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Client: Saia Burgess Controls AG, Bahnhofstr. 18, CH 3280 Murten

Test item: Three-phase current meter for transformer measurement

Identification: AWD35D5W10MC3AOO **Serial No**.: AWD35D5W10ND3AOO

Receipt No: 83417 **Date of receipt**: 14/09/2009

Testing location: TÜV-Rheinland Product Safety GmbH, Moosacher Str. 56b, 80809 Munich

Test specification: Sections of the standard as described in the risk assessment section

DIN EN 62052-11 AC electricity meter – General requirements, tests and test conditions – Part 11: Measuring devices

Test result: The examined requirements of the product standard DIN EN 62052, harmonised under the Low Voltage Directive 2006/95/EC, are fulfilled.

With professional installation as well as the application of sealed cover and with appropriate use, the 3-phase current meter and the wiring of the inputs L1, L2, L3 and N do not pose any danger of electric shock

Testing laboratory: TÜV-Rheinland Product Safety GmbH, Am Grauen Stein, Cologne

Tested by:			**Reviewed by**:		
04/11/2009	Werner Varro	*((Signed))*	04/11/2009	René Hüsser	*((Signed))*
Date	Name/Position	Signature	Date	Name/Position	Signature

Other aspects:

This test report is an evaluation of the three-phase current meter in terms of electrical danger taking into account the manufacturer's specifications for a professional installation by trained personnel. Only the sections relating to air and creepage distances in the closed device, the measures for protection against accidental contact by covering and the manufacturer's specifications were evaluated. This test report does not substitute a complete test according to the above-mentioned test specification.

Abbreviations: *P(ass) = passed*
F(ail) = failed
N/A = not applicable
N/T = not tested

Product description

The three-phase current meter of type AWD3 is intended for precise energy management and for the individual accounting of the energy consumption in facilities like public as well as private buildings and industrial plants.

It is intended for displaying the overall consumption and the partial consumption of electrical loads, the instantaneous power per phase and/or all phases, the current voltage per phase as well as error statuses like missing phase or faulty current direction.

In the development of the AWD3, the following product standards were considered according to the manufacturer's documentation.

DIN EN 50740-1,
DIN EN 50740-3.

These standards define requirements for the function, precision, electromagnetic compatibility as well as electrical safety of energy meters. They are listed under the EMC Directive and the Measuring Instruments Directive, which means there is no presumption of conformity for the electrical safety.

The fulfilment of requirements was reviewed by an external testing agency (see section Documents for Evaluation) and documented in the corresponding test report.

Photos

Image 1: Three-phase current meter

Image 2: Unit label

Image 3: Label on the package

Risk assessment

To estimate potential risks concerning electrical safety, the following risk assessment was conducted. It is based on an evaluation of the three-phase current meter according to the product standard DIN EN 62052-11 and a comparison with the results of the test report according to DIN EN 50740-1. As the essential requirements of both standards are identical, the fulfilment of one standard infers the fulfilment of the requirements of the other.

DIN EN 62052-11 Alternating current meter;
General requirements, tests and test conditions Part 11: Measuring devices

Clause	Requirement	Comment	Verdict
5.4	**Connecting terminals, blocks and grounding terminal**		P
	Arrangement and insulation properties of connecting terminals and terminal block/s	Identical with DIN EN 50740 Clause 5.4	P
	Testing of material (ISO 75-2) at 135°C and a pressure of 1.8 Mpa.	Identical with DIN EN 50740 Clause 5.4	P
	Insertion openings	Identical with DIN EN 50740 Clause 5.4	P
	Mounting type of the conductor	Identical with DIN EN 50740 Clause 5.4	P
	Screw connections that transmits contact force, and screws,	Identical with DIN EN 50740 Clause 5.4	P
	Electrical connections via insulation materials	Identical with DIN EN 50740 Clause 5.4	P
	Current path matches the voltage circuit	Identical with DIN EN 50740 Clause 5.4	P
	Connecting terminals with different potentials	Identical with DIN EN 50740 Clause 5.4	P
	Protection by insulating spacers	Identical with DIN EN 50740	P
5.5	**Terminal cover**		P
	Grounding terminal	Identical with DIN EN 50740 Clause 5.5	NA
	Separated terminal cover can be sealed independent of the housing cap of the meter	Identical with DIN EN 50740 Clause 5.5	P
	Terminal cover covers connecting terminals, fastening screws, feed line and their insulation	Identical with DIN EN 50740 Clause 5.5	P
	Switch panel mounting: No access to the connecting terminals without breaking the seal/s of the terminal cover/s.	See installation instructions of the manufacturer	P
5.6	**Air and creepage distances**		P
	The air and creepage gaps between connecting terminals of circuits with a nominal voltage above 40 V and	Identical with DIN EN 50740 Clause 5.6	P
	Earthing of the connecting terminals of additional circuits with a nominal voltage of <= 40 V	Identical with DIN EN 50740 Clause 5.6	P
	Air and creepage gaps between connecting terminals of circuits with a nominal voltage > 40 V	Identical with DIN EN 50740 Clause 5.6	P
	Air gap between a metallic terminal cover and the top edge of the clamping screws	Identical with DIN EN 50740 Clause 5.6	P

