



# Hazardous Area Equipment

Customised and IECEx Certified Hazardous Area Solutions

HAZARDOUS AREA EQUIPMENT



# NHP Hazardous Area Solutions

The NHP logo consists of the letters 'NHP' in a bold, white, sans-serif font, set against a solid blue square background.

IECEx certified Hazardous Area workshop in Australia

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Full range of IECEx certified products

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Industry leading turnaround time on custom assemblies

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Certified Hazardous Area experts

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National and IECEx certified training courses



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### 3 Step Product Selection Guide

To select the optimal products for your application please reference the documentation below

1 - Technical Data Sheets

2 - IECex Certification

3 - Product Installation Manual

For Documentation please go to [nhp.com.au](http://nhp.com.au)



## SELECTION OF HAZARDOUS AREA ELECTRICAL EQUIPMENT

In order to select electrical apparatus for use in hazardous areas it is necessary to have the following information:

1. Area Classification
2. Gas, vapour or combustible dust group
3. The "T" rating or the ignition temperature of the hazard
4. The required IP rating of the apparatus

### 1. Area Classification

The areas are classified into ZONES, and these zones are based on the frequency of the appearance of an explosive atmosphere and the duration for which it can last.

Summarised in the table below:

#### Gases and Vapours

Zone 0	Area in which an explosive gas-air mixture is continuously present or present for long periods.
Zone 1	Area in which an explosive gas-air mixture is likely to occur for short periods in normal operation.
Zone 2	Area in which an explosive gas-air mixture is not likely to occur, and if it occurs it will only exist for a very short time due to an abnormal condition.

#### Typical hazardous area industries:

##### Gases and Vapours

- Oil refineries and chemical plants
- Offshore drilling rigs
- Spray booths
- Sewerage treatment plants
- Oxygen and Acetylene
- Aircraft hangers
- LNG plants
- Wharves for petroleum and LNG vessels
- Paint manufacturers
- Distilling
- Laboratory and fume cupboards

##### Dust

- Food manufacturing
- Grain handling and storage
- Chemicals/fertilizer
- Plastics
- Wood/pulp/paper
- Milk powder
- Flour Mills
- Pharmaceuticals
- Metal processing
- Recycling operations
- Fiberglass manufacturing
- Explosive factories

#### Dust

Zone 20	Area in which an explosive dust-air mixture is continuously present or present for long periods.
Zone 21	Combustible or conductive dusts are present and are likely to occur for short periods in normal operation.
Zone 22	Area in which an explosive dust mixture is not likely to occur, and if it occurs it will only exist for a very short time due to an abnormal condition.

## 2. Gas, vapour or combustible dust group

Gases and vapours are divided into three groups:

Group I		Group II		Group III	
Mining		Explosive Gas Atmosphere		Explosive Dust Atmosphere	
M1	M2	Sub-Division	Ignition Energy	Sub-Division	Explosive Atmosphere
		IIA (eg: Propane)	260 Micro-joules	IIIA	Combustible flyings
		IIB (eg: Ethylene)	95 Micro-joules	IIIB	Non-conductive dust
		IIC (eg: Acetylene and Hydrogen)	18 Micro-joules	IIIC	Conductive dust

The hazard level of the gases and dusts increases from gas groups IIA to IIC and dust groups IIIA to IIIC. The most severe in both cases being IIC and IIIC.

### 3. Temperature or “T” rating for explosive gas atmospheres.

The source of ignition in a Hazardous Area can be an arc or a spark or even a hot surface.

Since electrical equipment generates heat in normal operation we need to ensure that a hot surface on electrical apparatus cannot ignite a surrounding explosive gas atmosphere or a dust cloud or layer.

All hazardous materials have what is known as an “Ignition Temperature”, this is the minimum temperature at which the hazardous material when mixed with air will ignite and sustain combustion, without an ignition source (auto-ignition or spontaneous ignition).

For explosive gas atmospheres a “T” rating is given. For example, a T6 rated product will not exceed 85 °C and a T3 will not exceed 200 °C. While in service in Hazardous Area Equipment for explosive dust atmospheres are given a maximum surface temperature rather than a “T” rating. This is so dust build up, or layers can be accounted for via de-rating calculations.

T Rating	Maximum Temperature
T1	450 °C
T2	300 °C
T3	200 °C
T4	135 °C
T5	100 °C
T6	85 °C

### SELECTION OF TEMPERATURE RATING FOR HAZARDOUS DUSTS

Dusts pose additional problems when dealing with temperature. Dust can settle on equipment and ledges to form layers. Because of this we have to consider dusts in two forms:

- 1) As a cloud mixed with air
- 2) As layers settled on surfaces

Dust as a cloud and dust in layers will have different ignition temperatures and we need to consider the lowest of these two.

Dust in the form of a layer on electrical equipment can impair heat dissipation and cause increased temperatures to the equipment.

Temperature increase as a result of layers can also cause the dust to dry out and give rise to spontaneous combustion of the dust in the layers.

Disturbance of the dust layers can cause it to rise and mix with air to form an explosive cloud.

Pressure wave from a relatively small dust explosions have historically converted dust layers on sites into clouds, giving rise to much more serious secondary explosions.

#### a) For Dust Clouds

You must select equipment with a T rating that is two thirds that of the ignition temperature of the dust hazard.

E.g. if the ignition temperature of the hazardous dust is 150°C then the equipment T rating must not exceed 100°C or T5

#### b) For Dust Layers

You must select equipment with a T rating that is 75°C less than the ignition temperature of a layer on the surface of the equipment.

E.g. if the ignition temperature of the dust layer is 275°C then the equipment T rating must not exceed 200°C or T3.

The thickness of dust layers is critical to the whole operation and this is the main reason for good housekeeping. If the layers are going to be more than 5 mm then testing must be carried out on the individual hazardous dust at the specified thickness to obtain the layer ignition temperature at that layer thickness.

### EQUIPMENT PROTECTION LEVELS (EPLs)

EPLs were introduced to Hazardous Area classifications at the same time optional risk assessments were introduced. Rather than define the probability an explosive atmosphere will exist (Hazardous Zones) EPLs consider the consequence of an explosion, and a protection level is assigned based on its ignition risk.

A risk based approach to Hazardous Area classification is used to ensure that equipment manufactured for or installed in a Hazardous area will not become a source of ignition, even in a failed state.

During classification, a risk based approach of consequences of an explosion, can be used to determine if equipment used can be of a higher or lower level of protection, beyond the nominally used zone equipment selection criteria.

**EPL Ga/Da:** Equipment having a **very high** level of protection, which will not act as a source of ignition in normal operation, expected faults or when subject to rare faults.



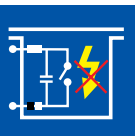

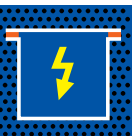
**EPL Gb/Db:** Equipment having a **high** level of protection, which will not act as a source of ignition in normal operation or during expected faults.

**EPL Gc/Dc:** Equipment having an **enhanced** level of protection which will not act as a source of ignition in normal operation and reduce the likelihood of acting as an ignition source during expected faults, e.g an indicator lamp failure.

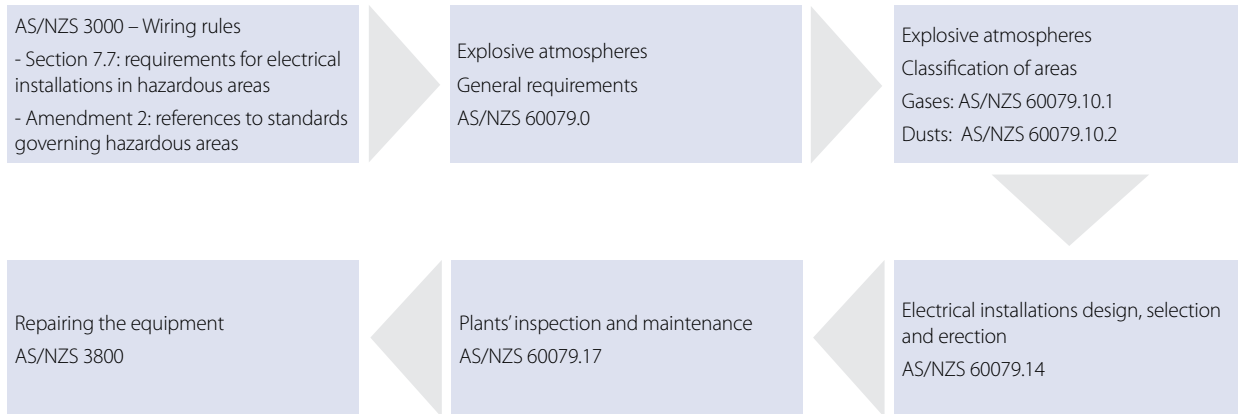
#### Equipment Protection Levels (EPLs)

Protection level	Zone	EPL
Very High	Zone 0	Ga
	Zone 20	Da
High	Zone 1	Gb
	Zone 21	Db
Enhanced	Zone 2	Gc
	Zone 22	Dc

### TYPES OF PROTECTION FOR ELECTRICAL APPARATUS IN HAZARDOUS AREAS - EXAMPLES

Type of protection	Diagram	Description	Standard
Flame proof enclosure  <b>Ex d</b>		Ex d - "Flameproof Enclosure – type of protection for electrical equipment in which the enclosure will withstand an internal explosion of a flammable mixture which has penetrated into the interior without suffering damage and without causing ignition".	AS/NZS 60079-1
Increased safety  <b>Ex e</b>		Ex e - "Increased safety – type of protection applied to electrical equipment that does not produce arcs and sparks in normal service in which additional measures are applied so as to give increased security against the possibility of excessive temperatures and the occurrence of arcs and sparks".	AS/NZS 60079-7
Intrinsic safety  <b>Ex i</b>		Ex i - "Intrinsically safe circuit – a circuit in which any spark or any thermal effect produced in the test conditions prescribed in the standard (which include normal and specified fault conditions) is INCAPABLE of causing ignition of a given explosive atmosphere".	AS/NZS 60079-11
Non-sparking  <b>Ex n</b>		Ex n - II– type of protection applied to electrical equipment such that, in normal operation, it is not capable of igniting a surrounding explosive gas atmosphere and a fault capable of causing ignition is not likely to occur."	AS/NZS 60079-15
Protection by enclosure  <b>Ex t</b>		Ex t - "An enclosure which excludes dust, and which will not permit arcs, sparks or heat otherwise generated or liberated inside the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specified dust on or in the vicinity of the enclosure".	AS/NZS 60079-31

## EX HAZARDOUS AREA STANDARDS AND LEGISLATION FLOW CHART



## ELECTRICAL LEGISLATION-GENERAL

Within Australian states and territories there is an Act or Regulation of parliament that requires electrical installations to comply with AS/NZS 3000 - Wiring rules. The exact requirements vary State to State, however generally it is the responsibility of the electrical worker or contractor to ensure that the installation complies with regulations (including those referenced in AS/NZS 3000). There are serious penalties for non-compliance, including loss of license, fines and jail terms. Although there are often exclusion to the legislated applicability of the wiring rules for places like mines, quarries and petroleum leases, we generally find in such cases that the

rules are called up in site safety management plans or contract documents, so compliance is still required, just via a slightly different mechanism.

Section 7.7 of AS/NZS 3000:2007 sets out the requirements for electrical installation in Hazardous Areas. AS/NZS 3000:2007 Amendment 2 requires compliance with these "harmonised" standards, the AS/NZS 60079 series.

