



# Certificate of Compliance

**Certificate:** 2271396

**Master Contract:** 246454

**Project:** 2607492

**Date Issued:** May 7, 2013

**Issued to:** KEM Kueppers Elektromechanik GmbH

5 Liebigstrasse  
Karlsfeld, Bayern 85757  
Germany  
Attention: Kay Stegmann

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



*Richard Dibler Jr*

**Issued by:** Richard Dibler Jr

## **PRODUCTS**

**CLASS 2258 04** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

**CLASS 2258 84** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - - For Hazardous Locations - Certified to US Standards

**Class I, Division 1, Groups A, B, C, D:**

**Ex ia IIC T4:**

**Class 1, Zone 0 AEx ia IIC T4:**

Pulse Amplifier Models Vab-cd-e-Ex and PU\*\*Ex. Input rated 12-24 Vdc, 25 mA max. Intrinsically safe with power supply (pins 1 and 3 for c = H and S; A and B for c = U) entity parameters:  $U_i = 30$  Vdc,  $I_i = 120$  mA,  $P_i = 850$  mW,  $C_i = 8$  nF and  $L_i = 0$  and Signal output (pins 2 and 3 for c = S; pins 3 and 4 for c = H; pins B and C for c = U):  $U_i = 30$  Vdc,  $I_i = 24.6$  mA,  $P_i = 185$  mW,  $C_i = 8$  nF and  $L_i = 0$ . Ambient -40°C to 60°C. Where:

a = input type = VI or VT

b = mechanical design = EF, EK, EL, ER, ES, EC, EM

c = electrical connector = H, S, U



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d = output mode = P,O

e = custom features = L

\*\* = any two numbers denoting length and position of pickup tip

Flow Meter Amplifier Models aaE02-b-c. Input rated 12-24 Vdc, 25 mA max. Intrinsically safe with power supply entity parameters (pins 1 and 3 for c = A, P, U; A and B for c = D, E): entity parameters  $U_o = 30$  Vdc,  $I_o = 120$  mA,  $P_o = 850$  mW,  $C_o = 8$  nF and  $L_o = 0$  and Signal output (pins 2 and 3 for c = A; pins 3 and 4 for c = P, U; pins B and C for c = D, E):  $V_{max} = 30$  Vdc,  $I_{max} = 24.6$  mA,  $P_i = 185$  mW,  $C_i = 8$  nF and  $L_i = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Flow Meter Amplifier Model aaE02-b-N or aaE02-b-M (NAMUR). Input rated 5-10.5 Vdc, 5 mA max. Intrinsically safe with power supply & signal out entity parameters (pins 1 and 2):  $V_{max} = 10.5$  Vdc,  $I_{max} = 16$  mA,  $P_{max} = 42$  mW,  $C_{max} = 8$  nF and  $L_{max} = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

aa = input type = VI - inductive type pickup OR VT - carrier frequency type pickup

b = pickup tip = K - M14 short / L - M14 long / R - M14 short with a narrow tip / S - M14 long with a narrow tip / U - UNC thread OR X - other threads and lengths

c = output type = A - Connector M16, push-pull / D = connector Amphenol (MIL), push-pull, E = connector Amphenol (MIL), open collector, P = connector M12, push-pull, N = connector M12, NAMUR,

U = connector M12, push-pull and NAMUR

Compact Turbine Flow Meter Models HM-abc/TC-R/S-01-PP\_500-M12-Ex &

Gear Flow Meter Models ZHM-efghi.kl.m. Input rated 12-24 Vdc, 25 mA max. Intrinsically safe with power supply entity parameters (pins 1 and 3):  $U_i = 30$  Vdc,  $I_i = 120$  mA,  $P_i = 850$  mW,  $C_i = 8$  nF and  $L_i = 0$  and Signal output (pins 3 and 4):  $V_{max} = 30$  Vdc,  $I_{max} = 24.6$  mA,  $P_i = 185$  mW,  $C_i = 8$  nF and  $L_i = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

abc = up to three alphanumeric characters that are not relevant to CSA certification

efghi.kl.m = alphanumeric characters that are not relevant to CSA certification



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Pulse Amplifier Models VTE03-aa-b-c-Ex and VIE03-aa-b-c-Ex. Input rated 12-24 Vdc, 25 mA max. Intrinsically safe with power supply (pins 1 and 3 or A and B, depending on connector version) entity parameters:  $U_i = 30$  Vdc,  $I_i = 120$  mA,  $P_i = 850$  mW,  $C_i = 8$  nF and  $L_i = 0$  and Signal output (pins 2 and 3 or pins 4 and 3 or pins B and C, depending on connector version):  $U_i = 30$  Vdc,  $I_i = 24.6$  mA,  $P_i = 185$  mW,  $C_i = 8$  nF and  $L_i = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

aa = form and position of pickup tip = 01 ... 99

b = connector type, pinning and output mode = A ... Z, except "N" or "M"

