

**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**

RE
29 083-U/11.00

Product family

Proportional Control valves with integrated electronics and closed loop position control of the valve spool.

Product type

4WRTE -4X/...

RE sheet

RE 29 083

Product family description:

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.

The above mentioned products conform to the following standards:

1. EMC (Electro-magnetic compatibility)

prEN 50082-2:1994

(VDE 0839 part 82-2)

Field basic standard

Interference immunity

prEN 61000-4-2:1994
IEC 1000-4-2

VDE 0847-4-2

ESD
(electro-static discharge)

Air discharge up to:
Severity grade 3 / Evaluation criteria 2
Contact discharge up to:
Severity grade 3 / Evaluation criteria 2

prEN 61000-4-4:1994
IEC 1000-4-4

VDE 0847-4-4

BURST
(transient interference)

Power supply:
Severity grade 3 / Evaluation criteria 2

Data lines up to:
Severity grade 2 / Evaluation criteria 1
Severity grade 4 / Evaluation criteria 2

Test set-up to prEN 61000-4-2 and prEN 61000-4-4

EN 50081-1:1992

(VDE 0839 part 81-1)

Emitted interference

EN 55022:1994

VDE 0878 part 22

Radio interference radiation is dependent on the build-up and wiring

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.

Climate and mechanical stress tests are to be conducted by middle of 1998.

2. Climate

EN 60068-2

EN 60068-2-1:1994

Cold test

Environmental 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

Storage temperature

– 20 °C, dwell time 16 hours
+ 80 °C, dwell time 16 hours

EN 60068-2-2:1993

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,
cyclicalVariant 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 g² / 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

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