The relevant clauses of Amendment 2 are reproduced below with some added commentary:

## RESPONSIBILITY FOR CLASSIFICATION OF A HAZARDOUS AREA

AS/NZS 3000:2007 - 7.7.2.1

The responsibility for classification of a Hazardous Area rests with the persons or parties in control of the installation. The requirements are contained in AS/NZS 60079.10.1 for gas or vapor and AS/NZS 60079.10.2 for combustible dust.

Commentary: The critical take-away from this is, the acknowledgment of responsibility that rests with the owner or occupier of the premises that houses the Hazardous Area

in question – a responsibility that is consistent with standard OHS legislation. While this person is not expected to perform the classification themselves, he/she is obligated to identify the potential for a Hazardous Area and engage a competent person (see page 7 for further explanation of competency requirements) to do so.

## ELECTRICAL EQUIPMENT

### Selection

AS/NZS 3000:2007 - 7.7.2.4.1

Electrical equipment selected for use in Hazardous Areas shall comply with the appropriate requirements as specified in AS/NZS 60079.14.

### Installation

AS/NZS 3000:2007 - 7.7.2.4.2

Electrical equipment shall be installed in accordance with the installation requirements of AS/NZS 60079.14.

Commentary: What is essential to understand here, is that to comply with AS/NZS 3000:2007, electrical equipment that is selected and installed in a hazardous area environment must be compliant to AS/NZS 60079.14.

## COMPETENCY OF PERSONNEL

AS/NZS 3000: 7.7.2.4.2

Refers to competency requirements in AS/NZS 60079.14. The relevant clause in that standard is 4.4, reproduced below:

AS/NZS 60079.14 – 4.4

The design of the installation, the selection of equipment and the erection covered by this standard shall be carried out only by persons whose training has included instruction on the various types of protection and installation practices, relevant rules and regulations and on the general principles of area classification. The competency of the person shall be relevant to the type of work to be undertaken. Appropriate continuing education or training shall be undertaken by the personnel on a regular basis.

Competency may be demonstrated in accordance with AS/NZS 4761, Competencies for working with electrical equipment for hazardous areas (EEHA), or equivalent training and assessment framework.

Commentary: Without exception, persons who intend to work with EEHA are to be appropriately competent to a level that is relevant to the particular works that are being undertaken – regardless of its position in the project cycle. In essence, whether a person is involved in the design, installation or maintenance stage, they must be able to demonstrate competency to ensure utmost safety measures are ensured. It is also important to note that as standards and regulations change and the various technologies involved advance, it is expected that persons continue to educate themselves to maintain their competency levels.



## **NHP MAKE HAZARDOUS AREAS EASIER...**

At NHP our aim is to provide a world class range of Hazardous Area solutions for the hazardous market and to ensure this is the case, we provide a range of value-add tools for our customers. From product selection through to expert advice, NHP make engineering a solution that meets your requirements easier than ever before.

For your next HAE project, experience the NHP difference.

### **Hazardous Area Training**

To ensure you and your colleagues are competent in working within Hazardous Areas, NHP also offer a range of training packages from 'lunch and learn' sessions to single day tailored awareness courses, and 5 day training courses with nationally recognised competencies. With the flexibility to offer courses both on site and at one of our 50+ branch locations throughout Australia, you can trust NHP to work with you to find a training option that works for you.

### **IECEx Certified Hazardous Area Workshop**

NHP supplies not only a range of Hazardous Area Equipment, but also, customer specific systems via our certified manufacturing and assembly workshop located at Laverton. In this workshop, accredited staff design, construct and inspect the Cortem range according to the requirements of IECEx certification. This allows for flexibility to produce custom solutions to suit your HAE requirements.

### **NHP Training University (NTU)**

If you want to increase your skill set but avoid lengthy lectures and the cost of further education, NTU (NHP Training University) is for you! With valuable training modules introduced regularly, NTU is FREE and designed to further your key industry knowledge.

The latest module looks at Hazardous Area Equipment and explains the basic principle of explosion protection from zone classification and explosion groups, to temperature classes and the different types of protection available.

### **HAE Technology Specialist Team**

Our Hazardous Area specialists have the experience and knowledge to apply HAE best practices across a broad range of industries including Food Manufacturing, Grain, Oil and Gas. The NHP Ex team have the 'know how' to develop and recommend solutions that provide value to our customers utilising NHP's ability to offer complete IECEx solutions delivered in industry best time frames.

If you'd like to speak to NHP's HAE Technology Specialist Team, simply call 1300 NHP NHP (Australia) or 0800 NHP NHP (New Zealand).

# LOCALLY STOCKED



## Locally stocked Hazardous Area LED lighting

NHP is pleased to release the EXEL-L series of increased safety, linear lighting fixtures, complementing the growing range of Hazardous Area LED lighting fixtures from NHP.

- IECEx certified - zones 1, 2 and 21, 22
- Reduce installation and maintenance costs
- Energy efficient
- Lighting designs available from certified Hazardous Area experts
- No UV emissions - no insect attraction
- Intrinsically safe optical radiation – (Ex op is)

NHP ELECTRICAL ENGINEERING PRODUCTS

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**NHP**

# Lighting

<b>Selection chart</b>	<b>14</b>
<b>Hazardous Area Linear Lights</b>	
EXEL-L LED Linear Lights	16
EXEL Fluorescent Linear Lights	18
EXEN Fluorescent Linear Lights	20
FLFE Fluorescent Linear Lights	21
<b>Hazardous Area Flood Lights</b>	
EVL LED Floodlights	23
EWL LED Floodlights	24
SLEE Floodlights	26
TIGER Floodlights	27
<b>Hazardous Area Pendant Lights</b>	
EVE Pendant Lights	28
EWAE Pendant Lights	29

## Item Type (Ordering information)

- I** Indent item (non refundable)
- A** Assembled to order (non refundable)
- K** A kit item which contains a number of parts (may contain indent items)
- Blank** Stocked



**FLOOD LIGHTING**



**PENDANT LIGHTING**



**EXIT LIGHTING**



**FLUORESCENT LIGHTING**



## Lighting

### Selection Chart



Description	Protection Technique	Zone 1	Zone 2	Zone 21	Zone 22	Group
<b>Cortem EXEL-L</b>						
LED linear light Long life, energy efficient LED tubes • 3 Year Warranty • Reduce installation and maintenance costs • 2500-5000 Lumens • Normal, Emergency and Exit signage options • Automatic isolating switch • Through Wiring • Reinforced fiberglass and polyester resin body with polycarbonate diffuser • IP66	Ex d w mb op is tb	✓	✓	✓	✓	IIC IIIC
<b>Cortem EXEL</b>						
Fluorescent linear light • 18 and 36 W Fluorescent tubes • Normal, Emergency and Exit signage options • Optional mounting methods • Through wiring • Automatic isolating switch • End of life switching off • Reinforced fiberglass and polyester resin body with polycarbonate diffuser • IP66	Ex d Ex e Ex td	✓	✓	✓	✓	IIC IIIC
<b>Cortem EXEN</b>						
Fluorescent linear light • 18 and 36 W Fluorescent tubes • Normal, Emergency and Exit signage options • Optional mounting methods • Through wiring • End of life switching off • Reinforced fiberglass and polyester resin body with polycarbonate diffuser • IP66	Ex nA Ex tb	-	✓	✓	✓	IIC IIIC
<b>Cortem FLFE</b>						
LED and Fluorescent linear light • 18, 36 and 58 W Fluorescent tubes • LED version 1850 - 5400 Lumens • Normal, Emergency and Exit signage options • Optional mounting methods • Aluminium alloy with toughened borosilicate glass • Ex e termination chamber • IP66	Ex de Ex tb	✓	✓	✓	✓	IIC IIIC

## Lighting

### Selection Chart

Description	Protection Technique	Zone 1	Zone 2	Zone 21	Zone 22	Group
<b>Cortem EVL</b>						
LED Highbay/Floodlight Long life, energy efficient LED technology • 5 Year Warranty • Reduce installation and maintenance costs • 3000 - 19,000 Lumens • Lens options (10°, 20°, 40° and 120°) • Aluminium alloy with toughened borosilicate glass • Ex e termination chamber • IP66	Ex de Ex tb	✓	✓	✓	✓	IIC IIIC
<b>Cortem EWL</b>						
LED Highbay/Floodlight Long life, energy efficient LED technology • 5 Year Warranty • Reduce installation and maintenance costs • 3700 - 17,000 Lumens • Lens options (10°, 20°, 40° and 120°) • Aluminium alloy with toughened borosilicate glass • Ex e termination chamber • IP66		✓	✓	✓	✓	IIC IIIC
<b>Cortem SLEE</b>						
Floodlight • 150, 250 and 400W • Copper-free aluminium body • Tempered glass cover • IP 65/66 • Different lamp options	Ex de Ex tb	✓	✓	✓	✓	IIC IIIC
<b>Cortem TIGER</b>						
Floodlight • 150, 250 and 400W • Copper-free aluminium body • Tempered glass cover • IP 65/66 • Different lamp options	Ex de Ex tb	✓	✓	✓	✓	IIC IIIC
<b>Cortem EVE</b>						
LED Pendant Light • Low glare - remote phosphore technology lens • Aluminium alloy with toughened borosilicate glass • Ex e termination chamber • Multiple mounting options • IP66	Ex de Ex tb	✓	✓	✓	✓	IIC IIIC
<b>Cortem EWAE</b>						
Metal halide, sodium vapour, mercury Vapor options- • 150W to 400W • Aluminium alloy with toughened borosilicate glass • Ex e termination chamber • Multiple mounting options • IP66	Ex de Ex tb	✓	✓	✓	✓	IIC IIIC



## Hazardous Area Linear Lights

### EXEL-L LED Linear Lights



#### Zones 1, 2 and 21, 22

##### IECEx CML 15.0044

Ex d e mb op is IIC T5 Gb

Ex tb IIIC T64°C Db

Ex d e mb op is IIC T6 Gb

Ex tb IIIC T49°C Db

IP66

#### Features and Benefits

- Long life, energy efficient LED tubes
- 3 Year warranty
- Reduced maintenance
- 4 x M20 Cable entries (3 x IECEx certified plugs supplied)
- Through wiring
- Gland earth continuity plates on both ends
- Vibration resistant
- Suitable for chemically aggressive and extreme environments

#### Product Selection

Refer to page 22 for bracket selection.

LED lamps included with fixture.

#### EXEL-L Standard Lights



EXEL215LAU

Lumens (lm)	#Lamps	(W max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2850	2	29	785 x 185 x 155	4.9	I	EXEL215LAU
5637	2	56	1370 x 185 x 155	9.2	I	EXEL230LAU

#### EXEL-L Standard and/or Emergency Lights

EXEL-L emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation.

Fitted with an internal battery and electronic inverter for use in emergency operation. The operating time under emergency operation, depending on requirements, can last from a minimum of 90 minutes to a maximum of 180 minutes.

Lumens (lm)	#Lamps	(W max)	H x W x D (mm)	Item Type	Catalogue No.
2850	2	29	785 x 185 x 155		EXEL215LEF4AU
5637	2	56	1370 x 185 x 155		EXEL230LEF4AU

#### EXEL-L Emergency Exit Lights

EXEL-L e1 emergency exit lights are an effective guidance tool, convey important messages, provide a clear, easy-to-follow directional system. EXEL-L emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation. Fitted with an internal battery and electronic inverter for use in emergency operation, the operating time under emergency operation depending on requirements can last from a minimum of 90 minutes to a maximum of 180 minutes.



