

Electric Drives
and Controls

Hydraulics

Linear Motion and
Assembly Technologies

Pneumatics

Service

Rexroth
Bosch Group

Declaration on the environmental compatibility for EMC ¹⁾, climate and mechanical load

RE 29191-U/07.10
Replaces: 06.06

1/4

Type 4WRPNH...2X

High-response valve with integrated digital axis controller (IAC-R) and field bus interface

Product description

- Direct operated high-response valve with control spool and bushing in servo quality
- Integrated digital axis controller with analog and digital sensor interfaces and field bus connection

Functionality:

- Flow control
- Position control
- Pressure control
- p/Q function
- Substitutional position/pressure and position/force control
- NC functionality

¹⁾ The presumption of conformity in the sense of the EMC directive 2004/108/EC and EMVG dated February 26, 2008 is given.

The products comply with the following standards:

1. EMC (electromagnetic compatibility)

Test according to generic standard EN 61000-6-2: 2005

			Interference resistance
EN 61000-4-2: 2007	VDE 0847-4-2	ESD (electrostatic discharge)	Air discharge: Severity level 4 / evaluation criterion A Contact discharge: Severity level 4 / evaluation criterion A
EN 61000-4-3: 2006 + A1: 2008	VDE 0847-4-3	HF fields, freely beamed	Severity level 3 / evaluation criterion A 80...1000 MHz ¹⁾ Severity level 3 / evaluation criterion A 1...2.7 GHz ¹⁾
EN 61000-4-4: 2004	VDE 0847-4-4	BURST (transient interference)	Repetition rate 5 kHz Supply voltage: Severity level 3 / evaluation criterion A Data lines: Severity level 4 / evaluation criterion A Repetition rate 100 kHz Supply voltage: Severity level 3 / evaluation criterion A Data lines: Severity level 4 / evaluation criterion A
EN 61000-4-5: 2006	VDE 0847-4-5	SURGE (surge voltage)	Supply voltage: Severity level 1 / evaluation criterion A Data line (asymmetric): Severity level 2 / evaluation criterion A
EN 61000-4-6: 2007	VDE 0847-4-6	HF fields, conducted	Severity level 3 / evaluation criterion A

Test according to generic standards EN 61000-6-3: 2007 and EN 61000-6-4: 2007

			Interference emissions
EN 55022: 2006 + A1: 2007	IEC/CISPR 16-2-3: 2006-07	Emission, radio interference field strength (housing, freely beamed)	Limits according to EN 61000-6-4: 2007 30...230...1000 MHz table 1 / line 1) ²⁾ Limits according to EN 61000-6-3:2007 40...230...1000 MHz table 1 / line 1) ³⁾

¹⁾ Severity level X (20 V/m) continuously (80 MHz ... 2.7 GHz) satisfied;
Standard requirement: 80 ... 1000 MHz: Severity level 3 (10 V/m); 1.4 ... 2.0 GHz: Severity level 2 (3 V/m)
and 2.0 GHz ... 2.7 GHz: Severity level 1 (1 V/m)

²⁾ Limit class A "Industry": The limit is always undershot by the specimens.

³⁾ Limit class B "Small business and household": The limit is valid as of 40 MHz (up to 1 GHz) and is always undershot in this range. In the range from 30 to 40 MHz, the limit is exceeded, however by less than 3 dB.

The products comply with the following standards (continued):

2. Climate

Test according to EN 60068-2 / IEC 68-2 (environmental test)

EN 60068-2-1:1994		Cold test	2 cycles, -20 °C Duration 2 hours
EN 60068-2-2:1993		Dry heating test	2 cycles, +55 °C Duration 2 hours
EN 60068-2-1:1994 EN 60068-2-2:1993		Storage temperature	-25 °C duration 16 hours +85 °C duration 16 hours
	IEC 68-2-14:1986	Temperature change	2 cycles, -25 °C to +55 °C Duration 3 hours at min. / max. temperature
EN 60068-2-30:1999		Humid heat, cyclic	Variant 2 +25 °C to +55 °C 93 % to 97 % relative humidity 2 cycles à 24 hours each

3. Mechanical load

Vibration and shock test according to EN 60068-2 / IEC 68-2 / DIN 40046 (environmental test)

Tested on three axes (X/Y/Z)

EN 60068-2-6:1996		Vibrations, sinusoidal	10 cycles, 5 to 2000 to 5 Hz with logarithmic frequency changing speed of 1 octave/min. 5 to 57 Hz, amplitude 1.5 mm (p-p) 57 to 2000 Hz, amplitude 10 g
	IEC 68-2-36:1973 DIN 40046-24:1977	Vibrations (random) Broadband noise	20 to 2000 Hz, A) Spectral acceleration density 0.05 g ² /Hz (10 g RMS / 30 g peak), testing time 30 min
EN 60068-2-27:1993		Shocking	Half sine 15 g / 11 ms, 3 x in positive / 3 x in negative direction (total of 6 individual shocks)

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