

(1) EC- TYPE- EXAMINATION CERTIFICATE

(2) Equipment and protective systems intended for use in potentially explosive atmospheres Directive 94/9/EC

(3) EC- Type- Examination Certificate Number

TÜV- Saarland 05 ATEX 0502 X

(4) Equipment: Electronic Sequencing Computer Micon 500 C

(5) Manufacturer: Kraus Industries Ltd.

(6) Address: 25 Paquin Road Winnipeg Manitoba, Canada R2J 3V9

(7) The construction of this equipment and any permissible design thereto are specified in the schedule to this EC- Type- Examination Certificate.

(8) The TÜV- Saarland, notified body No. 0034 in accordance with Article 9 of Council Directive 94/9/EC of 23.04.1994, certifies 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 to the Directive.

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

EN 50014:1997, EN 50018: 2000, EN 50020: 2003

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.

This EC-Type- Examination Certificate relates only to the design and constructed equipment in accordance with Directive 94/9EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

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




II 2G EEx d [Ib] IIA T4

TÜV-Cert
Zertifizierungsstelle für
Produkte des
TÜV SAARLAND



Sulzbach, 21.10.05

Head of Certification department:


Dipl.-Ing. Stefanie Klein

EC- Type- Examination Certificates without signature are not valid. This EC- type- Examination Certificate may be circulated only without alteration. Extracts or alterations require the approval of the TÜV- Saarland.

(13) Schedule

(14) EC- TYPE- EXAMINATION CERTIFICATE
TÜV- Saarland 05 ATEX 0502 X

(15) Description of equipment

The Micon 500 is an electronic counter to install into gas pump stations. CPU wiring board with corresponding current supply and battery back up has been mounted into a flameproof enclosure with intrinsically safety analog and digital ports for displays (2 items), pulser board, temperature sensor and handle switch, preset keyboard respectively.

The cables has been inserted into the enclosure by certificated flameproof "d"- glands and consists of wiring for current supply and series of control connections for among others the pump motor, the solenoid valves and the data communication. These must be connected by a terminal box of increased safety "e" or flameproof enclosure "d".

The supply voltage is galvanically separated from all other circuits. The supply voltage for non intrinsic safety circuits may not exceed 240V AC.

The maximum supply voltages for the Interfaces P8-4, P8-5, P8-6, P16-1, P9-4 may not exceed the values written in installation manual.

Ambient temperature range : $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq 40^{\circ}\text{C}$

Technical Data:

Supply circuit : 220-240 V, 50/60 Hz, 0,25 A, 60 VA

Solenoid valve: P14-1; P14-2; P14-3; P14-4; MT1
 $U_{\text{max}} = 240\text{V AC}$; $I_{\text{max}} = 0,5 \text{ A AC}$

Pump Motor: MT1 MT2
 $U_{\text{max}} = 240\text{V AC}$; $I_{\text{max}} = 6,3 \text{ A AC}$

Interface: P8-1, P8-2, P8-3, P16-2
 $U_{\text{max}} = 30\text{V DC}$

Interface: P9-1, P2-2, P9-3
 $U_{\text{max}} = 24\text{V DC}$

Interface: P15-1, P15-2, P15-3
 $U_{\text{max}} = 240\text{V AC}$

Interface: P9-4, P9-3
 $U_{\text{max}} = 8\text{V DC}$

EC- Type- Examination Certificates without signature are not valid. This EC- type- Examination Certificate may be circulated only without alteration. Extracts or alterations require the approval of the TÜV- Saarland.

Intrinsic safety circuits:

Digital Input EEx ib IIB:

Terminals: P12-1, P12-2, P12-3, P12-4 to P12-5	
U_0	7,9 V
I_0	9,2 mA
P_0	18,1 mW
L_0	700 mH
C_0	120 μ F

The above mentioned values of the outer reactances apply only on condition that the simultaneous appearance of the outer inductance and capacitance does not need to be considered.