c = options = A... Z

Pulse Amplifier Models VTE03-aa-N-c-Ex, VTE03-aa-M-c-Ex, VIE03-aa-N-c-Ex, and VIE03-aa-M-c-Ex (NAMUR). Input rated 5-10.5 Vdc, 5 mA max. Intrinsically safe with power supply & signal out entity parameters (pins 1 and 2), (N) or 1 and 4 (M):  $V_{\text{max}} = 10.5$  Vdc,  $I_{\text{max}} = 16$  mA,  $P_{\text{max}} = 42$  mW,  $C_{\text{max}} = 8$  nF and  $L_{\text{max}} = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

aa = form and position of pickup tip = 01 ... 99

c = options = A... Z

Pulse Amplifier Models VTE04-aa-b-c-Ex and VIE04-aa-b-c-Ex. Input rated 12-24 Vdc, 25 mA max. Intrinsically safe with power supply (pins 1 and 3 or A and B, depending on connector version) entity parameters:  $U_i = 30$  Vdc,  $I_i = 120$  mA,  $P_i = 850$  mW,  $C_i = 8$  nF and  $L_i = 0$  and Signal output (pins 2 and 3 or pins 4 and 3 or pins B and C, depending on connector version):  $U_i = 30$  Vdc,  $I_i = 24.6$  mA,  $P_i = 185$  mW,  $C_i = 8$  nF and  $L_i = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

aa = form and position of pickup tip = 01 ... 99

b = connector type, pinning and output mode = A ... Z, Except "N" or "M"

c = options = A... Z

Pulse Amplifier Models VTE04-aa-N-c-Ex, VTE04-aa-M-c-Ex, VIE04-aa-N-c-Ex, and VIE04-aa-M-c-Ex (NAMUR). Input rated 5-10.5 Vdc, 5 mA max. Intrinsically safe with power supply & signal out entity



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parameters (pins 1 and 2), (N) or 1 and 4 (M):  $V_{max} = 10.5V_{dc}$ ,  $I_{max} = 16\text{ mA}$ ,  $P_{max} = 42\text{ mW}$ ,  $C_{max} = 8\text{ nF}$  and  $L_{max} = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

aa = form and position of pickup tip = 01 ... 99

c = options = A... Z

Pulse Amplifier Models A13256-a1. Input rated 12-24 Vdc, 25 mA max. Intrinsically safe with power supply (pins 5 and 1) entity parameters:  $U_i = 30\text{ Vdc}$ ,  $I_i = 120\text{ mA}$ ,  $P_i = 850\text{ mW}$ ,  $C_i = 8\text{ nF}$  and  $L_i = 0$  and Signal output (pins 4 and 1):  $U_i = 30\text{ Vdc}$ ,  $I_i = 24.6\text{ mA}$ ,  $P_i = 185\text{ mW}$ ,  $C_i = 8\text{ nF}$  and  $L_i = 0$ . Ambient  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ .

Where:

a = form and position of pickup tip = 0 ... 9

**APPLICABLE REQUIREMENTS**

CAN/CSA-C22.2 No. 60079-0:07	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
CAN/CSA-E60079-11:02	Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic Safety "i"
CAN/CSA-C22.2 No. 60079-0:11	Explosive atmospheres — Part 0: Equipment — General requirements
CAN/CSA-C22.2 No. 60079-11:11	Explosive atmospheres — Part 11: Equipment protection by intrinsic safety "i"
ANSI/UL 60079-0:09	Explosive atmospheres – Part 0: Equipment – General requirements
ANSI/UL 60079-11:09	Explosive Atmospheres - Part 11: Equipment Protection by Intrinsic Safety "i"
CAN/CSA C22.2 No. 61010.1-04	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements
ANSI/UL No. 61010.1-04	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements
CAN/CSA C22.2 No. 157-92	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations.
ANSI/UL 913	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations



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## **MARKINGS**

The following markings are laser engraved onto the housing (enclosure) or laser engraved onto a metal plate riveted to the housing (enclosure). Refer to the following engraving drawings (Gravurzeichnung):

- Gravur\_VTEC\_Top and Gravur\_VTEC\_CSA for representative markings for machined housing models.
- Gravur\_PU23\_Top\* and Gravur\_VTEF\_CSA for representative markings for die cast housing models. \*This drawing shows the PU23 (Wagner) markings. "Wagner" changes to "KEM" and the model changes for the VTEF models.
- Manufacturer's name "KEM Kueppers Elektromechanik GmbH", "KEM" or CSA Master Contract Number "246454", adjacent to the CSA Mark in lieu of Manufacturer's name.
- Model number: as specified in the PRODUCTS section, above.
- Electrical ratings/ Entity Parameters: As specified in the PRODUCTS section, above.
- Ambient temperature rating: as specified in the PRODUCTS section, above (may be abbreviated).
- Manufacturing date in MMY format, or serial number, traceable to month of manufacture.
- The CSA Mark, as shown on page 1 of the Certificate of Conformity.
- Hazardous Location designation: as specified in the PRODUCTS section, above.
- Temperature Code: as specified in the PRODUCTS section, above.
- "Exia" (shall appear on the product)
- "INTRINSICALLY SAFE" (may appear on the control drawing)
- "11.2271396" (Certificate number) adjacent to the CSA Monogram

*Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".*