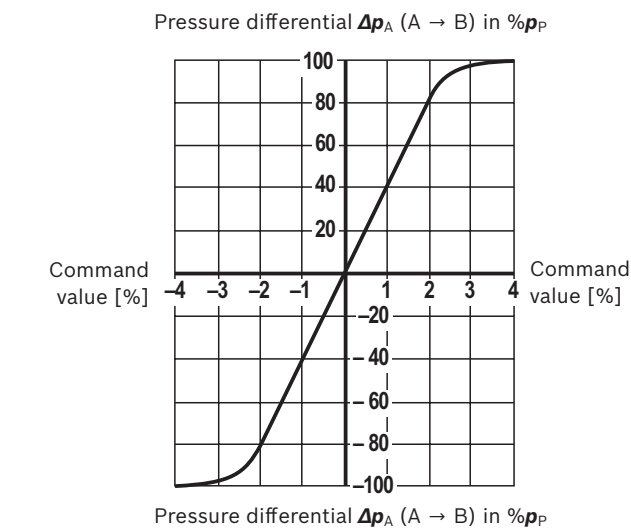


 Fail-safe position			
	Leakage flow at 100 bar	P→A P→B	50 cm ³ /min 70 cm ³ /min
	Flow at $\Delta p = 35 \text{ bar}$	A→T B→T	100 ... 110 l/min 10 ... 25 l/min
	Leakage flow at 100 bar	P→A P→B	50 cm ³ /min 70 cm ³ /min
		A→T B→T	70 cm ³ /min 50 cm ³ /min
Fail-safe	$p = 0 \text{ bar} \rightarrow 12 \text{ ms}$	Enable “off” or internal shut-off if an error has occurred $U_B \leq 18 \text{ V}$ or $I \leq 2 \text{ mA}$ (with 4 ... 20 mA signal, cable break detection: current threshold configurable)	
	$p = 100 \text{ bar} \rightarrow 16 \text{ ms}$		

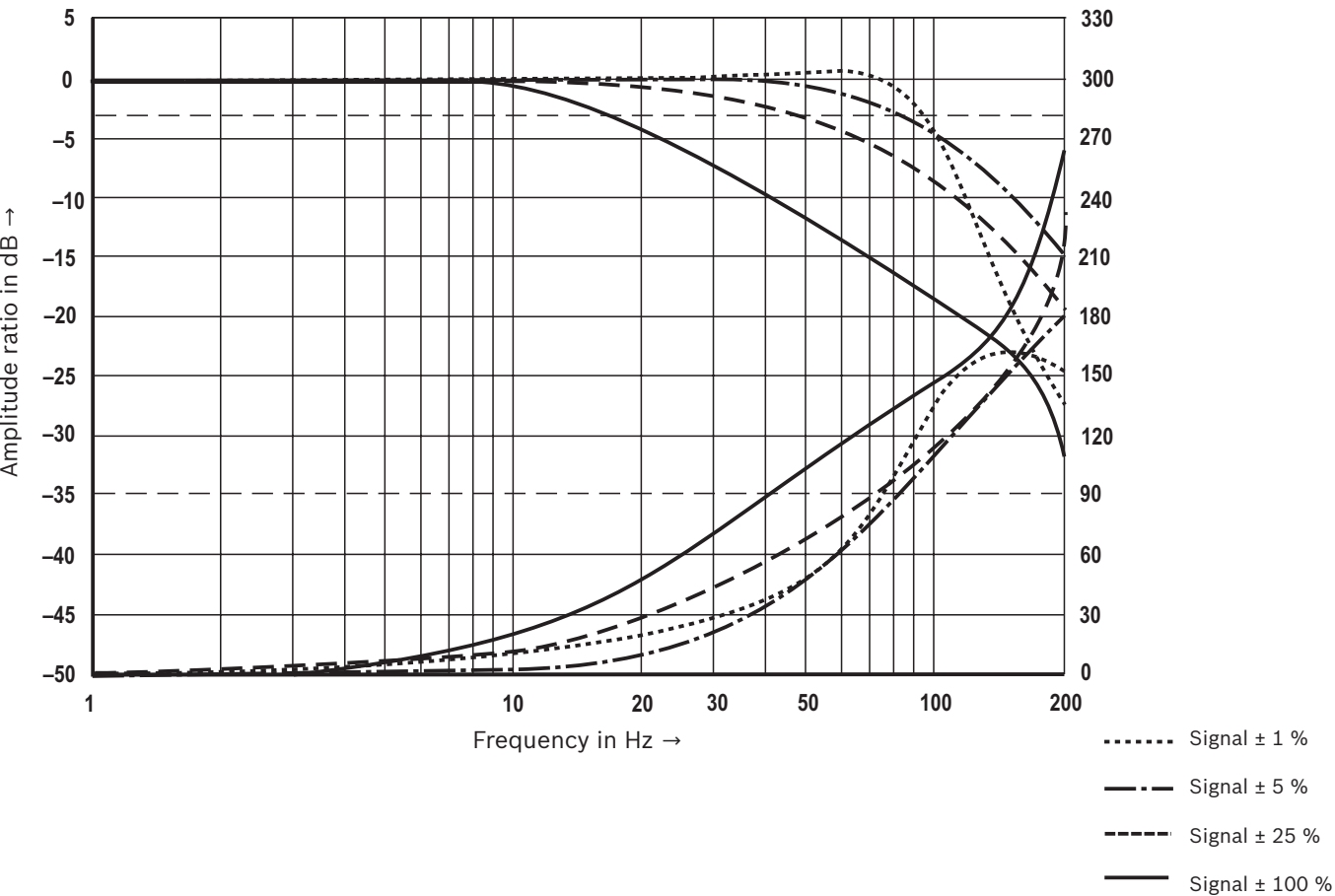
Characteristic curves: Size 10
(measured with HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^{\circ}\text{C}$)

