

(1) **Certificate of Conformity**

(2) **Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – Directive 2014/34/EU**

(3) Certificate Number:

EPS 11 ATEX 1 312 X

Revision 5

(4) Equipment: MLY02.100, MLY10.241, YR2.DIODE, YRM2.DIODE, YR40.241, YR80.241, YR40.242, YR40.245, YR40.482, YR80.242, YR20.242, YR20.246, PIRD20.241 (all models optional with suffix "-C1")

(5) Manufacturer: PULS GmbH

(6) Address: Elektrastr. 6, 81925 München, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this Certificate of Conformity and the documents therein referred to.

(8) Bureau Veritas Consumer Products Services Germany GmbH certifies based on a voluntary assessment that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive 2014/34/EU. The examination and test results are recorded in the confidential documentation under the reference number 10TH0536.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013

EN 60079-15:2010

EN 60079-7:2015

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This Certificate of Conformity relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment. Those requirements are not covered by this certificate.

(12) The marking of the equipment shall include the following:

 II 3G Ex ec IIC T4 Gc  II 3G Ex ec nC IIC T4 Gc



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(13)

Annexe 1

(14) **Certificate of Conformity EPS 11 ATEX 1 312 X**

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(15) Description of equipment:

Redundancy modules are used to isolate the output voltages of the individual power supply of a redundant power supply system. To achieve redundancy, one extra power supply must be installed in order to deliver the required current in case one power supply in the system fails. The redundancy modules have two input channels and one output and utilize diodes or MOSFET's to isolate the two inputs. They can be used to build 1+1 and N+1 redundant systems.

Revision 1: Evaluation according to new edition of standards (EN 60079-0:2009, EN 60079-15:2010)

Revision 2: Evaluation according to new edition of standards (EN 60079-0:2012, EN 60079-15:2010). Additional models YR40.242, YR40.245, YR40.482 and YR80.242 added. Change of input voltage rating of models YR40.241 and YR80.241. Optional suffix "-C1" stands for coating of the printed circuit board; no safety relevance.

Revision 3: Minor product modification and additional standard EN 60079-0/A11:2013

Revision 4: YR2.DIODE and YRM2.DIODE: lower ambient temperature changed from -25 °C to -40°C; upper ambient temperature range extended to 70 °C for all models

Revision 5: new models added (YR20.242, YR20.246 and PIRD20.241); changed type of protection from "nA" to "ec"; manufacturer's address changed from "Arabellastr. 15" to "Elektrastr. 6"

All models (except of YRM2.DIODE, YR20.246): Ex ec IIC T4 Gc

YRM2.DIODE, YR20.246 only: Ex ec nC IIC T4 Gc

Electrical data:

(see Annexe 2)

(16) Reference number: 10TH0536

(17) Schedule of Limitations:

The equipment shall be installed in an enclosure that provides a degree of protection not less than IP 54 in accordance with EN 60079-7 or EN 60079-15:(2010). The equipment shall only be used in an area of not more than pollution degree 2, as defined in EN 60664-1.

Output power de-rating conditions at high ambient temperatures must be considered according to manufacturer's instructions.

(18) Essential health and safety requirements:

Met by standards

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Annexe 2

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<p>MLY02.100 Input 1+2: DC 12-48V ($\pm 25\%$), 5A continuous, 7.5A up to 5s Output: 10A cont., 15A up to 5s (below 60°C) 7.5A cont., 15A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.9V</p> <p>MLY10.241 Input 1+2: DC 12-48V ($\pm 25\%$), 5A continuous, 7.5A up to 5s Output: 10A cont., 15A up to 5s (below 60°C) 7.5A cont., 15A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.9V</p> <p>YR2.DIODE Input 1+2: 1: DC 12-48V ($\pm 25\%$), 10A continuous, 15A up to 5s 2: DC 12-48V ($\pm 25\%$), 10A continuous, 15A up to 5s Output: 20A continuous, 30A up to 5s (below 60°C) 15A continuous, 30A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.78V</p> <p>YRM2.DIODE Input 1+2: 1: DC 24-48V ($\pm 25\%$), 10A continuous, 15A up to 5s 2: DC 24-48V ($\pm 25\%$), 10A continuous, 15A up to 5s Output: 20A continuous, 30A up to 5s (below 60°C) 15A continuous, 30A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.78V</p>	<p>YR40.241 Input 1+2: 1: DC 12-28V ($\pm 30\%$), 20A continuous, 32.5A up to 5s 2: DC 12-28V ($\pm 30\%$), 20A continuous, 32.5A up to 5s Output: 40A continuous, 65A up to 5s (below 70°C) Input to output voltage loss: typ. 0.072V</p> <p>YR40.242 Input 1+2: 1: DC 12-28V ($\pm 30\%$), 20A continuous, 32.5A up to 5s 2: DC 12-28V ($\pm 30\%$), 20A continuous, 32.5A up to 5s Output: 40A continuous, 65A up to 5s (below 60°C) 30A continuous, 65A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.072V</p> <p>YR80.241 Input 1+2: 1: DC 12-28V ($\pm 30\%$), 40A continuous, 65A up to 5s 2: DC 12-28V ($\pm 30\%$), 40A continuous, 65A up to 5s Output: 80A continuous, 130A up to 5s (below 70°C) Input to output voltage loss: typ. 0.049V</p> <p>YR80.242 Input 1+2: 1: DC 12-28V ($\pm 30\%$), 40A continuous, 65A up to 5s 2: DC 12-28V ($\pm 30\%$), 40A continuous, 65A up to 5s Output: 80A continuous, 130A up to 5s (below 60°C) 60A continuous, 130A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.065V</p>
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Annexe 2

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<p>YR40.245 Input: DC 12-28V ($\pm 30\%$), 40A continuous, 65A up to 5s Output: 40A continuous, 65A up to 5s (below 60°C) 30A continuous, 65A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.15V</p> <p>YR40.482 Input 1+2: 1: DC 24-56V ($\pm 15\%$), 20A continuous, 32.5A up to 5s 2: DC 24-56V ($\pm 15\%$), 20A continuous, 32.5A up to 5s Output: 40A continuous, 65A up to 5s (below 60°C) 30A continuous, 65A up to 5s (at 70°C) Derate linearly between +60°C and +70°C Input to output voltage loss: typ. 0.06V</p> <p>YR20.242 Input 1+2 1: DC 12-28V ($\pm 30\%$), 20A continuous, 32,5A up to 5s 2: DC 12-28V ($\pm 30\%$), 20A continuous, 32,5A up to 5s Output: 24A continuous, 32,5A up to 5s (below 45°C) 20A continuous, 32,5A up to 5s (below 70°C) Derate linearly between +45°C and +70°C Input to output voltage loss: typ. 0,06V</p>	<p>YR20.246 Input 1+2 1: DC 24-28V ($\pm 25\%$), 12A continuous, 17A up to 5s 2: DC 24-28V ($\pm 25\%$), 12A continuous, 17A up to 5s Output: 24A continuous, 32,5A up to 5s (below 45°C) 20A continuous, 32,5A up to 5s (below 70°C) Derate linearly between +45°C and +70°C Input to output voltage loss: typ. 0,06V</p> <p>PIRD20.241 Input 1+2 1: DC 12-28V ($\pm 25\%$), 10A continuous, 16A up to 5s 2: DC 12-28V ($\pm 25\%$), 10A continuous, 16A up to 5s Output: 20A continuous, 32A up to 5s (below 55°C) 12,5A continuous, 32A up to 5s (below 70°C) Derate linearly between +55°C and +70°C Input to output voltage loss: typ. 0,56V</p>
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Holger Schaffner

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