

# IA - CERTIFICATE



## SA Explosion Prevention CC

IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT INCORPORATED IN THE MINE HEALTH AND SAFETY ACT) AND REGULATION 8(2) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT



20 May 2010

Alpret Control Specialists  
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FLORIDA  
1710

IA CERTIFICATE: SAE<sub>x</sub> S/10-154  
475 FIELD COMMUNICATOR

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Expiry Date: 31 May 2011 (Annual Review)

### DESCRIPTION: (According to Certificate No BVS09ATEX E023)

The 475 Field Communicator is a hand-held, battery powered, portable intrinsically safe apparatus and used to interact with microprocessor-based measurement and actuation field devices in a process environment.

The electrical components are fixed in a plastic enclosure (surface resistance =  $10^9 \Omega$ ). For the connection of the intrinsically safe field circuits there are connectors at the top of the enclosure (F for Fieldbus applications and H for HART bus applications). These circuits can be led into areas where Category 1G or 1D equipment is required.

The apparatus is powered by a completely encapsulated battery. For charging of the battery (outside the hazardous area) with a specially designed charger (not part of this examination) there is also a connector at the side of the enclosure.

#### Parameters:

Battery pack				
Nominal voltage		DC	7.2	V
Capacity			1950	mAh

#### Connection F

Voltage	$U_o$	DC	1.9	V
Current	$I_o$		32	$\mu A$

#### For the connection of an intrinsically safe Fieldbus circuit

Voltage	$U_i$	DC	30	V
Current	$I_i$		380	mA
Power	$P_i$		1.3	W
Effective internal capacitance	$C_i$		Negligible	
Effective internal inductance	$L_i$		Negligible	

#### For the connection of an intrinsically safe circuit in accordance with FISCO model

Effective internal capacitance	$C_i$		Negligible	
Effective internal inductance	$L_i$		Negligible	

#### For circuits type of protection Ex ia IIC

Voltage	$U_i$	DC	17.5	V
Current	$I_i$		215	mA
Power	$P_i$		1.9	W

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For circuits type of protection Ex ia IIB

Voltage	$U_i$	DC	17.5	V
Current	$I_i$		380	mA
Power	$P_i$		5.3	W

Connection H

Voltage	$U_o$	DC	1.9	V
Current	$I_o$		32	$\mu$ A

For the connection of an intrinsically safe circuit


Voltage	$U_i$	DC	30	V
Current	$I_i$		200	mA
Power	$P_i$		1	W
Effective internal capacitance	$C_i$		Negligible	
Effective internal inductance	$L_i$		Negligible	

Ambient temperature range  $T_a$  -10°C up to +50°C

**a) 1<sup>st</sup> Supplement to BVS09ATEX E023:**

The Field Communicator can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

**MARKING** (According to Certificate No BVS09ATEX E023):

Manufacturer : EMERSON Process Management Distribution Model : 475 Field Communicator Ex rating :  II 2G (1GD) Ex ia IIC T4 Certificate No : BVS09ATEX E023
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IA No : SAEx S/10-154
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\* In addition to the original marking, the SAEx IA number and the name of the local distributor must be applied on each unit in a visible, legible and indelible manner.

**X - Special conditions of safe use:**

None

**Compliance:** The units as described above and in Certificate No BVS09ATEX E023 is hereby certified "Explosion Protected" II 2G (1GD) Ex ia IIC T4, and is suitable for use in hazardous locations as stated below, as determined during assessments of the DEKRA certificate and in accordance with the relevant requirements of equivalent SANS Standards:

- **SANS (IEC) 60079: "Electrical Apparatus for Explosive Gas Atmospheres"**
  - **Part-0 : 2003 "General Requirements";**
  - **Part-11 : 2007 "Intrinsic Safety 'i'";**
  - **Part-26 : 2004 "Construction, Test and Marking of Electrical Devices Group II, Category 1G**
- **ARP 0108: 2007 "Regulatory Requirements for Explosion Protected Apparatus".**

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As conducted to equivalent standards:

- EN60079-0 : 2006 "General Regulations"
- EN60079-11 : 2007 "Intrinsic Safety 'i'"
- EN60079-26 : 2004 "Equipment Group II Category 1G"

Locations	Zone 0 and 1	Surface
Hazardous Frequency		Continuous/Intermittent as could occur under normal operations
Environment	Group IIC	Propane to Hydrogen
Limiting Temperature	T4	135°C
Ambient Temperature	-10°C to +50°C	

***The use of the apparatus in hazardous locations is subject to the following provision, which shall be adhered to:***

- i) SANS 10086 requirements;
- ii) Any relevant requirements of the MHS Act or the OHS Act;
- iii) Codes of Practice enforced in terms of Regulations 21.17/2 of the Minerals Act, by the Chief Inspector of Mines;
- iv) Any restrictions and conditions enforced by the Chief Inspector of Mines, Principal Inspector (Group I equipment) or Chief Inspector of Factories (Group II equipment); and
- v) Any conditions mentioned in the DEKRA test report.

**Conditions of certification:**

1. This certificate covers all units sold in South Africa from the date of this certificate to 31 May 2011.
2. The apparatus must be additionally marked in a clear, legible, visible and indelible manner with the SAEx IA number as well as the name of the local South African supplier.
3. This certificate of approval only covers the equipment as certified above and does not include any scheduled additions or variations/amendments/new issues to the certificates, made after the above date.
4. The equipment does not need to be retested when used on the conditions and with such restrictions as prescribed in Certificate No BVS09ATEX E023.
5. The DEKRA certification must remain valid.
6. The requirements in the ARP 0108 (or regulations) and SANS 10108 do not change.
7. The Ex quality assurance notification for the equipment remains valid.

  
**WA de Beer, Pr Eng**  
**SPECIALIST ENGINEER**

### SA EXPLOSION PREVENTION

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