Pressure/signal characteristic curve

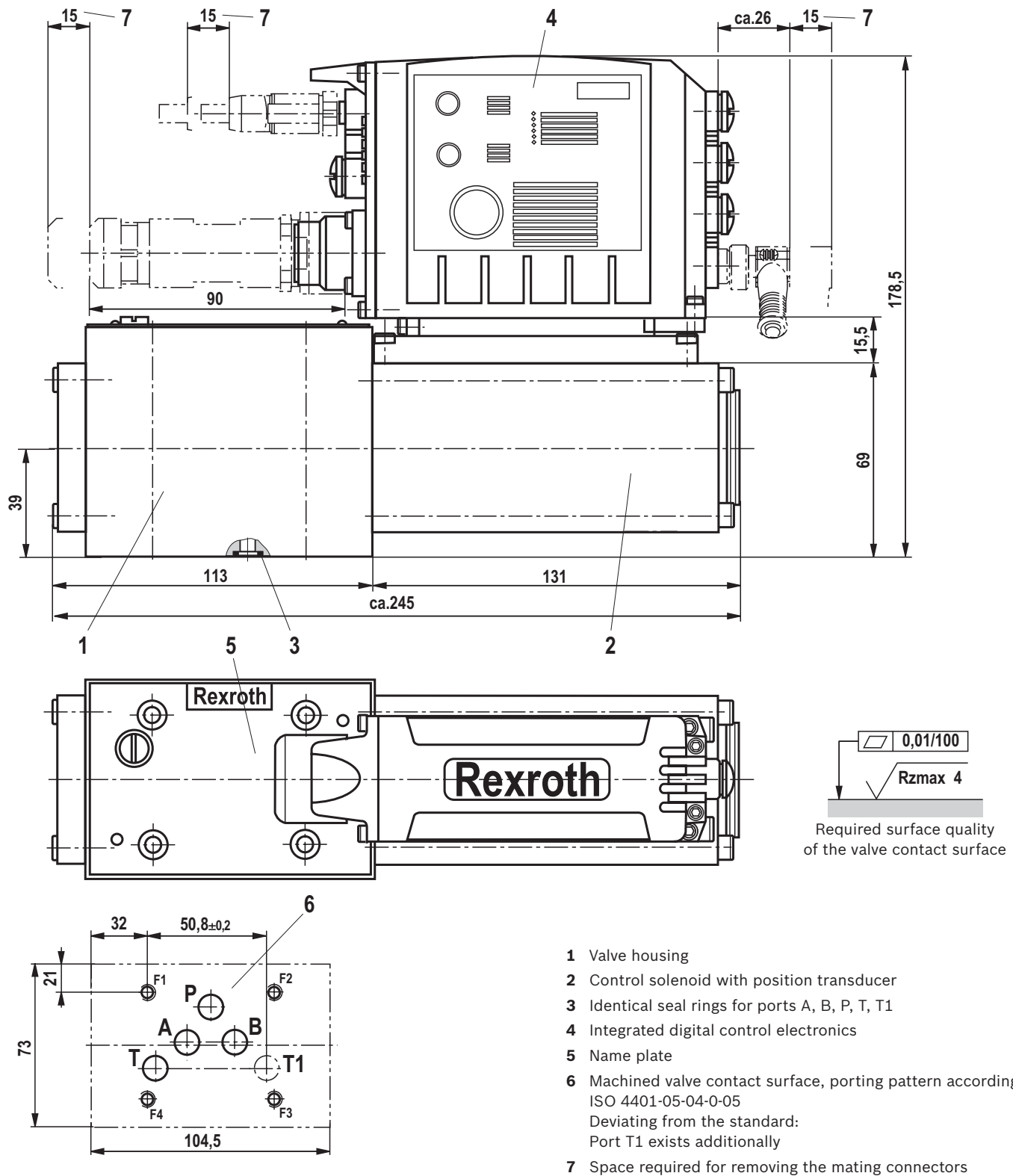
Transition function with stepped electric input signals