EXEL215LEXIT24M

Lumens (lm)	#Lamps	H x W x D (mm)	Exit (direction)	Item Type	Catalogue No.
2850	2	785 x 185 x 155	Straight Through		EXEL215LEXIT24M
2850	2	785 x 185 x 155	Left		EXEL215LEXITL24M
2850	2	785 x 185 x 155	Right		EXEL215LEXITR24M

#### EXEL-L Accessories

EXEL-L spare parts and accessories which include kits for mounting, electronic ballasts, inverters and battery packs etc are available on request.

Description	Item Type	Catalogue No.
LED resin bounded tube for EXEL215LAU		LTT3250E
Ballast for EXEL215LAU		EB215L
Ballast for EXEL230LAU		EB230L
LED resin bounded tube for EXEL230LAU		LTT16350E

# NHP HAZARDOUS AREA LIGHTING DESIGN

NHP provides an extensive range of Hazardous Area LED lighting products and in-house lighting designs to improve efficiency by lowering energy consumption, minimising maintenance requirements and reducing installation costs, combined with our return on investment calculator.

To complement the product range, NHP can also assist with in-house lighting design through our team of expert personnel. With market leading experience and knowledge, this team can assess new or existing plants and design a tailored solution that improves lighting quality, decreases the number of fixtures required and can further reduce installation time utilising Ex-e junction boxes built into the fixture.



## Hazardous Area Linear Lights

### EXEL Fluorescent Linear Lights



#### Zones 1, 2 and 21, 22 IECEX CES 07.0001

Ex ed IIC T5

Ex tb T95°C

IP66

#### Ambient temp. / Temp. class / Max surface temp.

–40°C + 55°C / T5 / 95°C

#### Features and Benefits

- Body in black antistatic GRP (Glass Reinforced Polyester)
- 4 x M20 cable entries (3 x IECEx certified plugs supplied)
- Through wiring
- Earth continuity plates on both ends
- Vibration resistant
- EOL ballast (End Of Life)
- Internal white powder coated aluminum frame
- Electronic ballast and safety switch
- Suitable for chemically aggressive and extreme environments

#### Product Selection

Refer to page 22 for bracket selection.

Fluorescent lamps not included

#### EXEL Standard Lights



EXEL218AU1

#Lamps	Lamp (W max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2	18	785 x 185 x 155	5.3		EXEL218AU1
2	36	1370 x 185 x 155	7.9		EXEL236AU1

#### EXEL Standard and/or Emergency Lights

EXEL emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation.

Fitted with a Ni-Cd battery and electronic inverter for use in emergency operation. The operating time under emergency operation, depending on requirements, can last from a minimum of 90 minutes to a maximum of 180 minutes.



EXEL218EF4AU

#Lamps	Lamp (W max)	BattDschrg (hours)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2	18	2	785 x 185 x 155	7		EXEL218EF4AU
2	36	1.5	1370 x 185 x 155	9.6		EXEL236EF4AU

## EXEL Emergency Exit Lights

EXEL Emergency exit lights are an effective guidance tool, convey important messages, provide a clear, easy-to-follow directional system. EXEL emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation. Fitted with a Ni-Cd battery and electronic inverter for use in emergency operation. The operating time under emergency operation, depending on requirements, can last from a minimum of 90 minutes to a maximum of 180 minutes.

#Lamps	Lamp (W max)	BattDschrg (hours)	H x W x D (mm)	Weight (kg)	Exit (direction)	Item Type	Catalogue No.
2	18	2	785 x 185 x 155	5.5	Straight Through		EXEL218EXIT24M
2	18	2	785 x 185 x 155	5.5	Left	A	EXEL218EXITL24M
2	18	2	785 x 185 x 155	5.5	Right	A	EXEL218EXITR24M



EXEL218EXIT24M

## EXEL Accessories

EXEL spare parts and accessories which include kits for mounting, electronic ballasts, inverters and battery packs etc are available on request.

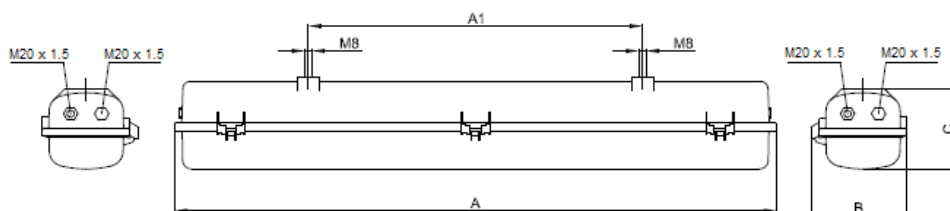
Description	Item Type	Catalogue No.
240V Ballast To Suit EXEL236.... Models (2X36W)	I	EB236/240
Inverter EXEL		EI-58



EB236/240

## Dimensions (mm)

Dimensions	Light fitting	
	18 W	36 W
A	785	1370
A1	420	720
B	185	185
C	155	155





## Hazardous Area Linear Lights

### EXEN Fluorescent Linear Lights

#### Zones 2 and 21, 22

#### IECEX CES 12.0010

Ex nA IIC T5/T4 Gc

Ex tb IIIC T65°C to T85°C Db

IP66

#### Ambient temp. / Temp. class / Max surface temp.

–40°C +40°C / T5/ 65°C

–40°C +50°C / T5/ 80°C

–40°C +55°C / T4/ 85°C

#### Features and Benefits

- Body in black antistatic GRP (Glass Reinforced Polyester)
- 4 x M20 cable entries (3 x IECEx certified plugs supplied)
- Through wiring
- Earth continuity plates on both ends
- Vibration resistant
- Protected opening system through sliding operated by a hexagonal-head tool
- EOL ballast (End Of Life)
- Internal white powder coated aluminum frame
- Electronic ballast and safety switch
- Suitable for chemically aggressive and extreme environments

#### Product Selection

Refer to page 22 for bracket selection.

Fluorescent lamps not included

#### EXEN Standard Lights



EXEN218AU

#Lamps	Lamp (W max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2	18	785 x 185 x 155	4		EXEN218AU
2	36	1370 x 185 x 155	7.3		EXEN236AU

#### EXEN Normal and Emergency Lights

EXEN emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation.

Fitted with a Ni-Cd battery and electronic inverter for use in emergency operation, the operating time under emergency operation depending on requirements and can last from a minimum of 90 minutes to a maximum of 180 minutes.



EXEN218EF4AU

#Lamps	Lamp (W max)	BattDschrg (hours)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2	18	2	785 x 185 x 155	8.3		EXEN218EF4AU
2	36	1.67	1370 x 185 x 155	7.8		EXEN236EF4AU

#### EXEN Emergency Exit Lights

EXEN emergency exit lights are an effective guidance tool, convey important messages, provide a clear, easy-to-follow directional system.

EXEN emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation.

Fitted with a Ni-Cd battery and electronic inverter for use in emergency operation, the operating time under emergency operation depending on requirements and can last from a minimum of 90 minutes to a maximum of 180 minutes.



EXEN218EXIT24M

#Lamps	Lamp (W max)	BattDschrg (hours)	H x W x D (mm)	Weight (kg)	Exit (direction)	Item Type	Catalogue No.
2	18	2	785 x 155 x 185	8.3	Straight Through		EXEN218EXIT24M
2	18	2	785 x 155 x 185	8.3	Left	A	EXEN218EXITL24M
2	18	2	785 x 155 x 185	8.3	Right	A	EXEN218EXITR24M

## Hazardous Area Linear Lights

### FLFE Fluorescent Linear Lights

#### Zones 1, 2 and 21, 22

#### IECEX CES 11.0021

Ex de IIC T6

Ex tb T70°C to T80°C

IP66

#### Ambient temp. / Temp. class / Max surface temp.

-20°C +40°C / T6/ 70°C

-20°C +50°C / T6/ 75°C

-20°C +55°C / T6/ 80°C

#### Features and Benefits

- Shockproof borosilicate glass tube
- Ex e internal terminal junction box which allows connection with an Ex e cable gland (not barrier)
- Easy replacement of lamps
- Less wind resistance and less accumulation of dust
- Expanding range of LED models, including battery backup and emergency upon request
- EOL ballast (End Of Life)
- 24V DC available upon request

#### Product Selection

Refer to page 22 for bracket selection.

LED models supplied with lamps

Fluorescent lamps not included



#### FLFE/L Standard LED Lights

Pwr Typ (W)	Lumens (lm)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
22	4300	1325 x 142 x 197	9		FLFE222L

#### FLFE Standard Lights

#Lamps	Lamp (W max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2	18	725 x 142 x 197	5.2	I	FLFE-218
2	36	1325 x 142 x 197	7.5		FLFE-236
2	58	1625 x 142 x 197	10	I	FLFE-258



FLFE-218

#### FLFE Standard and / or Emergency Lights

FLFE emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation.

Fitted with a Ni-Cd battery and electronic inverter for use in emergency operation. The operating time under emergency operation, depending on requirements, can last from a minimum of 90 minutes to a maximum of 180 minutes.

#Lamps	Lamp (W max)	BattDschrg (hours)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
2	18	2	725 x 142 x 197	6.1	I	FLFE-218EF4
2	36	1.5	1325 x 142 x 197	9	I	FLFE-236EF4



FLFE-218EF4

#### FLFE Emergency Exit Lights

FLFE emergency exit lights are an effective guidance tool, convey important messages, provide a clear, easy-to-follow directional system.

FLFE emergency series can operate in maintained or non-maintained operation as standard with use of terminals looping during installation.

Fitted with a Ni-Cd battery and electronic inverter for use in emergency operation. The operating time under emergency operation, depending on requirements, can last from a minimum of 90 minutes to a maximum of 180 minutes.

#Lamps	Lamp (W max)	BattDschrg (hours)	H x W x D (mm)	Weight (kg)	Exit (direction)	Item Type	Catalogue No.
2	18	2	725 x 142 x 197	6.1	Straight Through	A	FLFE218EXIT24M
2	18	2	725 x 142 x 197	6.1	Left	A	FLFE218EXITL24M
2	18	2	725 x 142 x 197	6.1	Right	A	FLFE218EXITR24M



FLFE218EXIT24M

## Hazardous Area Linear Lights

### Linear Light Fitting Mounting Brackets

Mounting brackets suitable for the EXEL-L, EXEL, EXEN and FLFE range of Cortem fluorescent light fixtures.