Clause	Requirement	Comment	Verdict
5.7	**Meter in insulation material housing of protection class II**		P
	Meter housing of protection class II	Identical with DIN EN 50740 Clause 5.7	P
	Terminal cover fully made of insulation material	Identical with DIN EN 50740 Clause 5.7	P
	Small conductive parts	Identical with DIN EN 50740 Clause 5.7	P
	Paint, enamel, simple paper, cotton, oxide film and metal parts, self-adhesive film and sealing compounds or similar unsafe materials	Identical with DIN EN 50740 Clause 5.7	NA
	Terminal block and the terminal cover with reinforced insulation	Identical with DIN EN 50740 Clause 5.7	P
	Professional installation as well as the sealed cover and appropriate use	See installation instructions and catalogue specifications	P

Result of assessment

The examined requirements of the product standard DIN EN 62052, harmonised under the Low Voltage Directive 2006/95/EC, are fulfilled.
With professional installation as well as the use of sealed cover and appropriate use, the three-phase current meter and the connecting terminals of the outputs L1, L2, L3 and N do not pose any danger from electric shock.
A PE lead connection to the three-phase current meter is not required for safety reasons, as the protective housing is completely made of plastic.

Only suitable transformers (nominal voltage, nominal current; see application example for more details) with protected terminals are allowed to be used with the three-phase current meter, e.g. as per TAB2007, Appendix 5. To achieve the required protection (see manufacturer's instructions) particularly in case of subsequent replacement of existing systems, protective measures have to be taken later if necessary.

Based on documents

- Test report of the Federal Office of Metrology (METAS), 213-00995, dated 21/01/2009
- Test report (Quinel) QNL E1235-05-8 dated 04/11/2008
- Datasheet/Installation instructions included in the manufacturer's catalogue "Saia CC 2009/2010"
- Declaration of conformity
- Package information sheet AWD3

Appendix A1: Information for the manufacturer

END OF TEST REPORT

TÜV Rheinland
Product Safety GmbH
Am Grauen Stein D – 51105 Cologne

04/11/2009

Appendix A1: Information for the manufacturer

Test Report No. : 21143314-02	Page 1 of 1
Client : Saia Burgess Controls AG, Bahnhofstr. 18, CH 3280	
Test item : Three-phase current meter for transformer measurements	
Identification : Type AWD3	Serial No. ...

1. The statements in the declaration of conformity should be verified in terms of the EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC.
2. A test according to EN 62052 should be conducted, e.g. as plausibility check to document the compliance of the requirements of the EN 62052.
3. The value of the safety fuses should be stated in the datasheets and in the instructions.
4. The labelling in the circuit diagram – L1, L2, L3, N, PEN – should be correctly assigned to the corresponding leads.
5. The installation instructions should contain the following information:
    a. All works on the device should be conducted after unplugging it from the mains
    b. The sealed cover should be used for protection against electric shock
    c. The information on the protection of the S0 interface according to EN 62053-31 should be included in the datasheet.
6. The points 1-5 are also correspondingly applicable to OEM products.
7. The test report no. 21143314-002 is the basis for the evaluation of the identically constructed three-phase current meter DSZ12WD of the company Eltako, test report no. 21143314-003. **All the information listed (1-6) in the appendix should be correspondingly implemented by the manufacturer Eltako.**