Frequency response



Dimensions: Size 10 (dimensions in mm)



- 1 Valve housing
- 2 Control solenoid with position transducer
- 3 Identical seal rings for ports A, B, P, T, T1
- 4 Integrated digital control electronics
- 5 Name plate
- 6 Machined valve contact surface, porting pattern according to ISO 4401-05-04-0-05
Deviating from the standard:
Port T1 exists additionally
- 7 Space required for removing the mating connectors



Notices:

The dimensions are nominal dimensions which are subject to tolerances.

Valve mounting screws see page 19.

Dimensions

Valve mounting screws (separate order)

Size	Hex socket head cap screws	Material number
6	4 hexagon socket head cap screws ISO 4762 - M5 x 30 - 10.9-N67F 821 70 (galvanized according to Bosch standard N67F821 70) Tightening torque $M_A = 6^{+2}$ Nm	2910151166
10	4 hexagon socket head cap screws ISO 4762 - M6 x 40 - 10.9-N67F 821 70 (galvanized according to Bosch standard N67F821 70) (Tightening torque $M_A = 11^{+3}$ Nm)	2910151209

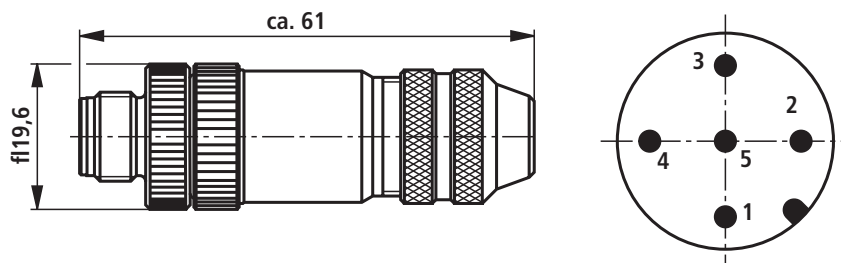

Notice:

The tightening torque of the hexagon socket head cap screws refers to the maximum operating pressure.

Accessories (separate order)

Sensor connections X2M1 and X2M2

Cable set (analog sensors)	Length in m	Material number
Cable set for connecting Rexroth pressure sensors HM20, shielded, 5-pole, A coding, PUR/PVC, straight connector M12, on straight socket M12, line cross-section 0.34 mm ²	0,6	R901111709
	1,0	R901111712
	2,0	R901111713
Connectors (analog sensors)	View, dimensions	Material number
Connectors, 5-pole, M12 x 1, pins, A coding, metal version (cable diameter 4 ... 6 mm)	see below	R901075542



Sensor connection X8M

Cable set (only SSI, 1Vss) ¹⁾	Length in m	Material number
Shielded, 8-pole, A coding, straight connector M12, on free line end, line cross-section 0.25 mm ²	10,0	R913002641

¹⁾ **Recommendation:** If an EnDat 2.2 sensor is used, please refer to the sensor manufacturer Heidenhain with respect to a cable set.

Accessories (separate order)

Ethernet connections X7E1 and X7E2

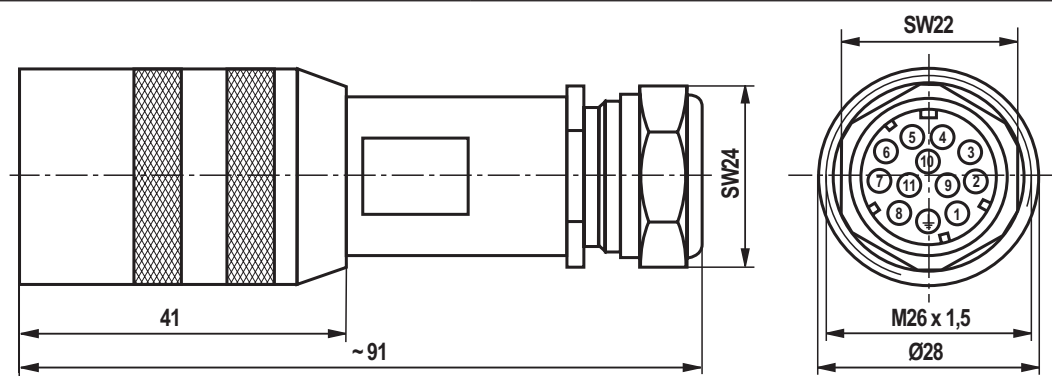
Cable set (Ethernet interface)	Length in m	Material number
Cable set, shielded, 4-pole, D coding, straight connector M12, on straight connector M12, line cross-section 0.25 mm², CAT 5e	freely selectable (= xx.x)	R911172111 (additionally indication of type designation RKB0040/xx.x)
Cable set, shielded, 4-pole, straight connector M12, on straight connector RJ45, line cross-section 0.25 mm², CAT 5e	freely selectable (= xx.x)	R911172135 (additionally indication of type designation RKB0044/xx.x)

