



Reference Manual

Load Computer 1010 CB

Honeywell Enraf

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Honeywell Enraf

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Glossary

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CHAPTER 1 OVERVIEW

1.1 Introduction

This manual is an overview of the manuals that describe the operation and functions of the instrument.

1.1.1 Terminology and Conventions

In this document, “instrument” refers to the generic Model 1010 loading system, and “computer” refers to the attached computer, Distributed Control System (DCS), Load Rack Computers (LRC), or Terminal Automation System (TAS).

The table below describes the standard models of 1010 instrument and the features they offer:

Sales Code	Description	Physical Load Arms				Internal Additives.	RIT Panel
		Arm 1	Arm 2	Arm 3	Arm 4		
MODEL A	One arm loading - no blending.	Single Product	NA	NA	NA	6	YES
MODEL B	One arm loading with two product ratio blending	2 product ratio	NA	NA	NA	4	YES
MODEL C	One arm loading with two product side stream blending	2 product side stream	NA	NA	NA	4	YES
MODEL D	Two single arms - no blending.	Single Product	Single Product	NA	NA	4	YES
MODEL E	Two arm loading, one Straight loading, one with ratio blending.	Single Product	2 product ratio	NA	NA	2	YES
MODEL F	Two arm loading, one straight loading, one with side stream blending.	Single Product	2 product side stream	NA	NA	2	YES
MODEL G	Two load arms, each comprised of 2 product ratio blending.	2 product ratio	2 product ratio	NA	NA	NA	YES
MODEL H	Two load arms, each comprised of 2 product side stream blending.	2 product side stream	2 product side stream	NA	NA	NA	YES
MODEL J	Four single arms - no blending.	Single Product	Single Product	Single Product	Single Product	NA	NO

The Glossary at the end of this manual contains the meaning of other terms that are commonly used in 1010CB documents.

1.1.2 Application Packs

The Application Packs is a method of describing the mixture of hardware and software that is specific to a particular application. It lists

the main electronic modules, the software modules and also provides a terminal listing specific to the application.

1.1.3 Instrument Data Sheet

The Instrument Data Sheet gives a general overview of the instrument, including the model number breakdown, programmable parameters and the instrument's technical specification.

1.1.4 Operator Manual

The Operator Manual describes the operator interface, operational prompts, and error and alarm messages that may be encountered during the day to day use of the instrument.

1.1.5 Programming Manual

The Programming Manual sets out the various programming steps necessary to configure the instrument for a particular installation. Topics covered are the standard system functions, the setting of the date and time, optional parameters, flowmeter and control valve selection, additive injection details and communication set-up for either printers or host computers.

1.1.6 Software Manual

The Software Manual provides a description of the software modules that make up the operating system of the instrument.

NOTE: The software modules installed depend on how the instrument is programmed.

1.1.7 Protocol Manual

The Protocol Manual provides the information that is necessary to design communication software to link the instrument to a computer system.

1.1.8 Installation and Service Manual

The Installation and Service Manual is to be used as a guide to the installation, commissioning, and general servicing of the instrument. Topics range from receipt and unpacking, recommended wiring practices, to the testing of external equipment such as valves and flow meters.

1.1.9 Card Descriptions and Wiring Manual

Card descriptions give a general description of the electronic modules that control the basic functions of the instrument. Each card description gives a brief functional description of the card including a layout of its main components. Link settings that are required to set up the operation

of the card are clearly shown. The Card Description provides a full list of all terminal connections and the technical specifications of the various types of inputs and outputs.

Wiring diagrams include a standard instrument installation wiring diagram, and wiring for various communication modes.

1.2 About the Model 1010 Load Computer

This section provides an overview of the 1010 instrument.

The 1010 is a powerful and intelligent load computer designed to manage the loading of petroleum and chemical products into road tankers, rail cars and barges.

The Model 1010 is available with a range of applications packs, consisting of application software and hardware designed to meet the specific requirements of:

- Standard petroleum loading
- Asphalt, bitumen & emulsions
- Loading aircraft refuelling vehicles
- Railcar loading
- Chemical Loading
- LPG loading
- Biofuel loading

In addition, Honeywell Enraf has developed a number of special application packs to meet the needs of customers in different countries or where special or non-standard requirements exist. The flexibility of the Model 1010 software and the range of input/output boards allows the system to be tailored to meet most customer requirements.

The Model 1010 can operate in a stand-alone mode or be fully integrated with a high level terminal automation system (TAS). External connected Remote Interaction Terminal (RIT) panel is also supported, to make the interface to the load computer simpler.