#### Features and Benefits

- 1 Bracket required per light fixture



Description	Item Type	Catalogue No.
20mm Inside Diameter Galvanised Steel Eye Bolt	K	GOF-8/K
Pole Mount Bracket Kit For Fluorescent Lighting Fixtures (EXEL, EXEN and FLFE Series) C/W Nuts And Washers	K	G-0480/K
Ceiling (Low-Profile) Mount Bracket Kit For Fluorescent Lighting Fixtures (EXEL, EXEN and FLFE Series) C/W Nuts And Washers	K	G-244/K
Ceiling (High-Profile) Mount Bracket Kit For Fluorescent Lighting Fixtures (EXEL, EXEN and FLFE Series) C/W Nuts And Washers	K	G-263/K
Wall (45Deg) Mount Bracket Kit For Fluorescent Lighting Fixtures (EXEL, EXEN and FLFE Series) C/W Nuts And Washers	K	G-258/K



G258K



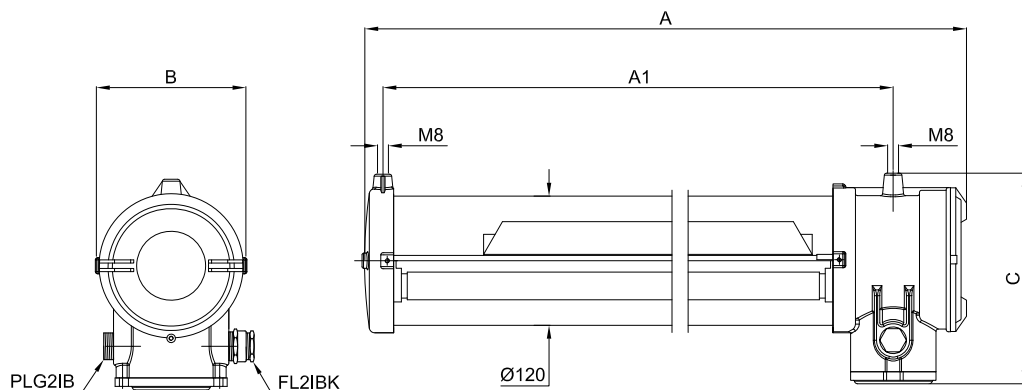
G244K



G0480K

#### Dimensions (mm)

A	A1	B	C	Catalogue No.
725	640	135	190	FLFE218
1325	1240	135	190	FLFE236
725	640	135	190	FLFE218EF4
1325	1240	135	190	FLFE236EF4
1325	1240	135	190	FLFE222L



## Hazardous Area Flood Lights

### EVL LED Floodlights

#### Zones 1, 2 and 21, 22

#### IECEx ITS 14.0061

Ex de IIC Tx Gb

Ex tb IIIC Tx Db

IP66

#### EVL LED Floodlights

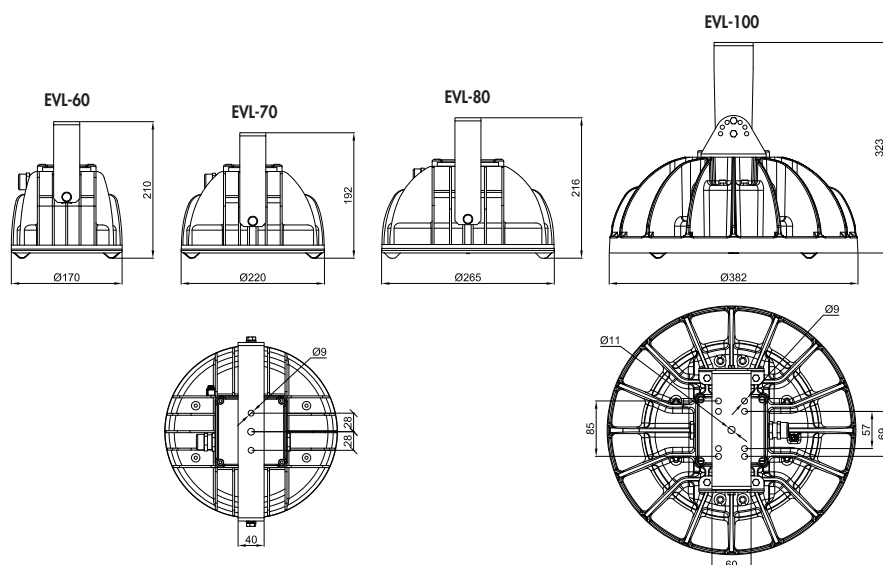
The new LED lighting fixtures EVL series has been developed with the aim of redefining the concepts of compactness, versatility and ease of installation thanks to the new LED lighting system "COB" (ChipOnBoard).

This technology obtains high values of lumen output and the installation at low heights, without the risk of disturbing the operator.

#### Product Line Feature and Benefits

- 5 year warranty
- Lighting designs available, contact NHP for further information
- High efficiency with low power usage compared to traditional light sources
- Operating life of 100,000 hours (20 years for 12 hours a day) reducing maintenance to an estimated 10% of the cost of traditional lighting systems
- 2x ISO M20 entries. Supplied with 1x PLG1IB Plug and 1 REV1IB cable gland
- Ex e internal terminal junction box which allows connection with an Ex e cable gland (not barrier)
- Very low operating temperature
- Excellent colour rendering (CRI), a measure of the quality of reproduction of colour's compared to natural sunlight.
- Shockproof and vibration resistant with toughened borosilicate glass
- Aluminum housing is designed with a finned body to efficiently dissipate heat and minimise dust accumulation

Pwr Typ (W)	Lumens (lm)	Ue (V AC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
27	3140	120 - 277	170 x 170 x 210	3.5	I	<b>EVL60</b>
53	6564	120 - 277	220 x 220 x 192	5.2	I	<b>EVL70</b>
86	9732	220 - 240	265 x 265 x 216	7.2	I	<b>EVL80</b>
154	19125	100 - 277	385 x 385 x 250	11.2	I	<b>EVL100</b>



## Hazardous Area Flood Lights

### EWL LED Floodlights



#### Zones 1, 2 and 21, 22

#### IECEX ITS 11.0018

Ex d e IIC T5 Gb

Ex tb IIC T100°C Db

IP66

Ambient temp. / Temp. class / Max surface temp.

–40°C +60°C / T5 / T100°C

#### Features and Benefits

- Lighting designs available, contact NHP for further information
- High efficiency with low power usage compared to traditional light sources
- Operating life of 100,000 hours (20 years for 12 hours a day) reducing maintenance to an estimated 10% of the cost of traditional lighting systems
- 2x ISO M20 entries. Supplied with 1x PLG1IB Plug and 1 REV1IB Cable Gland
- Ex e internal terminal junction box which allows connection with an Ex e cable gland (not barrier)
- Very low operating temperature
- Excellent colour rendering (CRI), a measure of the quality of reproduction of colour's compared to natural sunlight.
- Lens options (10°, 20°, 40° for narrow or wider light beams with higher light intensity, standard 120° beam angle)
- Shockproof and vibration resistant with toughened borosilicate glass
- Aluminium housing is designed with a finned body to efficiently dissipate heat and minimise dust accumulation

#### EWL LED Floodlights

The EWL series, utilises the latest in LED technology and drivers based on high-reliability products manufactured by one of the world's leading manufacturers.

The distinctiveness of these floodlights, available with optics of different angles (10°, 20°, 40°, 120°), is in their rigid body that is able to withstand vibrations designed for the harshest environments.

These compact, extremely efficient floodlights are Ex de certified and are able to perform easily in extreme climates and environments.

#### EWL70 LED Floodlights

##### AC Supply

Pwr Typ (W)	Lumens (lm)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
40	3700	198 - 264	-	270 x 215 x 340	6.5		EWL70



EWL70

##### DC Supply

Pwr Typ (W)	Lumens (lm)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
40	3700	-	21.6 - 26.4	270 x 215 x 340	6.5	I	EWL7024



EWL7024

## EWL80 LED Floodlights

### AC Supply

Pwr Typ (W)	Lumens (lm)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
65	6050	90 - 264	-	292 x 260 x 343	8.6		EWL-80



EWL-80

### DC Supply

Pwr Typ (W)	Lumens (lm)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
65	6050	-	21.6 - 26.4	292 x 260 x 343	8.6	I	EWL8024



EWL8024

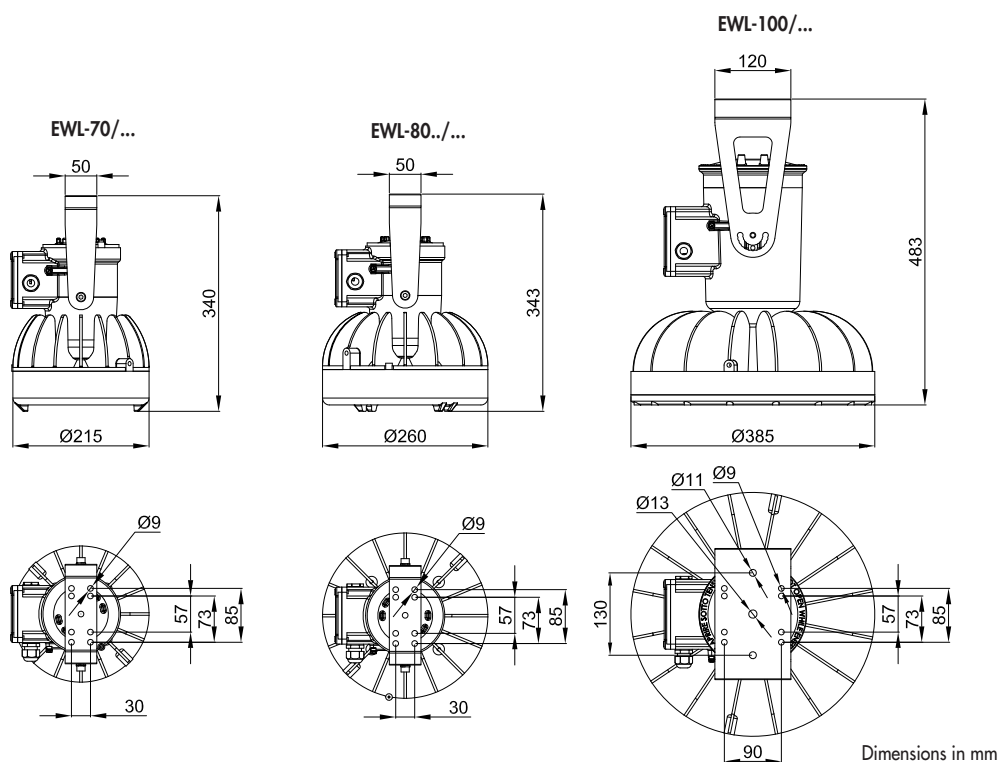
## EWL100 LED Floodlights

### AC Supply

Pwr Typ (W)	Lumens (lm)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
180	17000	90 - 264	-	407 x 385 x 483	18.4	I	EWL10040
180	17000	90 - 264	-	407 x 385 x 483	18.4		EWL100



EWL10040





## Hazardous Area Flood Lights

### SLEE Floodlights

#### Zones 1, 2 and 21, 22

#### IECEX TSA 08.0011

Ex de IIB + H2 T2 / T3

Ex tb T188°C / 198°C Db

IP65/66

Ambient temp. / Temp. class / Max surface temp.

20°C to +40°C / T3 / 188°C

20°C to +50°C / T2 / 198°C

#### Features and Benefits

- IP67
- 150W, 250W and 400W for varying light output
- Low copper content aluminum body ensure better strength and corrosion resistant
- Shock and high temperature resistant tempered glass cover
- Easy installation, both vertical and horizontal, because of mobile supporting bracket
- Shock and high temperature resistant frontal tempered glass

#### Product Selection

Lamps not included with fixture.

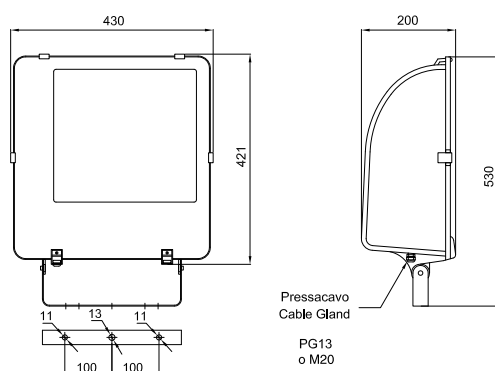
#### SLEE Fixtures

- Suitable for high pressure sodium vapour and metal halide lamps up to 400W
- Easy installation, both vertical and horizontal, because of mobile supporting bracket
- Low copper content aluminium body ensure better strength and corrosion resistant
- Strong and durable anodised aluminium reflector
- Shock and high temperature resistant frontal tempered glass
- Ral 7035 epoxy coating
- Neoprene sealings maintains flexibility over a wide temperature range



SLEE-40IM5

Lamp (type)	Lamp (W max)	Ue (V AC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
Metal Halide	250	- 230	296 x 482 x 480	14.85	I	SLEE-40IM5
Metal Halide	400	- 230	296 x 482 x 480	20.38	I	SLEE-40IM6



#### Dimensions (mm)

Lamp type	Lamp power	Reflector	Weight (kg)	Catalogue No.
Metal halide	250 W	Symmetric	11.3	TIGER-250HA
Metal halide	400 W	Symmetric	13	TIGER-400HA

#### Spare parts

Lamp type	Catalogue No.
Tempered glass cover	G-505
Lampholder	PORT E-40

## Hazardous Area Flood Lights

### TIGER Floodlights

#### Zones 2 and 21, 22

#### IECEx ITS 12.0004X

Ex nR IICT3 / T2 Gc

Ex tc IIIC T174°C / 210°C Dc

IP66

Ambient temp. / Temp. class / Max surface temp.

-50°C to +45°C / T3 / 174°C

-50°C to +60°C / T3 / 194°C

-20°C to +45°C / T3 / 195°C

-20°C to +60°C / T2 / 210°C

#### Features and Benefits

- Tempered glass cover
- Fast maintenance
- Simple wiring thanks to the use of marked terminals
- Anti-corrosion aluminium clips
- Flat glass anti-light pollution
- Suitable for lamps up to 400W
- Symmetrical/asymmetrical reflectors available

#### Product Selection

Lamps not included with fixture.



1

#### TIGER Light Fixtures

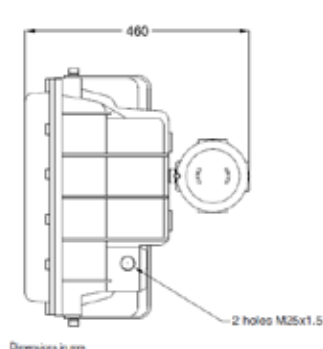
Lamp (type)	Lamp (W max)	Ue (V AC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
Metal Halide	250	- 230	530 x 430 x 200	11.3	I	TIGER-250HA
Metal Halide	400	- 230	530 x 430 x 200	13	I	TIGER-400HA

#### Dimensions (mm)

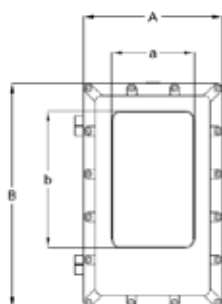
A	B	C	a	b	Catalogue No.
296	482	480	174	291	SLEE-40I
296	458	355	174	266	SLEE-25N4



TIGER-250HA



SLEE-40



SLEE-40 and SLEE-25

Lamp type	Lamp power	Lamp holder	Temperature class	Max. surface temperature C	Weight (kg)	Catalogue No.
Metal halide	250 W	E40	T3 / T3	200	14.85	SLEE-40IM5
Metal halide	400 W	E40	T3 / T2	200 / 300	20.38	SLEE-40IM6
High pressure sodium	400 W	E40	T4 / T3	135/200	14.85	SLEE-25N4



## Hazardous Area Pendant Lights

### EVE Pendant Lights

#### Zones 1, 2 and 21, 22

#### IECEX CES 07.0004

Ex d IIC T6 / T5 / T4 / T3 / T2

Ex de IIC T6 / T5 / T4 / T3 / T2

Ex tD A21

T85°C to T220 °C

IP66

Ambient temp. / Temp. class / Max surface temp.

–40°C +40°C / T5 / 65°C

–40°C +55°C / T5 / 80°C

–40°C +60°C / T4 / 85°C

#### Features and Benefits

- LED version available with remote phosphor technology
- Suitable for indoor and outdoor installation
- Indirect cable entry is allowed
- Aluminium alloy body with low copper content ensures better strength and corrosion resistance
- Internal/external stainless steel earth screw
- Borosilicate glass globe has excellent thermal and mechanical properties
- Wiring through silicone rubber cables resistant up to 200°C
- Neoprene seals resistant to acids and hydrocarbons
- RAL 7035 grey epoxy powder coating for harsh environment

#### EVE Series



EVE-5050L

Lamp (type)	Lamp (W max)	Ue (V AC)	Ue (V DC)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
LED	8	230		260 x 150 x 150	3	I	EVE-5050L
LED	13	230		322 x 170 x 170	3.9	I	EVE-5060L
LED	17	230		322 x 170 x 170	3.9	I	EVE-5060L1
LED	13		24	322 x 170 x 170	3.9	I	EVE5060L124

## Hazardous Area Pendant Lights

### EWAE Pendant Lights

#### Zones 1, 2 and 21, 22 IECEX CES 07.0004

Ex d IIC T6 / T5 / T4 / T3 / T2  
Ex de IIC T6 / T5 / T4 / T3 / T2  
Ex tD A21  
T85°C to T220 °C  
IP66

Ambient temp. / Temp. class / Max surface temp.

–40°C +40°C / T5 / 65°C

–40°C +55°C / T5 / 80°C

–40°C +60°C / T4 / 85°C

#### Features and Benefits

- Suitable for indoor and outdoor installation
- Indirect cable entry is allowed
- Aluminium alloy body with low copper content ensure better strength and corrosion resistant
- Internal/external stainless steel earth screw
- Borosilicate glass globe has excellent thermal and mechanical properties
- Wiring through silicone rubber cables resistant up to 200°C
- Neoprene seals resistant to acids and hydrocarbons
- RAL 7035 grey epoxy powder coating



#### EWAE Series, Pendant Mount

##### 80 Size

Lamp (type)	Lamp (W max)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
Metal Halide	250	- 230	-	643 x 235 x 235	10.1	I	EWAE-5080IM5



EWAE-5080IM5

##### 100 Size

Lamp (type)	Lamp (W max)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
Metal Halide	400	- 230	-	710 x 265 x 265	16.3	I	EWAE-50100IM6



EWAE-50100IM6

#### EWAES Series, Ceiling Mount

##### 100 Size

Lamp (type)	Lamp (W max)	Ue (V AC, min - max)	Ue (V DC, min - max)	H x W x D (mm)	Weight (kg)	Item Type	Catalogue No.
Metal Halide	400	- 230	-	710 x 265 x 265	16.3	I	EWAES-50100IM6



EWAES-50100IM6



Reflector



Dome Reflector



30° Inclined Reflector

Reflectors and other mounting options available upon request

# 2 Control Station and Junction Boxes

<b>Selection Chart</b>	<b>32</b>
<b>Hazardous Area Control Stations</b>	
Cortem EFDC (Ex d) Control Stations	<b>34</b>
Standard Control Station	<b>34</b>
<b>Hazardous Area Junction Boxes</b>	
S Series (Ex d) Junction Boxes	<b>38</b>
SA (Ex e) Junction Boxes	<b>39</b>

**Item Type (Ordering information)**

- I** Indent item (non refundable)
- A** Assembled to order (non refundable)
- K** A kit item which contains a number of parts (may contain indent items)
- Blank** Stocked



## TERMINAL AND JUNCTION BOXES



## COMMAND AND CONTROL OPERATORS








## CONTROL STATIONS



## Hazardous Area Control Stations and Junction boxes

### Selection Chart

Description	Protection Technique	Zone 1	Zone 2	Zone 21	Zone 22	Group
<b>Hazardous Area Control Stations</b>						
<b>Cortem EFDC</b>						
 <ul style="list-style-type: none"> <li>Aluminium alloy enclosure</li> <li>Up to 4 operators on a single unit</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotations</li> </ul>	Ex d Ex tb	✓	✓	✓	✓	IIC IIIC
<b>Hazardous Area Control Stations</b>						
<b>Cortem SA...</b>						
 <ul style="list-style-type: none"> <li>Available in GRP, aluminum or stainless steel bodies</li> <li>Up to 3 operators in standard configurations</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotations</li> </ul>	Ex e Ex tb	✓	✓	✓	✓	IIC IIIC
						
<b>Hazardous Area Junction Boxes</b>						
<b>Cortem S...</b>						
 <ul style="list-style-type: none"> <li>Available in aluminum or stainless steel bodies</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotation</li> </ul>	Ex d Ex e Ex ia Ex tb	✓	✓	✓	✓	IIC IIIC
<b>Hazardous Area Junction Boxes</b>						
<b>Cortem SA...</b>						
 <ul style="list-style-type: none"> <li>Available in GRP, aluminum or stainless steel bodies</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotation</li> </ul>	Ex e Ex tb Ex e ia Ex tb ia	✓	✓	✓	✓	IIC IIIC



# NTU takes on Hazardous Area Equipment!

If you haven't already taken advantage of the NHP Training University (NTU) training program, don't wait any longer!

The Hazardous Area Equipment module explains the basic principle of explosion protection from area classifications to temperature classes and the different types of protection methods available.

When it comes to selecting Hazardous Area Equipment for your specific installation requirements, with NTU you'll be covered.

## Other NTU modules now available include:

- Contactors and Overloads
- Motor Starters and Controllers
- NHP Smartphone Apps: Tradie Tools on the Go
- Fundamentals of Electricity
- Fundamentals of Electrical Equipment
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## Hazardous Area Control Stations

### Cortem EFDC (Ex d) Control Stations



**Zones 1, 2 and 21, 22**  
**IECEX TSA 6.0009**  
 Ex d IIC T6  
 Ex tD A21 T85°C  
 IP 65

EFDC series control stations are suitable for the signalling and the control of equipment installed on-board machines or at distance. They are used in the chemical, petrochemical and pharmaceutical industries and in any other places where an explosion-proof installation is required.



EFDC21EMR

#### EFDC Series

#operators	Position 1	Item Type	LDC	Catalogue No.
1	E-Stop, Mushroom Head, Twist to Release, Red, 1 NO + 1 NC		NP2102D	EFDC21EMR

## Hazardous Area Control Stations

### Standard Control Station



**Zones 1, 2 and 21, 22**  
**IECEX CES 11.0032**  
 Ex de IIC T6 or T5 Gb  
 Ex tb IIIC T85°C or T100°C Db  
 IP66  
 Ambient Temp. / Temp. Class / Max Surface Temp.  
 - 40°C + 40°C / T6 / T85°C  
 - 40°C + 55°C / T5 / T100°C

#### Features and Benefits

- Available in GRP, aluminum or stainless steel bodies
- Up to 3 operators in standard configurations
- Fully customisable options, contact NHP for a quote today
- Drawings can be sent directly to NHP for quotation
- Can be drilled and assembled by the NHP IECEX workshop according to customers' specification and in accordance with certification
- More sizes available upon request, anti-condensation paint available upon request.
- **Enclosures cannot be supplied blank**

#### Product Selection

To determine cable entries, refer to suffix of part number; For example P12RZ(01):

- 01 – 1 x M20 Bottom
- 02 – 1 x M25 Bottom
- 09 – 2 x M20 Bottom
- 11 – 1 x M20 Top and Bottom
- 22 – 1 x M25 Top and Bottom

## P - GRP Series

The P series control stations are assembled in enclosures made of polyester. They are designed according to increased safety Ex e or dust protection Ex tb and can be equipped with the certified components like; pilot LED, contact blocks, command and signalling actuators series, terminal blocks, instruments series etc.