In the case of simultaneous appearance of capacitance and inductance in concentrated form the permissible maximum values have to taken from the following table:

L_0 : 0,15mH	C_0 : 10 μ F
L_0 : 5mH	C_0 : 5 μ F

Analog Input EEx ib IIB:

Terminals: P5-1 to P5-4 or P5-3 to P5-6	
U_0	17,6 V
I_0	66,7 mA
P_0	293 mW
L_0	30 mH
C_0	1,9 μ F

The above mentioned values of the outer reactances apply only on condition that the simultaneous appearance of the outer inductance and capacitance does not need to be considered.

In the case of simultaneous appearance of capacitance and inductance in concentrated form the permissible maximum values have to taken from the following table:

L_0 : 0,15mH	C_0 : 1 μ F
L_0 : 5mH	C_0 : 1 μ F

Analog Input EEx ib IIB:

Terminal: P5-2 to P5-10	
U_0	7,9 V
I_0	8,1 mA
P_0	15,9 mW
L_0	700 mH
C_0	120 μ F

The above mentioned values of the outer reactances apply only on condition that the simultaneous appearance of the outer inductance and capacitance does not need to be considered.

In the case of simultaneous appearance of capacitance and inductance in concentrated form the permissible maximum values have to taken from the following table:

L_0 : 0,15mH	C_0 : 10 μ F
L_0 : 5mH	C_0 : 5 μ F

Digital Input IS Handle EEx ib IIB:

Terminal: P3-1 to P3-2	
U_0	7,9 V
I_0	4,6 mA
P_0	9 mW
L_0	1000 mH
C_0	120 μ F

The above mentioned values of the outer reactances apply only on condition that the simultaneous appearance of the outer inductance and capacitance does not need to be considered.

In the case of simultaneous appearance of capacitance and inductance in concentrated form the permissible maximum values have to taken from the following table:

L_0 : 0,15mH	C_0 : 10 μ F
L_0 : 5mH	C_0 : 5 μ F

Schedule EC- TYPE- EXAMINATION CERTIFICATE
TÜV- Saarland 05 ATEX 0502 X



(16) Test report N°:60403A0468

List of test documents

Description	Number	Date
Main board	SK 602 A7	03.06.2005
Display	SK 609 A2	19.02.2005
RS 485 Interface	SK 618 A1	19.03.2005
RS 232 Interface	SK 611 A1	19.02.2005
Gilbarco Interface	SK 615 A1	19.02.2005
M-Net Interface	SK 614 A1	19.02.2005
EPSI Interface	SK 617 A1	19.03.2005
Tokheim Interface	SK 612 A1	19.02.2005
Fuse board	SK 604 A4	26.02.2004
RS 422 Interface	SK 613 A1	19.02.2005
Scheidt & Bachmann Interface	SK 616 A1	19.02.2005
Protocol Spacing Adapter	SK 603 A1	26.02.2005
Preset Keypad	SK 496 A5	04.07.2005
Pulser	SK 497 A3	27.02.2005
Pulser	SK 246 A5	26.02.2005
NAMUR Pulse Interface	SK 608 A1	24.06.2004
Tokheim Gasboy Preset	SK 476 A3	27.02.2005

(17) Special conditions for safe use

The intrinsic safety components must be mounted in a case that meet the requirements of EN 50014 and EN 50020.

The supply cable must be terminated in an approved EEX "e" or "d" terminal box.

(18) Essential Health and Safety Requirements


no additional ones

TÜV-Cert
Zertifizierungsstelle für
Produkte des
TÜV SAARLAND



Sulzbach, 21.10.2005

Head of Certification department:


Dipl.-Ing. Stefanie Klein

EC- Type- Examination Certificates without signature are not valid. This EC- type- Examination Certificate may be circulated only without alteration. Extracts or alterations require the approval of the TÜV- Saarland.