1.2.1 Stand-alone

In stand-alone mode, the instrument provides complete control of the loading rack, including:

- Authorising personnel & vehicles
- Prompting the operator to enter arm number, compartment number and preset quantity
- Prompting and checking that the enabled permissives are connected
- Simultaneous loadings
- Deadman timer operation
- Control of pumps and gantry isolation valves

The instrument manages all loading operations for single or multi-compartment vehicles.

The last 292 vehicle loads are always stored in memory, allowing transactions to be downloaded to a computer system at a later date.

1.2.2 Integrated System

As the instrument is capable of authorising vehicles and generating prompts without reference to an automation system, the communication workload on the office computer is substantially less than if these functions were fully controlled by the automation system, as is the case with most other presets. As a result the cost of developing software drivers and automation programs is greatly reduced.

The Model 1010 uses SLIP protocol. SLIP provides a very reliable, secure and efficient method to transfer information to the office computer system. SLIP conforms to the International Standards Organisation OSI recommendations for multi-layered protocols.

1.2.3 RIT Panel

Assuming that the truck driver (operators) cannot read English, they are restricted to use only the RIT panel for loading in case the RIT panel function is enabled. Following 3 logical interface sequences are supported with the RIT panel.

- Normal loading sequence
- STOP button pressed sequence
- Error sequence

1.2.4 Personnel/Vehicle Authorisation

To limit the entry to, or the use of, a loading gantry to authorised personnel and vehicles, the instrument provides the following identification methods:

- Touch keys
- RF ID proximity cards
- PINs of four to eight digits
- NexWatch cards.

For more information, see "Authorisation Entry Mode" in the 1010 Programming Manual.

1.2.5 Functionality

The instrument has all the flow measurement and control functions expected of a leading preset. These include:

- Precision flow measurement, including pulse verification to API standards

- Both Side stream and Ratio Blending
- Support for both volumetric and mass flow meter
- Temperature, Pressure and/or Density measurement
- Volume correction to API tables for most petroleum products and to US and metric standards
- Digital valve control
- Both standard additive control outputs and intelligent additives interface
- Internal additives
- Remote Interaction Terminal (RIT) panel interface.
- Pump demand outputs with programmable delays
- Permissive inputs for vehicle overfill/ground, vapour recovery and emergency stop
- Pulse outputs
- Other programmable digital inputs/outputs specific to user requirements
- Programmable permissive for non-standard permissive requirements

The digital control enables the flow profile to be programmed to ramp up at the start of the load and to ramp down prior to the end of the load.

With our field proven fine-tuning algorithm, accurate control of flow rate is ensured for all major brands of digital control valves.

1.2.6 Modular Design

The modular design of the electronics simplifies servicing. Should a fault develop in the electronics, modules can be simply changed over in the field by technicians with minimal training.

The need for highly specialised personnel and/or costly maintenance contracts is eliminated providing terminals and depots with a level of self-sufficiency otherwise not available.

1.3 Approvals

To match its worldwide acceptance as a leading load computer the Model 1010 has the following approvals:

1.3.1 CE & EMC Standards

All instruments conform to the EMC Directive of the Council of European Communities 2004/108/EEC and the following standards:

- EN 55011:2007
- EN 61000-6-2:2005

1.3.2 Metrology

The instrument has approvals through NMI in accordance with:

- Welmec Guide 8.8
- OIML R117 - 1 Edition 2007(E) "Dynamic measuring systems for liquids other than water".

1.4 Hazardous Area

The model Exe810 flameproof enclosure, is designed to house the Honeywell Enraf 1010CB, may be fitted with the 810TKIS Touch Key Reader and used to read associated identification touch keys, is certified for use in hazardous areas and has ATEX, IECEx, and CSA approvals as described in the following sections.

1.4.1 ATEX

The instrument is available in a flameproof version in conformance with Directive 94/9/EC on equipment intended for use in potentially explosive atmospheres (ATEX)

- Group II, Category 2 G
- Ex d IIB T6 for models without Touch Key Reader
- Ex d [ia] IIB T6 for models with Touch Key Reader
- DMT 02 ATEX E 105
- Ambient temperature range of -40 °C to +60 °C

A copy of the certificate is provided on page 2-11.

1.4.2 IECEx

The instrument is available in a flameproof version in conformance with the IECEx Scheme on equipment intended for use in potentially explosive atmospheres.

- Zone 1, Ex d IIB T6 for models without Touch Key Reader
- Zone 1, Ex d [ia] IIB T6 for models with Touch Key Reader
- IEC Ex TSA 07.0056X
- Ambient temperature range of -40 °C to +60 °C

A copy of the certificate is provided on page 2-3.

