

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)

maxGUARD

Issued to

Weidmüller Interface GmbH & Co. KG
Detmold, Germany

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location class:

Temperature B + D

Humidity B

Vibration A

EMC B

Enclosure A

Issued at **Hamburg** on **2017-11-13**

This Certificate is valid until **2022-10-10**.

for **DNV GL**

DNV GL local station: **Magdeburg**

Approval Engineer: **Dariusz Lesniewski**

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Joannis Papanuskas

Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Form code: TA 251

Revision: 2016-12

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Product description

maxGUARD is a modular system designed to distribute customized 24 V control voltages. It consists of electronic load monitors, potential distribution terminals, and feed-in, control and alarm modules.

General technical data

Rated input voltage	24V DC
Rated current of feed-in module	40A
Number of bus participants	max. 25 (incl. control or active feed-in module)
Connection type (all line connections)	PUSH IN
PCB's	Coated

Feed – In Modules

Part no.	Part name		HVN
2082540000	AMG FIM-C EX	Feed-in module, 24V DC	1.0.x
2082530000	AMG FIM-0 EX	Feed-in module, 24V DC	-

Electronic Load Monitoring Modules

Part no.	Part name		HVN
2082000000	AMG ELM-6 EX	6A, 24V DC	1.1.x
2082010000	AMG ELM-12 EX	12A, 24V DC	1.1.x
2082440000	AMG ELM-6D CO	6A, 24V DC	1.1.x
2082470000	AMG ELM-10D CO	10A, 24V DC	1.1.x
2082040000	AMG ELM-1F EX	1A, 24V DC	1.1.x
2082050000	AMG ELM-2F EX	2A, 24V DC	1.1.x
2082060000	AMG ELM-4F EX	4A, 24V DC	1.1.x
2082310000	AMG ELM-6F EX	6A, 24V DC	1.1.x
2082320000	AMG ELM-8F EX	8A, 24V DC	1.1.x
2082430000	AMG ELM-10F EX	10A, 24V DC	1.1.x

Control & Monitoring Modules

Part no.	Part name		HVN
2083360000	AMG CM EX	Control module, 24V DC	1.0.x
2082770000	AMG AM CO	Alarm module, 24V DC	1.0.x

Potential distributor

Part no.	Part name		Drawing no.	HVN
2495070000	AMG PD EX	Potential distributor	62448 2	-
2495040000	AMG MD EX	Potential distributor	62449 2	-
2495090000	AMG OD EX	Potential distributor	62447 2	-
2495100000	AMG DIS EX	Potential distributor	62446 2	-
2495080000	AMG XMD EX	Potential distributor	62450 3	-

Accessories

Part no.	Part name		Drawing no.	HVN
2495380000	AMG EP	Fastening element	64416 0	-
2123000000	AMG PP	Separation plate	62451 1	-
2500760000	AMG EP KIT	Fastening element + End bracket	-	-
1479000000	WEW 35/2 V0 GF SW	End bracket	15292 13	-
1528090000	ZQV 4N/10	Cross-connector, No. of poles: 10	58452 1	-
1528230000	ZQV 4N/10 BL	Cross-connector, No. of poles: 10	58452 1	-
2460740000	ZQV 4N/10 RD	Cross-connector, No. of poles: 10	58452 1	-
1527930000	ZQV 4N/2	Cross-connector, No. of poles: 2	58452 1	-
1528040000	ZQV 4N/2 BL	Cross-connector, No. of poles: 2	58452 1	-
2460450000	ZQV 4N/2 RD	Cross-connector, No. of poles: 2	58452 1	-

1527940000	ZQV 4N/3	Cross-connector, No. of poles: 3	58452 1	-
1528080000	ZQV 4N/3 BL	Cross-connector, No. of poles: 3	58452 1	-
2460810000	ZQV 4N/3 RD	Cross-connector, No. of poles: 3	58452 1	-
1527970000	ZQV 4N/4	Cross-connector, No. of poles: 4	58452 1	-
1528120000	ZQV 4N/4 BL	Cross-connector, No. of poles: 4	58452 1	-
2460800000	ZQV 4N/4 RD	Cross-connector, No. of poles: 4	58452 1	-
1527980000	ZQV 4N/5	Cross-connector, No. of poles: 5	58452 1	-
1528140000	ZQV 4N/5 BL	Cross-connector, No. of poles: 5	58452 1	-
2460790000	ZQV 4N/5 RD	Cross-connector, No. of poles: 5	58452 1	-
1528130000	ZQV 4N/50	Cross-connector, No. of poles: 50	63074 2	-
1528240000	ZQV 4N/50 BL	Cross-connector, No. of poles: 50	63074 2	-
2426730000	ZQV 4N/50RD	Cross-connector, No. of poles: 50	63074 2	-
1527990000	ZQV 4N/6	Cross-connector, No. of poles: 6	58452 1	-
1528170000	ZQV 4N/6 BL	Cross-connector, No. of poles: 6	58452 1	-
2460780000	ZQV 4N/6 RD	Cross-connector, No. of poles: 6	58452 1	-
1528020000	ZQV 4N/7	Cross-connector, No. of poles: 7	58452 1	-
1528180000	ZQV 4N/7 BL	Cross-connector, No. of poles: 7	58452 1	-
2460770000	ZQV 4N/7 RD	Cross-connector, No. of poles: 7	58452 1	-
1528030000	ZQV 4N/8	Cross-connector, No. of poles: 8	58452 1	-
1528190000	ZQV 4N/8 BL	Cross-connector, No. of poles: 8	58452 1	-
2460760000	ZQV 4N/8 RD	Cross-connector, No. of poles: 8	58452 1	-
1528070000	ZQV 4N/9	Cross-connector, No. of poles: 9	58452 1	-
1528220000	ZQV 4N/9 BL	Cross-connector, No. of poles: 9	58452 1	-
2460750000	ZQV 4N/9 RD	Cross-connector, No. of poles: 9	58452 1	-

Application/Limitation

The Type Approval covers hardware listed under Product description.

When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL RU SHIP Pt.4 Ch.9 Sec. 1.

The installation instructions are to be observed.

The system must be operated with 24 V DC (18...30 V DC) safety extra-low voltage (SELV) or protective extra-low voltage (PELV).

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-Certificates issued by a notified/recognized Certification Body.

	Safe Distance to the	Reduced Safe Distance to the
Standard-Magnetic-Compass	1.60m	1.00m
Steering-Magnetic-Compass	1.00m	0.60m

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNVGL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2016.

Applicable tests according to DIN EN 60945:2015-11:

Salt mist test: Not tested - MaxGuard should be installed in a suitable enclosure (electrical cabinet, panel, console) protected against salt mist.

Acoustic Noise and Signal test: Not tested - MaxGuard modules have no acoustic signals and have no audible components.

Marking of product

The products to be marked with:

- manufacturer name
- part name / part no.
- serial no.
- HVN no.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE