


[1] EC TYPE-EXAMINATION CERTIFICATE

[2] Equipment or Protected System Intended for use
in Potentially explosive atmospheres
Directive 94/9/EC

- [3] EC-Type Examination Certificate Number: **Nemko 07ATEX1129X**
- [4] Equipment or Protective System: **Communication & Signalling System type
PSACS1-A, PSACS1-B**
- [5] Applicant / Manufacture: **Austdac Pty Ltd**
- [6] Address: **Unit 1/4 Packard Avenue
Castle Hill NSW 2154
Australia**
- [7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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.
- The examination and test results are recorded in confidential report no. 86177
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
CENELEC EN 60079-0: 2000, CENELEC EN 60079-11: 1999
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- [12] The marking of the equipment or protective system shall include the following :

Model PSACS1-A:  1 M2 EEx ia I

Model PSACS1-B:  1 M2 EEx ib I

Oslo, 2007-05-24



Rolf Hoel
Certification Manager, Ex-products

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[13] Schedule**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 07ATEX1129X****[15] Description of Equipment or Protective System**

The system comprises of up to four separate segments for underground and a surface facility. These are all isolated from one another and may be considered as separate intrinsically safe subsystems.

Each powered segment contains its own independent IS certified power supply. The power supplies are installed in safe area.

The system type PSACS1-A uses [Ex ia] certified power supplies. The system type PSACS1-B uses [Ex ib] certified power supplies which is required to be de-energized in case of Zone 0 conditions.

A segment may comprise:

1. Up to forty IS Intercom type ABMA3, ABMA3-1 or ABMA4.
2. Up to forty DTMF Keyboard type AKB1.
3. An Intersystem Coupler type ISC2, if the system has more than one segment. This provides isolation between any two adjacent segments.
4. A Pre-start Alarm System type APSA2 for the initial segment.
5. A Coupler type ASCU for the initial segment. This provides isolation between the surface facility and the initial segment.
6. A Tail End Unit type TEU100 for the end segment.
7. A separately certified IS Power Supply.
8. Up to 4500 metres of segment cable.

The surface facility is composed of:

1. A separately certified (BAS01ATEX7005) IS barrier providing isolation between the surface facility and the safe area.
2. Up to 10000 metres of surface pair cable.

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[16] Report No. 86177

Descriptive Documents

Name/Title	Drawing No.	Rev/Issue	Date	Sheet No
TEU100 TAIL END UNIT	20-012-13	08	2007-05-16	01
COMMUNICATION AND SIGNALLING SYSTEM TYPE PSACS1-A Ex ia SYSTEM DETAILS	20-035-19	13	2007-05-16	02
TYPE ABMA3-1 I.S. INTERCOM LABEL DETAILS	20-135-13	12	2007-05-16	01
APSA2 PSA CONTROLLER LABEL DETAILS	20-208-13	05	2007-05-16	01
COMMUNICATIONS AND SIGNALLING SYSTEM TYPE PSACS1-A OR PSACS1-B LABEL DETAILS	20-224-13	04	2007-05-16	01
INTERSYSTEMS COUPLER TYPE ISC2 ENCLOSURE LABEL DETAILS	20-226-13	04	2007-05-16	01
TYPE ABMA4 I.S. INTERCOM GRAPHIC DETAIL LABEL DETAILS	20-240-13	09	2007-05-16	04
PCB0157A LABEL FOR INTERSYSTEM COUPLER TYPE ISC2 ARTWORK DETAILS	20-263-21	03	2007-05-16	02
DTMF KEYBOARD TYPE AKB1 LABEL DETAILS	20-268-13	04	2007-05-16	01
TAIL END UNIT TYPE TEU2 LABEL 517 LABEL DETAILS	20-339-13	03	2007-05-16	01
SAFETY COUPLING UNIT TYPE ASCU AUSTDAC P/No.BARR007 LABEL UNIT	57-006-13	06	2007-05-16	01

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[17] Special Conditions for Safe Use

1. The Pre-start Alarm System type APSA2 shall be housed in an enclosure that has a minimum IP55 ingress protection rating.
2. The R, V, S and M lines comprise the power and data bus throughout the system. They may be connected to components throughout the system, but only on the R, V, S and M connection terminals of the components being connected.
3. No more than one power supply per segment shall be used in the system.
4. The system and its interconnecting cables shall be connected only according to drawing number 20-035-19 issue 13 dated 2007/05/16.
5. Only intrinsically safe, category [ia] certified barriers with parameters in agreement with the following maximum output parameters shall be used:

OUTPUT PARAMETERS OF IS CERTIFIED BARRIER	
Maximum Output Voltage U_o	≤ 10.1 V
Maximum Output Current I_o	≤ 0.33 A
Maximum Output Capacitance C_o	≤ 0.5 μ F
Maximum Output Inductance to Resistance Ratio L_o/R_o	≥ 40 μ H/ Ω

6. Only intrinsically safe, category [ia] certified (for PSACS1-A) or category [ib] (for PSACS1-B) certified power supplies with parameters in agreement with the following maximum output parameters shall be used:

OUTPUT PARAMETERS OF IS POWER SUPPLY	
Maximum Output Voltage U_o	≤ 12.6 V
Maximum Output Current I_o	≤ 2.35 A
Minimum Output Resistance R_o	≥ 5.35 \cdot
Maximum Output Capacitance C_o	≤ 12 F
Maximum Output Inductance to Resistance Ratio L_o/R_o	≥ 60 μ H/ Ω

7. The system type PSACS1-B using [Ex ib] certified power supplies is required to be de-energized in case of Zone 0 conditions.

[18] Essential Health and Safety Requirements

See item 9

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