Protective cap

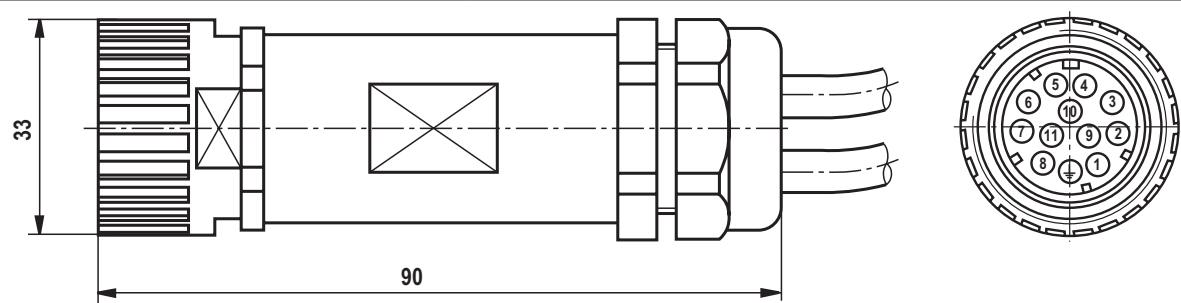
Protective cap M12	Design	Material number
		R901075563

Connection XH2

Mating connector	Design	Material number
Mating connectors according to DIN EN 175201-804 (12-pole, metal design)	Mating connector (assembly kit) for a cable diameter of 12 ... 15 mm	R901268000
	Mating connector with 5 m cable, 12 x 0.75 mm² with cable shield, assembled	R901272854
	Mating connector with 20 m cable, 12 x 0.75 mm² with cable shield, assembled	R901272852



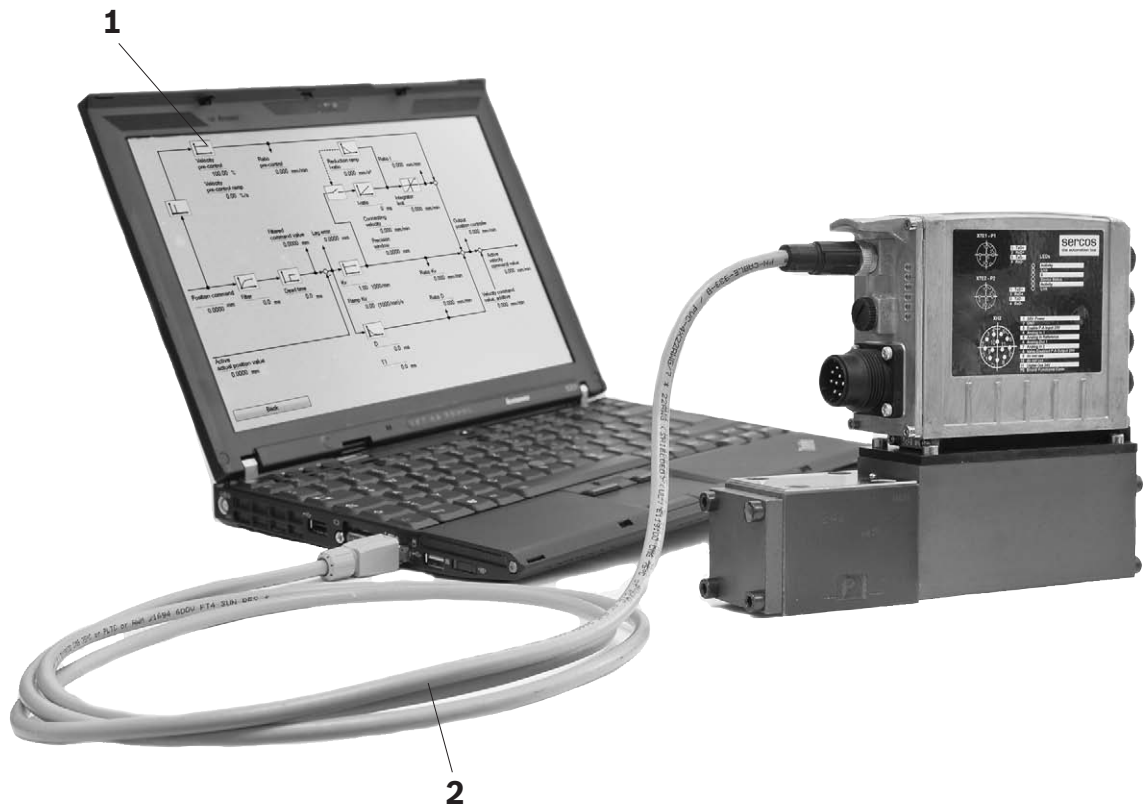
Mating connector in accordance with DIN EN 175201-804 (12-pole, plastic version)	Mating connector (assembly kit)	R900884671
	Mating connector with 2 x 5 m cable, supply line (3 x 1.0 mm²) and signal line (10 x 0.14 mm²) separated, with cable shield, assembled	R900032356
	Mating connector with 2 x 20 m cable, supply line (3 x 1.0 mm²) and signal line (10 x 0.14 mm²) separated, with cable shield, assembled	R900860399



