

<b>MANNESMANN REXROTH</b>	<b>Statement on ecological compatibility for the fields of EMC (as defined by the EMVG Law of 30th August 1995 and the Directive 89/336/EWG), Climate and Mechanical Stress</b>	<b>RE 29 083-U/11.00</b>
<p><b>Product family</b></p> <p>Proportional Control valves with integrated electronics and closed loop position control of the valve spool.</p> <p><b>Product family description:</b></p> <p>Piloted proportional control valves, size 10 to size 35, with high sensitivity and less hysteresis. The spool position is controlled through an inductive position sensor. The control electronics (type VT 13060-3X) is integrated at the valve.</p>	<p><b>Product type</b></p> <p>4WRTE -4X/...</p>	<p><b>RE sheet</b></p> <p>RE 29 083</p>
<b>The above mentioned products conform to the following standards:</b>		
<b>1. EMC (Electro-magnetic compatibility)</b>		
<p><b>prEN 50082-2:1994</b></p> <p>prEN 61000-4-2:1994 IEC 1000-4-2</p> <p>prEN 61000-4-4:1994 IEC 1000-4-4</p> <p>Test set-up to prEN 61000-4-2 and prEN 61000-4-4</p>	<p><b>(VDE 0839 part 82-2)</b></p> <p>VDE 0847-4-2</p> <p>VDE 0847-4-4</p>	<p><b>Field basic standard</b></p> <p>ESD (electro-static discharge)</p> <p>BURST (transient interference)</p> <p><b>Interference immunity</b></p> <p>Air discharge up to: Severity grade 3 / Evaluation criteria 2 Contact discharge up to: Severity grade 3 / Evaluation criteria 2</p> <p>Power supply: Severity grade 3 / Evaluation criteria 2</p> <p>Data lines up to: Severity grade 2 / Evaluation criteria 1 Severity grade 4 / Evaluation criteria 2</p>
<p><b>EN 50081-1:1992</b></p> <p>EN 55022:1994</p>	<p><b>(VDE 0839 part 81-1)</b></p> <p>VDE 0878 part 22</p>	<p><b>Emitted interference</b></p> <p>Radio interference radiation is dependent on the build-up and wiring</p>
<p>If the valve is correctly connected and is wired in accordance with the RE sheet (see list above) the build-up complies with the requirements of the EMC standards EN 50081-1 and prEN 50082-2.</p> <p>Climate and mechanical stress tests are to be conducted by middle of 1998.</p>		

## 2. Climate

### EN 60068-2

### Environmental test

EN 60068-2-1:1994	Cold test	2 cycles – 20 °C, dwell time 2 hours
EN 60068-2-2:1993	Dry heat test	2 cycles + 50 °C, dwell time 2 hours
EN 60068-2-1:1994 EN 60068-2-2:1993	Storage temperature	– 20 °C, dwell time 16 hours + 80 °C, dwell time 16 hours
IEC 68-2-14:1986	Temperature cycles	2 cycles – 20 °C to + 50 °C, dwell time 3 hours at min / max temperature
IEC 68-2-30:1985	Damp heat, cyclical	Variant 2 + 25 °C to + 55 °C, 90 % to 97 % relative humidity 2 cycles, 24 hours each

## 3. Mechanical stress

### Vibration test in three perpendicular axes

IEC 68-2-6/:1990	Sine test	10 cycles, 5 – 2000 – 5 Hz at a logarithmic frequency change rate of 1 Oct./min 5 to 57 Hz, amplitude 1.5 mm (p-p) 57 to 2000 Hz, amplitude 10 g Dwell time 30 min at resonance frequency
IEC 68-2-36:1973	Random test	20 to 2000 Hz, amplitude 0.05 g <sup>2</sup> / Hz (10 g RMS) Testing time 30 min per axis
ICE 68-2-27:1989	Shock test	Half sine 15 g / 11 ms in positive / negative direction per axis, in total 18 individual shocks



**Mannesmann Rexroth GmbH**  
**D-97813 Lohr am Main**  
**Jahnstraße 3-5 • D-97816 Lohr am Main**  
**Telefon 0 93 52 / 18-0 • Telefax 0 93 52 / 18-10 40**  
**Telex 6 89 418-0**