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

RE 30543-U/04.10 1/4

Type VT-HACD-3-2X

Digital control electronics

Product types

– VT-HACD-3-2X... according to data sheet RE 30543 and operating instructions RE 30543-B

Description of the product family

The digital VT-HACD-3-2X control electronics are parameterizable control electronics for controlled axes. They comply with the specific requirements for control of hydraulic axes.

[1)] In the sense of the EMC directive 2004/108/EC and the EMVG (act on the electromagnetic compatibility of operating media) dated 02/26/2008

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 Severity level 3 / evaluation criterion A 1…2.7 GHz
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: Asymmetric (line against ground) Symmetric (line against line) Severity level 1 / evaluation criterion A Data lines: [1) 2)] Asymmetric (line against ground) Severity level 2 / evaluation criterion C Symmetric (line against line) Severity level 2 / evaluation criterion B
EN 61000-4-6:2007	VDE 0847-4-6	HF fields, conducted	Severity level 3 / evaluation criterion A 0.15...80…230 MHz
EN 61000-4-8:1993 + A1:2001	VDE 0847-4-8	Magnetic fields	Severity level 4 / evaluation criterion A

Footnotes, see page 3

The products comply with the following standards (continued):

1. EMC (electromagnetic compatibility), continued

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

			Transient emissions
EN 55022:2006 + A1: 2007	IEC/CISPR 16-2-1:2005-09 point 7.4.1 IEC/CISPR16-1-2:2006-08 point 4.3	Emission Radio interference voltage (direct voltage / power supply connection)	Limits according to EN 61000-6-4:2007 0.15…30 MHz table 1 / line 2) [3] Limits according to EN 61000-6-3:2007 0.15…30 MHz table 1 / line 3) [3]
EN 55022:2006 + A1: 2007	IEC/CISPR 16-2-3:2006-07	Emission Radio interference field strength (housing, freely radiated)	Limits according to EN 61000-6-4:2007 30…230...1000 MHz table 1 / line 1) [3] Limits according to EN 61000-6-3:2007 30…230...1000 MHz table 1 / line 1) [4]

Notes:

If not otherwise indicated, the data with regard to standard conformity apply for all VT-HACD-3-2X types. The installation instructions apply (top hat rail mounting structure, shield connections, cable laid bundled in the duct, application used according to standard cables for ProfiBus and/or EtherNet/IP).

[1] We recommend to use unshielded individual wires (here: DIGITAL I/Os of the VT-HACD-3-2X) only up to a maximum length of 30 m per wire. For lines which are longer than 30 m shielded cables must be used. The cable shield must be applied with low impedance according to the installation instructions.

[2] Evaluation criterion C on the basis of the protection and safety shut-down of the electronic system. The electronic system can be switched to operation mode by pressing the reset or Power OFF/ON button.

[3] Valid without restriction for all control types of the VT-HACD-3-2X

[4] Valid for all control types of the VT-HACD-3-2X with the following requirements:
Folding ferrite (WE 74271112) mounted on the supply line (U_B)

The presumption of conformity is given in the sense of the EMC directive 2004/108/EC and the EMVG (act on the electromagnetic compatibility of operating media) dated 02/26/2008.

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 –5 °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 –5 °C to +55 °C Duration: 3 hours each at min. / max. temperature
EN 60068-2-30:1999		Humid heat, cyclic	Variant 2 +25 °C to +40 °C 93 % to 97 % of relative humidity 2 cycles à 24 hours

3. Mechanical load

Vibration and shock test according to EN 60068-2 / IEC 68-2 / DIN 40046 (environmental test)
Test on three axes (X/Y/Z)

EN 60068-2-6:1996			Vibrations, sinusoidal	20 cycles, 5...500 Hz with logarithmic frequency changing speed of 1 oct./ min. 5 to 57 Hz, amplitude 0.3 mm (p-p) 57 to 500 Hz, amplitude 2 g
EN 60068-2-64:1995	IEC 68-2-36:1973	DIN 40046-24:1977	Vibrations (random) Broadband noise	20 to 500 Hz, Amplitude 0.01 g^2 / Hz (2.2 g RMS) Testing time: 30 min
EN 60068-2-27:1993			Shock test	Half sine 15g / 11 ms, 3 x in positive/ 3 x in negative direction per axis, total of 18 individual shocks

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