Accessories (separate order)

Parameterization

The following is required for the parameterization via PC		Material number/download
1 Commissioning software	IndraWorks, Indraworks D, Indraworks DS	www.boschrexroth.com/IAC
2 Connection cable, 3 m	Shielded, M12 on RJ45, length can be freely chosen (= xx.x)	R911172135 (additionally indication of type designation RKB0044/xx.x)



Project planning and maintenance instructions

- ▶ The supply voltage must be permanently connected, as otherwise bus communication is not possible.
- ▶ If electromagnetic interference is to be anticipated, suitable measures must be taken to ensure the function (depending on the application, e.g. shielding, filtration)!
- ▶ The devices have been tested in the plant and are supplied with default settings.
- ▶ Only complete units can be repaired. Repaired devices are returned with default settings. User-specific settings are not maintained. The machine end-user will have to re-transfer the corresponding user parameters.

More information

▶ Directional control valve with electrical position feedback and integrated electronics (OBE)	Data sheet 29035 and 29037
▶ Directional control valve with integrated digital axis controller (IAC-R) and field bus interface	Data sheet 29191
▶ Directional control valve with integrated digital axis controller (IAC-R) and synchronous PROFIBUS DP/V2 (PROFIdrive profile)	Data sheet 29291
▶ Directional control valve with integrated digital axis controller	Operating instructions 29391-B on request
▶ CE Declaration of Conformity	Data sheet 45055 and 45057
▶ Subplates	Data sheet 90220
▶ Mineral oil-based hydraulic fluids	Data sheet 90221
▶ Environmentally compatible hydraulic fluids	Data sheet 90222
▶ Flame-resistant, water-free hydraulic fluids	Operating Instructions 07600-B
▶ Hydraulic valves for industrial applications	Data sheet 07900
▶ Assembly, commissioning and maintenance of hydraulic systems	
▶ Operation IAC-Multi-Ethernet electronics (xx = software version):	
– Functional description Rexroth HydraulicDrive HDS-xx	
– Parameter description Rexroth HydraulicDrive HDS-xx	
– Diagnosis description Rexroth HydraulicDrive HDS-xx	
▶ Commissioning software and documentation on the Internet	www.boschrexroth.com/IAC
▶ Filter range	www.boschrexroth.com/filter

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52/18-0
documentation@boschrexroth.de
www.boschrexroth.de

© All rights for this document, are the property of Bosch Rexroth AG, including registrations of industrial property rights. It may not be reproduced or transferred to third parties without our consent.
The data specified only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It should be taken into consideration that our products are subject to a natural process of wear and aging.

Notes

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52/18-0
documentation@boschrexroth.de
www.boschrexroth.de

© All rights for this document, are the property of Bosch Rexroth AG, including registrations of industrial property rights. It may not be reproduced or transferred to third parties without our consent.
The data specified only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It should be taken into consideration that our products are subject to a natural process of wear and aging.

Notes

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52/ 18-0
documentation@boschrexroth.de
www.boschrexroth.de

© All rights for this document, are the property of Bosch Rexroth AG, including registrations of industrial property rights. It may not be reproduced or transferred to third parties without our consent.
The data specified only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It should be taken into consideration that our products are subject to a natural process of wear and aging.