Position 1 (operator)	Position 1 (contacts)	Position 2 (operator)	Position 2 (contacts)	Position 3 (operator)	Position 3 (contacts)	Item Type	Catalogue No.
Pushbutton, Guarded/Booted, Momentary, Black	1 NO + 1 NC					A	P1-1NZ-01
E-Stop, Mushroom Head, Twist to Release, Red	1 NC						P1-2RW-01
E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC					A	P1-2RZ-01
Selector Switch, Short Handle, 2-Position, Rotate, Black	2 NO					A	P1-5Z1-11
Selector Switch, Short Handle, 2-Position, Rotate, Black	1 NO + 1 NC					A	P1-5Z-01
E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC					A	P1-2RZ-01-G
E-Stop, Mushroom Head, Twist to Release, Red	2 NC					A	P1-2RY-09
Pushbutton, Guarded/Booted, Momentary, Green	1 NO	Pushbutton, Guarded/ Booted, Momentary, Red	1 NC			A	P2-1GV-1RW-01
Pushbutton, Guarded/Booted, Momentary, Green	1 NO	Pushbutton, Guarded/ Booted, Momentary, Red	1 NC				P21GV1RW09
Pushbutton, Guarded/Booted, Momentary, Green	1 NO	E-Stop, Mushroom Head, Twist to Release, Red	1 NC			A	P2-1GV-2RW-01
Pushbutton, Guarded/Booted, Momentary, Green	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC			A	P2-1GZ-2RZ-01-P
Pushbutton, Guarded/Booted, Momentary, Green	1 NO + 1 NC	Pushbutton, Guarded/ Booted, Momentary, Red	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC	A	P3-1GZ-1RZ-2RZ-02
Pushbutton, Guarded/Booted, Momentary, Green	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC	Selector Switch, Short Handle, 3-Position, Rotate, Black	2 NO	A	P3-1GZ-2RZ-51C-02



P1-2RZ-01

Configuration	Enclosure
Single gang	SA111108
Double gang	SA171108
Triple gang	SA301410

Dimensional information found on pg. 49

## SA - Aluminium Series

The SA series control stations are assembled in enclosures made of aluminium. They are designed according to increased safety Ex e or dust protection Ex tb and can be equipped with the certified components like; pilot LED, contact blocks, command and signalling actuators series, terminal blocks, instruments series etc.



Position 1 (operator)	Position 1 (contacts)	Position 2 (operator)	Position 2 (contacts)	Position 3 (operator)	Position 3 (contacts)	Item Type	Catalogue No.
Pushbutton, Guarded/ Booted, Momentary, Black	1 NO + 1 NC					A	A1-1NZ-01
E-Stop, Mushroom Head, Twist to Release, Red	1 NC					A	A1-2RW-01
E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC						A12RZ01
E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC					A	A12RZ02
E-Stop, Mushroom Head, Twist to Release, Red	2 NC					A	A1-2RY-09
Selector Switch, Short Handle, 2-Position, Rotate, Black	2 NO					A	A1-52I-01
Selector Switch, Short Handle, 2-Position, Rotate, Black	2 NO					A	A1-52I-09
Selector Switch, Short Handle, 2-Position, Rotate, Black	2 NO					A	A1-52I-11
E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC					A	A1-2RZ-01-G
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO	Pushbutton, Guarded/Booted, Momentary, Red	1 NC			A	A2-1GV-1RW-01
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO	Pushbutton, Guarded/Booted, Momentary, Red	1 NC				A21GV1RW09
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO	E-Stop, Mushroom Head, Twist to Release, Red	1 NC			A	A2-1GV-2RW-01
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC			A	A2-1GZ-2RZ-01-P
Selector Switch, Short Handle, 2-Position, Rotate, Black	2 NO	Selector Switch, Short Handle, 2-Position, Rotate, Black	2 NO			A	A2-52I-52I-01
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO + 1 NC	Pushbutton, Guarded/Booted, Momentary, Red	1 NO + 1 NC	Pilot Light, Green		A	A31GZ1RZ4G222
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO + 1 NC	Pushbutton, Guarded/Booted, Momentary, Red	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC	A	A3-1GZ-1RZ-2RZ-02
Pushbutton, Guarded/ Booted, Momentary, Green	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC	Selector Switch, Short Handle, 3-Position, Rotate, Black	2 NO	A	A3-1GZ-2RZ-51C-02

Configuration	Enclosure
Single gang	SA111108P
Double gang	SA171108P
Triple gang	SA301410P

Dimensional information found on pg. 49

Position 1 (operator)	Position 1 (contacts)	Position 2 (operator)	Position 2 (contacts)	Position 3 (operator)	Position 3 (contacts)	Item Type	Catalogue No.
Pushbutton, Guarded/Booted, Momentary, Green	1 NO + 1 NC	Pushbutton, Guarded/ Booted, Momentary, Red	1 NO + 1 NC	Pilot Light, Green		A	A31GZ1RZ4G222
Pushbutton, Guarded/Booted, Momentary, Green	1 NO + 1 NC	Pushbutton, Guarded/ Booted, Momentary, Red	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC	A	A3-1GZ-1RZ-2RZ-02
Pushbutton, Guarded/Booted, Momentary, Green	1 NO + 1 NC	E-Stop, Mushroom Head, Twist to Release, Red	1 NO + 1 NC	Selector Switch, Short Handle, 3-Position, Rotate, Black	2 NO	A	A3-1GZ-2RZ-51C-02



### SS - Stainless Steel Series

The SS series control stations are assembled in enclosures made of 316 stainless steel. They are designed according to increased safety Ex e or dust protection Ex tb and can be equipped with the certified components like; pilot LED, contact blocks, command and signalling actuators series, terminal blocks, instruments series etc.

Position 1 (operator)	Position 1 (contacts)	Item Type	Catalogue No.
Twist to Release, Red	2 NC		S12RY01



Configuration	Enclosure
Single gang	SA111108SS
Double gang	SA171108SS

Dimensional information found on pg. 50

Fully customisable options available call NHP

## Hazardous Area Junction Boxes

### S Series (Ex d) Junction Boxes



#### Zones 1, 2 and 21, 22

#### IECEX CES 14.0018X

Ex d IIC T... Gb

Ex e IIC T... Gb

Ex la IIC T... Gb

Ex tb IIIC T°C Db

IP66/67

#### Features and Benefits

- Available in aluminum or stainless steel bodies
- Fully customisable options, contact NHP for a quote today
- Drawings can be sent directly to NHP for quotation
- Can be drilled and assembled by the NHP IECEx workshop according to customers' specification and in accordance with certification
- **Enclosures cannot be supplied blank**

### SF Series (Ex d) Junction Boxes



SFX141I

Terminals (qty)	Earth Term (qty)	Cable Entries	Ø Diameter (mm)	Weight (kg)	Item Type	Catalogue No.
6	2	4 x M20	90	0.3		SFX141I
6	2	4 x M20	130	0.6		SFX161I
6	2	4 x M25	130	0.6	I	SFX261I

## Hazardous Area Junction Boxes

### SA (Ex e) Junction Boxes

#### Zones 1, 2 and 21, 22

#### IECEX CES 13.0001

Ex e IIC T6 or T5 Gb

Ex tb IIC T85° or T100° Db

Ex e ia IIC T6 or T5 Gb

Ex tb ia IIC T85°C or T100°C Db

IP66

Ambient Temp. / Temp. Class / Max Surface Temp.

- 50°C + 40°C / T6 / T85°C

- 50°C + 55°C / T5 / T100°C



### GRP Junction Boxes

The junction box series consists of enclosures made in GRP with Ex e and Ex tb protection for increased safety. There are six terminals as well as two earthing terminals 4 mm<sup>2</sup> and cable entries are managed by 4xM20-2 plugs. Alternative terminal arrangements, sizes and numbers are available upon request.

Terminals (qty)	Earth Term (qty)	Cable Entries	H x W x D (mm)	Item Type	Catalogue No.
6	2	4 x M20	110 x 110 x 83		PJB164420



PJB164420

### Aluminium Junction Boxes

The junction box series consists of enclosures made in aluminium with Ex e and Ex tb protection for increased safety. There are six terminals as well as two earthing terminals 4 mm<sup>2</sup> and cable entries are managed by 4xM20-2 plugs. Alternative terminal arrangements, sizes and numbers are available upon request.

Terminals (qty)	Earth Term (qty)	Cable Entries	H x W x D (mm)	Item Type	Catalogue No.
6	2	4 x M20	110 x 110 x 85		A-JB-164-420



A-JB-164-420

### Stainless Steel Junction Boxes

The junction box series consists of enclosures made in stainless steel with Ex e and Ex tb protection for increased safety. There are six terminals as well as two earthing terminals 4 mm<sup>2</sup> and cable entries are managed by 4xM20-2 plugs. Alternative terminal arrangements, sizes and numbers are available upon request.

Terminals (qty)	Earth Term (qty)	Cable Entries	H x W x D (mm)	Item Type	Catalogue No.
6	2	4 x M20	120 x 120 x 80	A	SJB164420
9	2	4 x M20	147 x 147 x 110	A	SJB194420



SJB164420

# 3 Custom Enclosures

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Cortem (Ex e) Custom Assemblies	49
Command and Control Operators	50

**Item Type (Ordering information)**

**I** Indent item (non refundable)  
**A** Assembled to order (non refundable)  
**K** A kit item which contains a number of parts (may contain indent items)  
**Blank** Stocked



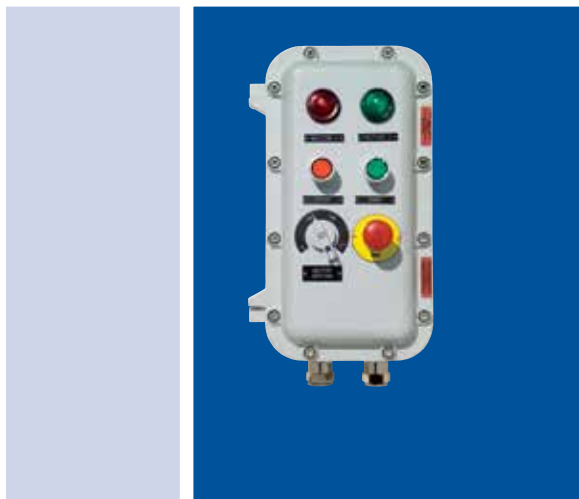
## TERMINAL AND JUNCTION BOXES



## COMMAND AND CONTROL OPERATORS



## MOTOR STARTERS



## CUSTOM ASSEMBLIES



## Hazardous Area Custom Enclosures

### Selection Chart

Description	Protection Technique	Zone 0	Zone 1	Zone 2	Zone 20	Zone 21	Zone 22	Group
<b>Hazardous Area Custom Enclosures</b>								
<b>Cortem Ex d Custom Assemblies</b>								
<b>Cortem EJB</b>								
<ul style="list-style-type: none"> <li>Available in aluminum or stainless steel bodies</li> <li>Glass window available</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotation</li> </ul>	Ex d [ia] Ex tb [ia]		✓	✓		✓	✓	IIC IIIC
<b>Hazardous Area Motor Starters</b>								
<ul style="list-style-type: none"> <li>Cast aluminium housing or Stainless Steel</li> <li>VSDs</li> <li>Soft Starters</li> <li>DOL, Star-delta and reverse starters</li> <li>Glass window available</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotation</li> </ul>	Ex d Ex tb		✓	✓		✓	✓	I IIC IIIC
<b>Cortem GUB</b>								
<ul style="list-style-type: none"> <li>Available in aluminum bodies</li> <li>Glass window available</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotation</li> </ul>	Ex d Ex tD		✓	✓		✓	✓	IIC IIIC
<b>Cortem CCA</b>								
<ul style="list-style-type: none"> <li>Available in aluminum bodies</li> <li>Fully customisable options, contact NHP for a quote today</li> <li>Drawings can be sent directly to NHP for quotation</li> </ul>	Ex d Ex tD		✓	✓		✓	✓	IIC IIIC
<b>Ex d Operators</b>								
<ul style="list-style-type: none"> <li>Cortem M0...</li> <li>Emergency Stops</li> <li>Pushbuttons</li> <li>Indicator Lamps</li> <li>Mechanical Operators</li> </ul>	Ex d Ex tD		✓	✓		✓	✓	IIC IIIC