When installing in hazardous areas, the instrument must be installed according to the guidelines and in accordance with local standards and regulations for wiring and installation in hazardous areas.

1.4.3 CSA

The instrument is available in an explosion-proof version that conforms with the CSA certification based on the CSA C22.2 series of hazardous locations standards.

- Class I, Division 1, Groups C and C, T6
- Ambient temperature range of -40 °C to +60 °C

When installing in hazardous areas, the instrument must be installed according to the guidelines and in accordance with the Canadian Electrical Code in addition to any local standards and regulations for wiring and installation in hazardous areas.

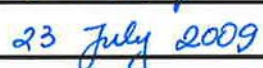
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CHAPTER 2 APPROVALS

2.1 NMI

	Evaluation Certificate
	Number : TC7704 revision 0 Project number : 10200085 Page : 1 of 1
Issued by	NMi Certin B.V.
In accordance with	– WELMEC guide 8.8 – OIML R117-1 Edition 2007 (E) "Dynamic measuring systems for liquids other than water".
Manufacturer	Honeywell Enraf Americas Inc., Roswell, USA
Sub system	An electronic calculating and indicating device for use as part of a liquid measurement installation. brand : Honeywell Enraf designation : 1010Ax-CB software versions : V5-000-1010A-CB-xxxxx.xxx-xxxx (x can be any character) accuracy class : 0,5 environment class : M3 / E2 ambient temperature range : -25 °C ... +55 °C humidity : condensing power supply voltage : 230 Vac @ 50 Hz or 12 – 28 Vdc In the Description TC7704 revision 0 the additional characteristics are given.
Description and Documentation	The electronic calculating and indicating device is described in the description number TC7704 revision 0 and documented in the documentation folder number TC7704-1, appertaining to this Evaluation Certificate.
Issuing Authority	NMi Certin B.V. 1 March 2010  C. Oosterman Head of the Certification Board
NMi Certin BV Hugo de Grootplein 1 3314 EG Dordrecht PO Box 394 3300 AJ Dordrecht, NL T +31 78 6332332 F +31 78 6332309 certin@nmi.nl www.nmi.nl	Parties concerned can lodge objection against this decision, within six weeks after the date of submission, to the general manager of NMI (see "Regulation objection and appeal against decisions of NMI") This document is issued under the provision that no liability is accepted and that the applicant shall indemnify third-party liability. Reproduction of the complete document is permitted.
	

2.2 IECEx

		<h1>IECEx Certificate of Conformity</h1>	
<p align="center">INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres for rules and details of the IECEx Scheme visit www.iecex.com</p>			
Certificate No.:	IECEx TSA 07.0056X	issue No.:2	Certificate history: Issue No. 2 (2009-7-23) Issue No. 1 (2008-9-12) Issue No. 0 (2008-2-14)
Status:	Current		
Date of Issue:	2009-07-23	Page 1 of 4	
Applicant:	Honeywell Enraf Americas Inc. 2000 Northfield Ct. Roswell GA 30076 United States of America		
Electrical Apparatus:	Load Computer 1010A series and Access Terminal 1030A series (both instruments housed in Ex d EXE810 Enclosure)		
Optional accessory:			
Type of Protection:	Flameproof, Intrinsic Safety		
Marking:	Honeywell Enraf Model Ex 810 Enclosure Ex d IIB T6 Model 810TKIS Touch Key Reader Ex d [ia] IIB T6 (if fitted to Ex 810 enclosure) Ambient: -40 °C to +60 °C IECEx TSA 07.0056X Do not open when explosive atmosphere is present S/N: _____		
Approved for issue on behalf of the IECEx Certification Body:	Gordana Manojlovic for Quality and Certification Manager		
Position:			
Signature: (for printed version)			
Date:			
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.			



IECEx Certificate of Conformity

Certificate No.: IECEx TSA 07.0056X

Date of Issue: 2009-07-23

Issue No.: 2

Page 2 of 4

Manufacturer: **Honeywell Enraf Americas Inc.**
2000 Northfield Ct.
Roswell GA 30076
United States of America

Manufacturing location(s):
**Honeywell Automation
India Limited**
56 & 57 Hadapsar Industrial
Estate
Pune, 411013
India

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2000 Edition: 3.1	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2001 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosures 'd'
IEC 60079-11 : 1999 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

AU/TSA/ExTR07.0060/00
AU/TSA/ExTR08.0044/00

Quality Assessment Report:
NL/KEM/QAR08.0042/00



IECEx Certificate of Conformity

Certificate No.: IECEx TSA 07.0056X

Date of Issue: 2009-07-23

Issue No.: 2

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Load Computer 1010A series and Access Terminal 1030A series are housed within an Ex d EXE810 Enclosure. This enclosure is intended to house electronic equipment for the processing and display of transducer inputs and outputs, and to provide a keyboard input terminal.

The enclosure consists of a body and lid attached by bolting across a flange joint. Body and lid are cast from aluminium alloy AS607 and machined to drawing requirements. The lid is machined to accept a series of switch shafts for operators. A similar shaft is also provided in one side of the body part. The shafts of these operators are retained by circlips. The lid also includes a glass window retained by bolting it between a retaining plate and the rear of the lid.

Electrical entry is via suitably certified glands to threaded entries in the base of the body part or by suitable conduit entry.

The enclosures may include the following options:

- Self-limiting internal heater having a maximum surface temperature of 65°C.
- Separately certified blanking elements for unused entries.

The enclosures have been assessed in IECEx Test Report BVS PP 02.2084.

Model 810TKIS Barrier may be installed within the enclosure and a Touch Key Reader on the external surface of the flameproof enclosure.

The 810TKIS Barrier is an isolating barrier that uses opto-couplers to transfer signals and power between mains connected circuit and the circuit connected to the Touch Key Reader. The barrier is mounted inside the EXE810 enclosure. Wiring between the Barrier and the Touch Key Reader has an insulation thickness of 1 mm or greater. The wiring to the Touch Key Reader passes through a cemented cable gland that fits in an opening of the enclosure.

The Touch Key Reader is fitted on the outside of the Enclosure. It consists of two metallic electrodes that are accessible to the user, who touches a Touch Key to these electrodes to enable the transfer of data. The Touch Key Reader is compatible with the Touch Keys that are outside the scope of this Certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

Please refer to Annexe of the certificate.



IECEx Certificate of Conformity

Certificate No.: IECEx TSA 07.0056X

Date of Issue: 2009-07-23

Issue No.: 2

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Please refer to Annexe of the certificate.

Annexe: Annex for IECEx TSA 07.0056X-2.pdf



IECEx Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEx TSA 07.0056X	Issue No.:	2
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Drawing list pertaining to Issue 0 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
1909ME	5	Cardrack Assy	5	2000/04/10
1914ME	1	Keyboard for 18 switch EXE810	1	1999/03/13
1915ME	1	Switch Panel for 18 switch EXE810	7	2001/06/14
1920ME	1	Switch Plunger for EXE810	7	2001/04/19
1922ME	1	Window Glass	1	1998/12/17
1923ME	1	Window Retaining Plate	5	2000/06/13
1924ME	1	Display Window for EXE810 - Cut	1	1999/03/13
1925ME	1	Switch Spring for EXE810	2	2000/02/11
1926ME	1	W & M Switch Plunger for EXE810	8	2001/05/24
1927ME	1	W & M Spring/Actuator for EXE810	2	2000/02/14
1928ME	1	W & M Switch bracket	5	2000/09/18
1929ME	1	Reader Gland for EXE810	4	2000/09/21
1930ME	1	EX810 Door PCB Mounting Plate	3.0	2000/08/08
1932ME	1	Stand-Off x 20	2	1998/12/10
1933ME	1	Reader Surround	2	2000/02/14
1934ME	1	Reader Insulating Bush 'A'	2	2000/02/14
1935ME	1	Reader Head	4	2000/09/29
1936ME	1	Reader Stepped Insulating Washer	2	2000/02/14
1937ME	1	Reader Insulating Washer	1	1999/03/13
1938ME	1	Reader Insulating Bush 'B'	1	1999/03/13
1939ME	4	EXE810-5 Assembly	10	2004/03/13
1940ME	4	EXE810-18 Assembly	10	2004/03/13
1941ME	1	Assy Reader Gland for EXE810	1.2	2000/02/11
1948FA	1	SFP EXE810-Window-Printed	2	1999/03/20
1949ME	1	Gland Seal Plug for EXE810	2	2000/02/11
1950ME	1	Keyboard for 5 Switch EXE810	1	1999/03/15
1953ME	1	Switch Plate for 5 Switches	7	2001/06/14
1955ME	1	Blanking Plate for Reader Hole	3	2000/09/21
1956ME	1	Hinge Pin for EXE810 Enclosure	1	1999/03/13
1957ME	4	EXE410 Assembly	7	2004/03/14
1958ME	3	Mounting Plate for EXE410	3	2000/09/13
1959ME	1	Switch Panel for EXE410	3	2000/09/18
1960ME	1	Keyboard for EXE410	1	1999/03/13
1961ME	1	Blank Switch Plunger for EXE410	5	2000/11/09
1980ME	2	Body Casting Details for EXE410	4	2000/04/02
1982ME	2	Body Casting Details for EXE810	4	2000/04/02
1984ME	1	Lid Casting-EXE410 & 810 Casting details	2	1999/04/20
1985ME	1	EXE810-5 Switch Lid Machine details	8	2000/07/12
1986ME	1	EXE810-18 Switch Lid Machine details	8	2000/07/12
2023ME	1	Switch washer	3	2000/12/07

Certificate issued by:



TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753 Australia

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Annexe for Certificate No.:	IECEX TSA 07.0056X	Issue No.:	2
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Document No.	Sheets	Document Title	Issue	Date
2042ME	1	Large Plunger Button for EX810	5	2000/07/25
2054ME	2	Body for EXE810 with M25 Glands machining details	9	2004/03/13
2095ME	2	EXE 410 body Machining Details 3 x M20	5	2004/03/13
2159ME	1	Hinge Spacer for EXE810	1	2000/02/09
2234ME	1	Switch Button Small for EXE810	3	2001/06/14
2235ME	1	Switch Button Large for EXE810	3	2001/06/14
2242ME	1	Blank Switch Panel for 810	1	2000/12/07
2265ME	1	Switch Button Cover	1	2001/06/14
2030CD	1	Touch Memory Assoc. Apparatus	4.0	2004/03/04
2038PA	3	Board Layout for S810TKIS	4.0	2004/03/04
2039PL	1	Parts List for 810TKIS	4.0	2004/03/04
2035ID	2	Touch Key Installation With 810TKIS	1.0	1999/04/26
2040ME	1	Specifications for 810TKIS	1.0	1999/04/26
1354ID	1	Termination of The Shielded Twisted Pair Cable	1.0	1993/01/21
2577PL	1	Label for IECEX Ex 410 Enclosure	1.1	2008/01/31
2578PL	1	Label for IECEX Ex 810 Enclosure	1.1	2008/01/31

Conditions of Certification pertaining to Issue 0 of this Certificate:

- It is a condition of manufacture that each enclosure shall be subject to a static pressure test in accordance with clause 16 of IEC 60079-1:2001 using a minimum test pressure of 13.5 bar applied for more than 10 seconds.
- It is a condition of safe use that the maximum voltage that may be connected to the non-intrinsically safe connections of the Touch Key Barrier is $U_m = 250$ V.
- It is a condition of safe use that the intrinsically safe Touch Key Reader connector has the following input and output parameters, and these shall be taken into account during installation:

Maximum input voltage U_i	6 V
Maximum input power P_i	0.24 W
Maximum internal capacitance C_i	125 μ F
Maximum internal inductance L_i	0 μ H
Maximum output voltage U_o	6 V
Maximum output current I_o	0.1 mA
Maximum external capacitance C_o	500 μ F
Maximum external inductance L_o	7 mH

Variation permitted in Issue 1:

This is supplementary to the earlier certificate IECEX TSA 07.0056X Issue 0. The equipment has not changed, but the description of the equipment has now been revised to provide the model names and numbers **Load Computer 1010A4-CJ** and **Access Terminal 1030A0-GC** instead of just the enclosure number EXE810.

Certificate issued by:



TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753 Australia

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IECEx Certificate of Conformity Annexe

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The revised Ex code will be:

- Ex d ia IIB T6 for both the Load Computer 1010A4-CJ and Access Terminal 1030A0-GC with Touch Key Reader and Touch Key Barrier
- Ex d IIB T6 for both the Load Computer 1010A4-CJ and Access Terminal 1030A0-GC without Touch Key Reader and Touch Key Barrier

in standard atmospheric pressure and for ambient temperatures –40 °C to 60 °C.

Drawing list pertaining to Issue 1 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
1909ME	5	Cardrack Assy	5	2000/04/10
1914ME	1	Keyboard for 18 switch EXE810	1	1999/03/13
1915ME	1	Switch Panel for 18 switch EXE810	7	2001/06/14
1920ME	1	Switch Plunger for EXE810	7	2001/04/19
1922ME	1	Window Glass	1	1998/12/17
1923ME	1	Window Retaining Plate	5	2000/06/13
1924ME	1	Display Window for EXE810 - Cut	1	1999/03/13
1925ME	1	Switch Spring for EXE810	2	2000/02/11
1926ME	1	W & M Switch Plunger for EXE810	8	2001/05/24
1927ME	1	W & M Spring/Actuator for EXE810	2	2000/02/14
1928ME	1	W & M Switch bracket	5	2000/09/18
1929ME	1	Reader Gland for EXE810	4	2000/09/21
1930ME	1	EX810 Door PCB Mounting Plate	3.0	2000/08/08
1932ME	1	Stand-Off x 20	2	1998/12/10
1933ME	1	Reader Surround	2	2000/02/14
1934ME	1	Reader Insulating Bush 'A'	2	2000/02/14
1935ME	1	Reader Head	4	2000/09/29
1936ME	1	Reader Stepped Insulating Washer	2	2000/02/14
1937ME	1	Reader Insulating Washer	1	1999/03/13
1938ME	1	Reader Insulating Bush 'B'	1	1999/03/13
1939ME	4	EXE810-5 Assembly	10	2004/03/13
1940ME	4	EXE810-18 Assembly	10	2004/03/13
1941ME	1	Assy Reader Gland for EXE810	1.2	2000/02/11
1948FA	1	SFP EXE810-Window-Printed	2	1999/03/20
1949ME	1	Gland Seal Plug for EXE810	2	2000/02/11
1950ME	1	Keyboard for 5 Switch EXE810	1	1999/03/15
1953ME	1	Switch Plate for 5 Switches	7	2001/06/14
1955ME	1	Blanking Plate for Reader Hole	3	2000/09/21
1956ME	1	Hinge Pin for EXE810 Enclosure	1	1999/03/13
1982ME	2	Body Casting Details for EXE810	4	2000/04/02
1984ME	1	Lid Casting-EXE410 & 810 Casting details	2	1999/04/20
1985ME	1	EXE810-5 Switch Lid Machine details	8	2000/07/12

Certificate issued by:



TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753 Australia

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IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 07.0056X	Issue No.:	2
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Document No.	Sheets	Document Title	Issue	Date
1986ME	1	EXE810-18 Switch Lid Machine details	8	2000/07/12
2023ME	1	Switch washer	3	2000/12/07
2042ME	1	Large Plunger Button for EX810	5	2000/07/25
2054ME	2	Body for EXE810 with M25 Glands machining details	9	2004/03/13
2095ME	2	EXE 410 body Machining Details 3 x M20	5	2004/03/13
2159ME	1	Hinge Spacer for EXE810	1	2000/02/09
2234ME	1	Switch Button Small for EXE810	3	2001/06/14
2235ME	1	Switch Button Large for EXE810	3	2001/06/14
2242ME	1	Blank Switch Panel for 810	1	2000/12/07
2265ME	1	Switch Button Cover	1	2001/06/14
2030CD	1	Touch Memory Assoc. Apparatus	4.0	2004/03/04
2038PA	3	Board Layout for S810TKIS	4.0	2004/03/04
2039PL	1	Parts List for 810TKIS	4.0	2004/03/04
2035ID	2	Touch Key Installation With 810TKIS	1.0	1999/04/26
2040ME	1	Specifications for 810TKIS	1.0	1999/04/26
1354ID	1	Termination of The Shielded Twisted Pair Cable	1.0	1993/01/21
Note: Above drawings were listed on AU/TSA/ExTR07.0060/00				
2578PL-1	1	Label for IECEX Ex 810 Enclosure	1.0	2008/09/09
1030A0-GC	3	Internal Equipment Location Drawing For EX810 Enclosure	A1	2008/06/26
1010A4-CJ	3	Internal Equipment Location Drawing For EX810 Enclosure	A1	2008/06/26

Conditions of Certification pertaining to Issue 1 of this Certificate:

- It is a condition of manufacture that each enclosure shall be subject to a static pressure test in accordance with clause 16 of IEC 60079-1:2001 using a minimum test pressure of 13.5 bar applied for more than 10 seconds.
- It is a condition of safe use that the maximum voltage that may be connected to the non-intrinsically safe connections of the Load Computer 1010A4-CJ and Access Terminal 1030A0-GC is $U_m = 250$ V.
- It is a condition of safe use that the following input and output parameters shall be taken into account during installation:

The Touch Key Barrier has the following output parameters:

Maximum output voltage U_o	6 V
Maximum output current I_o	0.1 mA
Maximum external capacitance C_o	125 μ F
Maximum external inductance L_o	7 mH

Certificate issued by:



TestSafe Australia
919 Londonderry Road
Londonderry NSW 2753 Australia

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IECEX Certificate of Conformity Annexe

Annexe for Certificate No.:	IECEX TSA 07.0056X	Issue No.:	2
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The intrinsically safe Touch Key Reader has the following input parameters:

Maximum input voltage U_i	6 V
Maximum input power P_i	0.24 W
Maximum internal capacitance C_i	0.001 μ F
Maximum internal inductance L_i	0 μ H

Variation permitted in Issue 2:

1. The applicant name is changed from Contrec Pty Ltd to Honeywell Enraf Americas Inc.
2. The manufacturer name is changed from Contrec Pty Ltd to Honeywell Enraf Americas Inc.
3. Add new manufacture location in India. The quality assessment report for the manufacturer in India has been reviewed and accepted.

