


**SUPPLEMENT 1 TO EC-TYPE EXAMINATION CERTIFICATE**

[4] **Equipment or Protective System:**                    **Resistive Power Supply CT5005AA [XX-YY-Z]**

[12] **The marking of the equipment or protective system shall include the following:**

 **I (M1) [Ex ia] I**  
**II (1G) [Ex ia] IIB -20° C <= Ta <=60° C**

**[13] Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE No**    **Nemko 09ATEX1080X**

[15] **Description of Equipment or Protective System**

This supplement is issued to covers the following changes:

1. The introduction of a top/bottom board that provides galvanic isolation between the supply and the intrinsically safe output circuits.
2. A reduction in maximum supply voltage from  $U_m = 60V$  to  $U_m = 46 V$  for types CT5005AA [02-YY-Z] & CT5005AA [04-YY-Z].
3. The addition of capacitors to the energy limiting circuits.
4. The inclusion of Group IIB to the product range.
5. New marking label.

**Type Designations**

CT5005AA [XX-YY-Z]

Where:

- AA –Number from 01 to 99 Specific configuration not affecting certification
- XX - Output Parameters  
01 to 04 8.0 V/1.1 A
- YY –Specific Type  
01 – Flying Leads  
02 – Connections via plugs and sockets
- Z – Apparatus Group  
1 – Group I  
2 – Group I/IIB

[16] **Report No. 133129**

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**Descriptive Documents:**

Name/Title	Drawing No.	Rev/Issue	Date
IS Resistive Power Supply-Mechanical Assy	ExMD500501 Sheets 1 & 2	1.1	2009/05/12
IS Resistive Power Supply with Galvanic Isolation	Ex MD500502 Sheets 1 to 3	1.0	2009/07/08
Device Markings IS Resistive Power Supply	Ex MK500501-s1 Sheet 1	2.0	2009/05/21
Device Markings IS Resistive Power Supply	Ex MK500501-s2 Sheet 2	2.0	2009/05/21
IS Resistive Power Supply with Galvanic Isolation	ExPB500502-05	1.0	2009/05/19
IS Resistive Power Supply with Galvanic Isolation and/or Isolated Communication	ExWD500502-01	1.0	2009/05/12
IS Resistive Power Supply Type 500501	ExSH500501-05 Sheets 1 to 4	1.1	2009/06/17
IS Resistive Power Supply with Galvanic Isolation and/or Isolated Communication	ExSH500502-05	1.0	2009/05/15

**[17] Special Conditions for Safe Use**

The following parameters are to be taken into account in the installation

**Non Hazardous Area Connections**
**1. Input Parameters**

Type CT5005AA[01-YY-2]

Red Cable with respect to Black Cables (earth) or

Non Intrinsically Safe Input Connector pin 1 with respect to pins 2, 3, 4

$$U_m = 60 \text{ V}$$

Types CT5005AA[02-YY-Z] & CT5005AA[03-YY-Z] & CT5005AA[04-YY-Z] Red Cable with respect to Black Cables (earth) or

Non Intrinsically Safe Input Connector pin 1 with respect to pins 2, 3, 4

$$U_m = 46 \text{ V}$$

**2. Output Hazardous Area Connections Parameters Brown Cable with Respect to Blue Cable OR Intrinsically Safe Output**

Model	U <sub>o</sub> (V)	I <sub>o</sub> (A)	P <sub>o</sub> (W)	C <sub>i</sub> (μF)	Li (mH)
CT5005AA[01-YY-1]	8.9	2.8	12.5	1.1	Negligible
CT5005AA[01-YY-2]	8.9	2.8	12.5	3.3	Negligible
CT5005AA[02-YY-2]	8.9	2.8	12.5	3.3	Negligible
CT5005AA[03-YY-2]	8.9	2.8	12.5	14.3	Negligible
CT5005AA[04-YY-2]	8.9	2.8	12.5	14.3	Negligible

The capacitance and either the inductance or the inductance to resistance (L/R) ratio of the hazardous area load connected to the Brown cable with respect to the Blue Cable or the hazardous area connections must not exceed the following values;

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Model	Group I			Group IIA			Group IIB		
	Co ( $\mu$ F)	Lo ( $\mu$ H)	L/R ( $\mu$ H/Q)	Co ( $\mu$ F)	Lo ( $\mu$ H)	L/R ( $\mu$ H/Q)	Co ( $\mu$ F)	Lo ( $\mu$ H)	L/R ( $\mu$ H/Q)
CT5005AA[01-YY-1]	283.9	60	152						
CT5005AA[01-YY-2]	281.7	60	152	586	36	92	39.7	18	46
CT5005AA[02-YY-2]	281.7	60	152	586	36	92	39.7	18	46
CT5005AA[03-YY-2]	270.7	60	152	576	36	†	28.7	18	†
CT5005AA[04-YY-2]	270.7	60	152	576	36	†	28.7	18	†

† = Ref IEC 60079-11 clause 6.2.3 no L/R specified as  $C_i$  exceed 1% of  $C_o$

The above load parameters apply where;

- a. The external circuit contains no combined lumped inductance ( $L_i$ ) or lumped capacitance ( $C_i$ ) greater than 1% of the above values. OR
  - b. The external circuit contains either only lumped inductance ( $L_i$ ) or lumped capacitance ( $C_i$ ) in combination with a cable. OR
  - c. The inductance and capacitance are distributed as in a cable.  
In all other situations e.g. the external circuit contains combined lumped inductance and capacitance, up to 50% of each of the inductance and capacitance values are allowed.
3. The equipment must be installed within a suitable enclosure offering a degree of protection not less than IP20.
  4. In earth reference systems the non-hazardous area Black Cables (3 off) of the CT5005AA[01-01- Z] must be connected to the main intrinsically safe system earth in an earth reference system or infallibly connected to the secondary circuit 0 V node in a galvanically isolated power supply system.
  5. It is a condition of manufacture that each of the transformers is subjected to a routine type test of not less than 1,500 Vrms between windings and not less than 500 Vrms between windings and core for a period not less than 60 seconds. Alternatively the tests may be not less than 1,800 Vrms between windings and 600 Vrms between windings and core for a period not less than 1 second.

**[18] Essential Health and Safety Requirements**

See item 9

**Oslo 2012-02-10**

*Asle Kaastad*

**Asle Kaastad  
Certification Manager, Ex-products**

*Revised Issue 1 dated 2009-08-24. Correction of the descriptive documents.*

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