## Hazardous Area Custom Enclosures

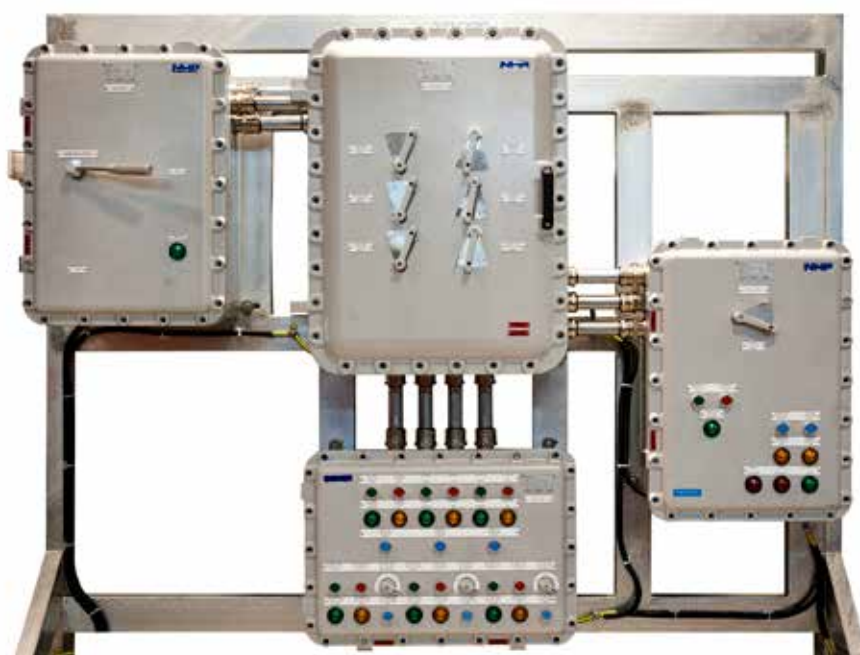
### Selection Chart

Description	Protection Technique	Zone 0	Zone 1	Zone 2	Zone 20	Zone 21	Zone 22	Group
<b>Cortem Ex e Custom Assemblies</b>								
<b>Cortem SA...P</b>								
• Glass reinforced Polyester Housing	Ex e [ia]	✓	✓	✓	✓	✓	✓	IIC
• Fully customisable options	Ex tb [ia]							IIIC
• Large range of operators, indicators and accessories								
<b>Cortem SA...</b>								
• Aluminium Housing	Ex e [ia]	✓	✓	✓	✓	✓	✓	IIC
• Fully customisable options	Ex tb [ia]							IIIC
• Large range of operators, indicators and accessories								
<b>Cortem SA...SS</b>								
• Stainless Steel Housing	Ex e [ia]	✓	✓	✓	✓	✓	✓	IIC
• Fully customisable options	Ex tb [ia]							IIIC
• Large range of operators, indicators and accessories								
<b>Ex e Operators</b>								
• Cortem M0...	Ex e		✓	✓		✓	✓	IIC
• Emergency Stops	Ex tD							IIIC
• Pushbuttons								
• Indicator Lamps								
• Ammeters and Voltmeters								



Typical examples of custom assemblies include the following:

- Control stations
- Terminal boxes
- Full panel and frame design and construction (in both Ex d and Ex de technologies)
- Distribution panels
- Motor control
- Control stations
- Automation and DCS solutions
- Specialist process and instrumentation requirements



## Hazardous Area Custom Enclosures

### Cortem Ex d Custom Assemblies



#### Features and Benefits

Typical examples of custom assemblies include the following:

- Control stations
- Terminal boxes
- Full panel and frame design and construction (in both Ex d and Ex de technologies)
- Distribution panels
- Motor control
- Control stations
- Automation and DCS solutions
- Specialist process and instrumentation requirements

#### Product Selection

Ex d enclosures are used for installation of electrical equipment such as circuit breakers and power distribution equipment, operators, Indicators, PLC's, DCS, control equipment, transformers, motor starters, terminals, process devices, intrinsically safe equipment and more. Ex d enclosures can also be fitted with custom glass windows. Contact NHP for a quote today.

#### Cortem EJB (Ex d) Custom Assemblies

Zones 1, 2 and 21, 22

IECEx TSA 06.0011

Ex d [ia Ga] IIB + H2 Gb T4/T5/T6

Ex tb [ia Da] IIIC Db

IP66/67

Ambient Temperature

- 20°C + 55°C

- Available in aluminum or stainless steel bodies and with windows
- Fully customisable options, contact NHP for a quote today
- Drawings can be sent directly to NHP for quotation
- Can be drilled and assembled by the NHP IECEx workshop according to customers' specification and in accordance with certification
- More sizes available upon request, anti-condensation paint available upon request
- **Enclosures cannot be supplied blank**

#### EJB Series

##### Solid Lid

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
304 x 204 x 218	240 x 140 x 153	230 x 210	10.3		EJB-1A
364 x 284 x 278	300 x 220 x 213	290 x 290	19.4		EJB-3A
364 x 284 x 218	300 x 220 x 153	290 x 290	16.4	I	EJB45BA
567 x 387 x 298	490 x 305 x 229	360 x 356	38.9	I	EJB-45A
567 x 387 x 248	490 x 305 x 179	360 x 356	35.3		EJB45BA
710 x 510 x 356	630 x 430 x 273	600 x 490	81.3		EJB-55
710 x 510 x 256	630 x 430 x 173	600 x 490	66.9		EJB-55B
632 x 432 x 341	560 x 360 x 275	550 x 430	51		EJB-5A
632 x 432 x 271	560 x 360 x 203	550 x 430	43.4	I	EJB5BA
870 x 650 x 380	760 x 540 x 253	680 x 580	138.5		EJB6B

##### Ribbed Lid

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
282 x 182 x 105	214 x 113 x 60	160 x 154	5.6		EJB01
304 x 204 x 218	240 x 140 x 160	230 x 130	9.4		EJB1
432 x 332 x 299	360 x 260 x 233	350 x 330	25.4		EJB-4
567 x 387 x 298	490 x 305 x 210	360 x 236	36.5		EJB-45
567 x 387 x 248	490 x 305 x 160	360 x 236	33.1	I	EJB-45B
632 x 432 x 341	560 x 360 x 256	350 x 550	49.8	I	EJB-5

#### Accessories

NHP offer a comprehensive range of accessories and spare parts that are available on request.

Description	Item Type	Catalogue No.
EJB Round Window Diameter 90mm	I	K0253
EJB Round Window Diameter 140mm	I	K0254
EJB Round Window Diameter 180mm	I	K0255

EJB-1A



## NHP's IECEx certified workshop

NHP supplies not only the Cortem range of Hazardous Area Equipment, but also, customer specific systems via our assembly workshop located at our National Distribution and Manufacturing Centre in Melbourne. In this workshop, accredited staff design, construct and inspect the Cortem range according to the requirements of IECEx certification.

It allows for flexibility to produce custom solutions to suit your HAE requirements

including:

- Specialist lighting requirements
- Control stations (including custom orders)
- Terminal boxes (including custom orders)
- Full panel design and construction (in both Ex d and Ex de technologies)

The NHPEx workshop enables both expeditious and effective solutions for customers and operates under stringent quality assurance guidelines.

NHPEx can assemble the following to customer specifications:

- Distribution panels
- Motor control
- Control stations
- Automation solutions

NHP ELECTRICAL ENGINEERING PRODUCTS

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EJB1A4DOL7

## Hazardous Area Motor Starters

### Cortem EJB Motor Starters

#### Zones 1, 2 and 21, 22

#### IECEX TSA 06.0011

Ex d [ia Ga] IIB + H2 Gb T4/T5/T6

Ex tb [ia Da] IIIC Db

IP66/67

Ambient Temp.

- 20°C + 55°C

NHP has a range of 'off the shelf' Ex motor starters that are available in various combinations.

NHP also offers customer specific systems via our assembly workshop located at our National Distribution and Manufacturing Centre in Melbourne.

With over 40 years experience and knowledge in motor control combined with the quality solutions offered from our IECEx certified workshop, NHP can offer a solution for all your motor control requirements.

#### Features and Benefits

- Cast aluminium housing
- IP65/66
- VSDs
- DOL, star-delta and reverse starters
- Distribution panels
- Glass window available
- Stainless steel version available
- Drawings can be sent directly to our estimating team for an immediate quote

#### Ex d DOL Motor Starters

As standard the Ex d DOL starters are supplied with:

- Start pushbutton
- Stop pushbutton
- Overload with DIP switch adjustable trip classes
- Class 10, 15, 20 and 30 to suit various load run-up times
- DIP switch adjustable auto/manual reset

Normal Duty (kW)	Un (V AC)	H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
7.5	415	304 x 204 x 218	230 x 130	10.3	A	EJB1A4DOL7
15	415	304 x 204 x 218	230 x 130	10.3	A	EJB1A4DOL15



GUB



GUB...B

#### Cortem GUB (Ex d) Custom Assemblies

#### Zones 1, 2 and 21, 22

#### IECEX TSA 06.0012

Ex d IIC

Ex tD A21

IP66/67

#### Ambient Temperature

- 20°C + 55°C

- Available in Aluminum bodies
- Fully customisable options, contact NHP for a quote today
- Drawings can be sent directly to NHP for quotation
- Can be drilled and assembled by the NHP IECEx workshop according to customers' specification and in accordance with certification
- More sizes available upon request, anti-condensation paint available upon request
- **Enclosures cannot be supplied blank**

## GUB Series

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
174 x 174 x 140	146 x 146 x 78	150 x 195	3.9		GUB-01
276 x 276 x 217	250 x 250 x 135	236 x 316	11.92	I	GUB-03



GUB-01V

## GUB...V Series

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Window Ø (mm)	Item Type	Catalogue No.
174 x 174 x 160	146 x 146 x 105	154 x 195	4.27	90	I	GUB-01V
230 x 230 x 154	204 x 204 x 95	196 x 265	7.6	140		GUB-02V
276 x 276 x 200	250 x 250 x 140	236 x 316	14.1	180	I	GUB-03V



