



(Pty) Ltd
Reg No: 1999/027771/07

APPROVED INSPECTION AUTHORITY
IN TERMS OF:

R21.17.2 OF THE MINERALS ACT (INCORPORATED IN THE MINE HEALTH AND SAFETY ACT, NO 29 OF 1996); AND
EMR 8(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO 85 OF 1993

SA EX INSTRUMENTS
PO BOX 67736
BRYANSTON
2021

Issued: **19 Aug 2009**
*Expire: **19 Aug 2010**
Page 1 of 3
Revision 5.1

Type: Personal Digital Assistant
Manufacturer: eCom Instruments GmbH
Equipment: i.roc 6**-Ex
Serial No: All serial numbers of equipment covered by a valid report, or accepted product certification mark.

Supplied by
SA EX INSTRUMENTS

Identified by Inspection Authority number
M-XPL/06893

And as described in the Explolabs file number XPL/8627/06893 Rev 5.1 is hereby certified "Explosion Protected Ex ia I 150°C(-20°C ≤ T_A ≤ 50°C)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

IEC/SANS 60079-0:2006 "Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements"
IEC/SANS 60079-11:2007, "Electrical Apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i""

Locations	Gas and Dust: Underground
Frequency	Continuous as could occur under normal operation
Environment	Group I Methane (firedamp) plus coal dust
Limiting Temp.	150°C -20°C ≤ T _A ≤ 50°C

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 8(1) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

- i) SANS 10086-1;-2;-3 and IEC/SANS 61241-14 requirements as applicable;
 - ii) Any conditions mentioned in the above report;
 - iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
 - iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
- i) * - New equipment may only be presented for sale between the "Issued" and "Expire" dates.

1. GENERAL

The Personal Digital Assistant had previously been certified by IBExU Authority as Ex ia I 150°C (Certificate No. IBEXU04ATEX1200 up to supplement 6). The marking of the Personal Digital Assistant was assessed for compliance with the requirements of clause 1 above and against the certificate submitted. The authenticity of the certificate was assessed as well.

The certificate was found to comply with the requirements of SANS 10108.

2. SAFETY PARAMETERS

- A HART modem has been added as an optional interface. Measurement on intrinsically safe HART circuit under M1 conditions must comply with the following parameters:

HART modem Ex ia I $U_o = 1.4V, I_o = 0 \text{ mA}, P_o = 0W$
 Maximum permissible external capacitance and inductance
 $C_o = 1000\mu F, L_o = 1000mH$ or
 When connecting to certified intrinsic safe circuits
 $U_i = 30V, I_i = 333mA, P_i = 1W, L_i = C_i = 0$
 Measurement inputs for service purposes in a safe area $U_m = 30Vdc, I = 333mA$

- A BIDI interface has been added as an optional device head.

Supply current circuit $U_i = 13.2 V$
 JP1 (+); JP4 (GND) $I_i = 2 A$
 $C_i, L_i = \text{negligible}$

BIDI interface $U_o = 13.2 V$
 JP2 (TX); JP3 (RX); JP4 (GND) $I_o = 137 \text{ mA}$ Linear characteristic curve

	A	B
C_o	4.7 μF	12 μF
L_o	2 mH	0.1 mH

Circuit combinations with lumped external capacities and inductance.

3. SPECIAL CONDITIONS OF USE (X)

No special conditions of use are stated BUT the following Operating Instructions must be applied:

- The unit must not be opened within the potentially explosive area.
- Charging must be performed outside the potentially explosive area using the designated charger type LGx10.

4. MARKING

The following markings shall be added to the unit in a legible and durable manner:

Manufacturer: eCom Instruments GmbH

Model: i.roc 6**-Ex

Ex ia I 150°C (-20°C ≤ T_A ≤ 50°C)

IBEXU04ATEX1200

The following marking must be added to the units: M-XPL/06893



**WA Herholdt
TESTING OFFICER**