Drawing list pertaining to Issue 2 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
2578PL-1	1	Label for IECEX Ex 810 Enclosure	1.2	2009/03/27

Conditions of Certification pertaining to Issue 2 of this Certificate:

The conditions of certification are unchanged from the Issue 1 of the certificate.

Certificate issued by:

	TestSafe Australia 919 Londonderry Road Londonderry NSW 2753 Australia
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EPF011_1

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2.3 ATEX



Translation

EC-Type Examination Certificate

(1)

(2)

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

(3)

DMT 02 ATEX E 105

(4)

Equipment: Enclosure Type EXE 410 and Type EXE 810

(5)

Manufacturer: Contrec Systems Pty. Ltd

(6)

Address: AUS 3123 Melbourne

(7)

The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8)

The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 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.
The examination and test results are recorded in the test and assessment report BVS PP 02.2053 EG.

(9)

The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000	Flameproof enclosure 'd'

(10)

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.

(11)

This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance with Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12)

The marking of the equipment shall include the following:



II 2G EEx d IIB T6

Deutsche Montan Technologie GmbH

Essen, dated 27. May 2002

Signed: Jockers

DMT-Certification body

Signed: Eickhoff

Head of special services unit

Page 1 of 2 to DMT 02 ATEX E 105
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(13) Appendix to

(14) **EC-Type Examination Certificate**

DMT 02 ATEX E 105

(15) 15.1 Subject and type

Enclosure type EXE 410 and type EXE 810

15.2 Description

The enclosures are designed for electronic devices to analyse and display signals e. g. of flow sensors.

The enclosures may be equipped with a heater with a self-limiting characteristic (maximum surface temperature of the heater 65°C).

The front panel may be equipped with a touch key reader. An intrinsically safe circuit connects the reader with the electronic devices inside the enclosure via a bushing. This intrinsically safe circuit as well as the necessary components inside the enclosure are certified separately. If the reader is not installed a blanking element is used instead of the bushing.

15.3 Parameters

Supply voltage		EXE 410	EXE 810
		AC 240 V	AC 240 V
	or	DC 28 V	DC 15 V
Maximum power		7,5 W	24 W

(16) Test and assessment report
BVS PP 02.2053 EG as of 27.05.02


(17) Special conditions for safe use
None

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 27. May 2002
BVS-Wit/Ar A 20020125

Deutsche Montan Technologie GmbH


DMT-Certification body


Head of special services unit

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Translation



1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 105

Equipment: Enclosure Type EXE 410 and Type EXE 810
Manufacturer: Contrec Systems Pty. Ltd
Address: AUS 3123 Melbourne

Description

Inside the enclosure type EXE 810 a barrier 810KTIS can be mounted according to the descriptive documents as mentioned in the pertinent test and assessment report

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997 + A1 – A2	General requirements
EN 50018:2000	Flameproof enclosure 'd'
EN 50020:1994	Intrinsic safety 'i'

Test and assessment report

BVS PP 02.2053 EG as of 02.04.2003

Deutsche Montan Technologie GmbH

Essen, dated 02. April 2003

signed: Jockers
DMT-Certification body

signed: Eickhoff
Head of special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 02.04.2003
BVS-Wi/Ar A 20020399

Deutsche Montan Technologie GmbH


DMT-Certification body


Head of special services unit

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2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 105

Equipment: Enclosure type EXE 410 and EXE 810

Manufacturer: Contrec Systems Pty. Ltd

Address: 3123 Melbourne, AUS

Description

Inside the enclosure type EXE 810 a modified barrier 810KTIS can be mounted according to the descriptive documents as mentioned in the pertinent test and assessment report.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997 + A1 - A2	General requirements
EN 50018:2000 + A1	Flameproof enclosure 'd'
EN 50020:2002	Intrinsic safety 'i'

Test and assessment report

BVS PP 02.2053 EG as of 24.06.2004

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 24. June 2004

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 24.06.2004

BVS-Schu/Mi A 20040370

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

Page 1 of 1 to DMT 02 ATEX E 105 / N2

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(until 31.05.2005: Deutsche Montan Technologie GmbH · Am Technologiepark 1 · 45307 Essen)



3rd Supplement

(Supplement in accordance with Directive 94/9/EC Annex II number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 105

Equipment: Enclosure type EXE 410 and EXE 810
Manufacturer: Honeywell Enraf Americas Inc.
Address: 2000 Northfield Court, Roswell, Georgia 30076, USA

Description

The enclosures are designed for electronic devices to analyse and display signals e. g. of flow sensors. The construction of the enclosures corresponds to the construction tested in BVS 00.E.2007.

The enclosures may be equipped with a heater with a self-limiting characteristic (maximum surface temperature of the heater 65°C).

Inside the enclosure type EXE 810 a barrier type 810TKIS can be mounted.

The front panel may be equipped with a touch key reader. An intrinsically safe circuit connects the reader with the electronic devices inside the enclosure via a bushing. This intrinsically safe circuit as well as the necessary components inside the enclosure are certified separately. If the reader is not installed a blanking element is used instead of the bushing.

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

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006 General requirements
EN 60079-1:2007 Flameproof enclosure
EN 60079-11:2007 Intrinsic safety

The marking of the equipment shall include the following:

II 2G Ex d [ia] IIB T6 or II 2G Ex d IIB T6

Special conditions for safe use

None

Intentionally left blank.

GLOSSARY

- authorisation** Type of authorisation. Can be PIN, touch key, RF ID, or NexWatch. For more information, see chapter 10 “Authorisation Entry Mode” in the 1010CB Programming Manual.
- authorisation number** A number that is programmed into the instrument to allow access to the instrument after presenting *authorisation*.
- batch** Individual loading of product using a single loading arm.
- bay** The location where a vehicle parks to connect the loading arm and receive product movements—usually also the location of the instrument. A typical site can contain multiple bays.
- BOL** Bill of Lading. A document that is used to acknowledge the receipt of a shipment of goods.
- computer** A computer, Distributed Control System (DCS), Load Rack Computers (LRC), or Terminal Automation System (TAS) that is attached to an instrument.
- CTPL** Correction for the effect of Temperature and Pressure on Liquid.
This is the combined correction for the combined effect of Temperature and Pressure on Liquid.
The temperature portion of this correction is termed the Correction for the effect of Temperature on Liquid (CTL).
The pressure portion is termed the Correction for the effect of Pressure on Liquid (CPL).
- entry** Term formally used to describe a batch.
- extended wait period** Time, in addition to the wait period, required because a command prevents the instrument responding for an extended time.
- GOV** Gross Observed Volume.
- GSV** Gross Standard Volume.
- instrument** A 1010 Loading System.
- intelligent additive injection** An automated additive injection system that connects to the instrument by a serial communications port. Mini-Pak is one example of this.
- load** See *also* “batch”
- Honeywell Enraf Mini-Pak** See “Mini-Pak”

Mini-Pak	An automated additive injection system.
OIML	International Organization of Legal Metrology
product stream	A stream consisting of a pure product. Both the main and blend streams are product streams.
proving run	One completed batch or loading operation carried out with the Automated Proving Mode enabled.
ratio blending	A process of loading multiple products into a vessel simultaneously. All product streams that make up the loading arm have their own dedicated flow meter, pump, and control valve. Two independently controlled product streams are blended down-stream of the custody meters.
recipe	An entity that describes an end product in terms of its primary products and additives. It also includes clean line volume for blending and flush volumes for additive injection.
RIT	<p>RIT stands for Remote Interaction Terminal. It is designed to aid the operator in using the instrument without using the keypad.</p> <p>The RIT panel has 3 keys per arm: START, STOP and ACK. These are connected to GP inputs of the instrument. The three indicator lamps outputs per arm are RED, AMBER and GREEN. These are connected to GP outputs of the instrument.</p>
service display	Two line display that shows the loading information for a selected parameter for the selected arm.
side stream blending	This is a form of ratio blending where a minor product stream is metered and blended into a main product stream upstream from the main custody transfer meter.
transaction	The record of product movement created once the operator is authorised to use the instrument. A single transaction can be composed of multiple batches, each batch representing the individual product movements that are required to fill the compartments of a vehicle.
unauthorised flow	Flow that is recorded by a meter without being authorised (by an operator pressing the START key button).
unit address	The address byte a computer uses to direct information to the desired instrument
vessel	A device for containing product, such as a compartment within a truck tanker.
wait period	The time the computer waits for a response after sending a command to the instrument. Generally 300 millisecond.

See *also* “extended wait period”.

Weights and Measures switch A switch that is mounted on the instrument exterior, that be fitted with a tamper seal for W&M requirements.
On the Model 1010 the switch is located on the lower right-hand side of the enclosure.

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