GUB...B

## CCA (Ex d) Custom Assemblies Zones 1, 2 and 21, 22

### IECEx TSA 06.0012

Ex d IIC  
Ex tD A21  
IP66/67

### Ambient Temp.

- 20°C + 55°C
- Available in aluminum bodies
- Fully customisable options, contact NHP for a quote today
- Drawings can be sent directly to NHP for quotation
- Can be drilled and assembled by the NHP IECEx workshop according to customers' specification and in accordance with certification
- More sizes available upon request, anti-condensation paint available upon request
- **Enclosures cannot be supplied blank**

## CCA/E Series

H x W x D, Ø (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
145 x 145 x 135, Ø170	121 x 121	128 x 150	2.8	I	CCA-01E
195 x 195 x 159, Ø220	171 x 171	175 x 175	5.6	I	CCA-02E
240 x 240 x 230, Ø270	216 x 216	213 x 213	9.1	I	CCA-03E
128 x 128 x 133, Ø146	104 x 104	111 x 138	1.85	I	CCA0E

## CCA/C Series

H x W x D, Ø (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
145 x 145 x 149, Ø170	121 x 121 x 113	128 x 150	5	I	CCA-01C
195 x 195 x 166, Ø212	171 x 171 x 130	175 x 175	8	I	CCA-02C
240 x 240 x 223, Ø260	216 x 216 x 185	213 x 213	14	I	CCA-03C
385 x 385 x 262, Ø410	353 x 353 x 200	339 x 339	33	I	CCA-04C
128 x 128 x 150, Ø146	104 x 104 x 122	111 x 138	4	I	CCA-0C



CCA-01C

## Cortem EJB (Ex d) Custom Assemblies Zones 1, 2 and 21, 22

### IECEX TSA 06.0015U

Ex d IIC

Ex tD A21 IP66

M-0 series control, monitoring and signaling devices are installed as external accessories on Cortem 'Ex d' enclosures used in any industrial environment where an explosive atmosphere may be present, classified as Zone 1, 2, 21, 22.

M-0 control devices can be used to close or open electrical or mechanical devices fitted inside the 'Ex d' enclosures while the signaling devices feature lights to indicate their operating status. The control and signaling device components are made from stainless steel to deliver unbeatable efficiency under any environmental conditions. Levers are made from aluminium while the plastic parts on push-buttons are designed to provide lengthy service life even when used in a highly corrosive atmosphere.

M-0 control and signaling devices have an IP66 protection degree. All identification, test or warning labels located on the enclosure lids are made from aluminium, stainless steel or traffolyte depending on your specific requirements or as dictated by our own standards.



M-0429



M-0428



M-0445



M-0427

Operator (type)	Operator (action)	Operator (colour)	Item Type	Catalogue No.
Pushbutton, Flush	Momentary	Blue		M-0429/B
Pushbutton, Flush	Momentary	White	I	M-0429/BI
Pushbutton, Flush	Momentary	Yellow	I	M-0429/G
Pushbutton, Flush	Momentary	Black		M-0429/N
Pushbutton, Flush	Momentary	Red		M-0429/R
Pushbutton, Flush	Momentary	Green		M-0429/V

Operator (type)	Operator (action)	Operator (colour)	Item Type	Catalogue No.
Pushbutton, Extended, Illuminated	Momentary	Blue	I	M-0428/B
Pushbutton, Extended, Illuminated	Momentary	Yellow		M-0428/G
Pushbutton, Extended, Illuminated	Momentary	White	I	M-0428/I
Pushbutton, Extended, Illuminated	Momentary	Red	I	M-0428/R
Pushbutton, Extended, Illuminated	Momentary	Green	I	M-0428/V

Operator (type)	Operator (action)	Operator (colour)	Item Type	Catalogue No.
E-Stop, Mushroom Head	Twist to Release	Red		M-0445

Operator (type)	Operator (action)	Colours (top-bottom)	Item Type	Catalogue No.
Multi-Function Pushbutton, 2-Position	Momentary	Red - Black	I	M-0427

Operator (type)	Un (V AC / V DC)	Lens (colour)	Item Type	Catalogue No.
Pilot Light	230V AC / 230V DC	Blue	I	M-0457/2B230
Pilot Light	24V AC / 24V DC	Blue	I	M-0457/2B24
Pilot Light	230V AC / 230V DC	Yellow		M-0457/2G230
Pilot Light	230V AC / 230V DC	Red		M-0457/2R230
Pilot Light	24V AC / 24V DC	Red		M-0457/2R24
Pilot Light	230V AC / 230V DC	Green		M-0457/2V230
Pilot Light	24V AC / 24V DC	Green		M-0457/2V24

Contacts	Contact (action)	Contact (type)	Ue (max) (V AC / V DC)	Item Type	Catalogue No.
2 NC	Slow Action	Double Break	600 / 300		M-0606/02

Description	Item Type	Catalogue No.
Padlockable 90 Int 3 R-Ms-Mo		M-0437/V
Operator For Padlockable Cam And Rotary	I	M-0438/V
Protection Guard And Mushroom Padlockable	I	M-736
Emergency Stop Guard		M-952

## Hazardous Area Custom Enclosures

### Cortem SA (Ex e) Custom Assemblies

#### Zones 1, 2 and 21, 22

#### IECEX CES 11.0032

Ex de IIC T6 or T5 Gb

Ex tb IIIC T85°C or T100°C Db

IP66

Ambient Temp. / Temp. Class / Max Surface Temp.

- 40°C + 40°C / T / T85°C

- 40°C + 55°C / T5 / T100°C

#### Features and Benefits

- Available in GRP, aluminum or stainless steel bodies
- Fully customisable options, contact NHP for a quote today
- Drawings can be sent directly to NHP for quotation
- Can be drilled and assembled by the NHP IECEx workshop according to customers' specification and in accordance with certification
- More sizes available upon request, anti-condensation paint available upon request
- Enclosures cannot be supplied blank



### Cortem SA (Ex e) Custom Assemblies

#### GRP Series

SA/P series terminal boxes consist of enclosures made in Glass Reinforced Plastic (GRP) with Ex e and Ex tb protection for increased safety. They are equipped with Ex e terminals for circuits with Ex e or Ex ia or combinations of both. The cover is fixed to the body with 4, 6 or 8 anti-loosening screws and is IP 66 rated.

- SA/P series junction boxes are built in GRP resin
- Can be supplied with multipolar terminal blocks or with modular terminal blocks
- Can be equipped with pilot lights, pushbuttons and measuring instruments to assemble control and signaling panel stations

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
110 x 110 x 83	104 x 104 x 65	94 x 94	0.4		SA111108P
170 x 110 x 83	164 x 104 x 65	154 x 94	0.7		SA117108P
305 x 147 x 110	296 x 138 x 90	285 x 127	1.9		SA301410P



SA111108P

#### Aluminium Series

The SA series terminal boxes consist of enclosures made in aluminium with Ex e and Ex tb protection for increased safety. They are equipped with Ex e terminals for circuits with Ex e or Ex ia or combinations of both. The cover is fixed to the body with 4, 6 or 8 anti-loosening screws.

- SA series junction boxes are constructed of aluminium alloy
- Can be supplied with multipolar terminal blocks or with modular terminal blocks
- Can be equipped with pilot lights, pushbuttons and measuring instruments to assemble control and signaling panel stations

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Weight (kg)	Item Type	Catalogue No.
110 x 110 x 83	104 x 104 x 64	94 x 94	0.5		SA111108
170 x 110 x 83	164 x 104 x 65	154 x 94	0.8		SA171108
305 x 147 x 110	296 x 138 x 90	285 x 127	2		SA301410



SA111108



SA1007030SS

### Stainless Steel Series

The SA / SS series terminal boxes consist of enclosures made in stainless steel with Ex e and Ex tb protection for increased safety. They are equipped with Ex e terminals for circuits with Ex e or Ex ia or combinations of both. The cover is fixed to the body with 4, 6 or 8 anti-loosening screws.

- SA...SS series junction boxes are constructed from AISI 316L stainless steel
- Suitable for electrical installations placed in aggressive environments as increased safety boxes
- Can be supplied with multipolar terminal blocks or with modular terminal blocks
- Can be equipped with pilot lights, pushbuttons and measuring instruments to assemble control and signaling panel stations

H x W x D (mm)	Internal H x W x D (mm)	Fixings H x W (mm)	Item Type	Catalogue No.
1000 x 700 x 300	940 x 640 x 255	464 x 740	I	SA1007030SS
110 x 110 x 90	67 x 67 x 37	38 x 130	I	SA1111108SS
170 x 110 x 90	127 x 67 x 37	98 x 130		SA1711108SS
200 x 200 x 210	145 x 145 x 155	128 x 220	I	SA202020SS
305 x 230 x 190	249 x 174 x 135	233 x 250	I	SA302318SS
400 x 400 x 210	344 x 344 x 155	328 x 420	I	SA404020SS
500 x 500 x 210	445 x 445 x 155	428 x 520	I	SA505020SS
600 x 600 x 210	545 x 545 x 155	528 x 620	I	SA606020SS
620 x 305 x 190	564 x 249 x 135	548 x 325	I	SA623018SS

### Cortem (Ex e) command and control operators Zones 1, 2 and 21, 22

#### IECEX CES 11.0029U

Ex e IIC Gb

Ex tb IIIC Db IP 66

M-0 series control, monitoring and signaling devices are installed as external accessories on Cortem 'Ex e' enclosures used in any industrial environment where an explosive atmosphere may be present, classified as Zone 1, 2, 21, 22.

M-0 control devices can be used to close or open electrical or mechanical devices fitted inside the 'Ex e' enclosures while the signaling devices feature lights to indicate their operating status.

Devices have an IP66 protection degree.

All identification, test or warning labels located on the enclosure lids are made from aluminium, stainless steel or traffolyte depending on your specific requirements or as dictated by our own standards.

- High mechanical strength
- High operational reliability and cost efficiency
- Reduced maintenance costs
- Rated voltage: 690V
- Frequency: 50/60Hz
- Range: 10A
- Connection: max. 2.5mm<sup>2</sup>
- Rated impulse withstand voltage: 4kV
- Pollution degree: 2
- Short circuit conditional current : 1kA
- Minimum positive opening travel: 3mm
- Minimum force required for operation: 5N
- Maximum stroke (+ overtravel): 4.75mm
- Weight: 40g



M-0603/R



M-0605

Operator (type)	Operator (action)	Operator (colour)	Padlockable (Y / N)	Item Type	Catalogue No.
Pushbutton, Flush	Momentary	Blue	No	I	M-0603/B
Pushbutton, Flush	Momentary	White	No	I	M-0603/BI
Pushbutton, Flush	Momentary	Yellow	No	I	M-0603/G
Pushbutton, Flush	Momentary	Black	No		M-0603/N
Pushbutton, Flush	Momentary	Red	No		M-0603/R
Pushbutton, Flush	Momentary	Red	Yes	I	M-0603/RL
Pushbutton, Flush	Momentary	Green	No		M-0603/V

Operator (type)	Operator (action)	Operator (colour)	Item Type	Catalogue No.
E-Stop, Mushroom Head	Push-Pull / Twist to Release	Red		M-0605
E-Stop, Mushroom Head	Key to Release	Red	I	M-0605/K

Operator (type)	Un (V AC / V DC)	Operator (colour)	Item Type	Catalogue No.
Pilot Light	230V AC /	Blue	I	M-0612/B230
Pilot Light	24V AC / 24V DC	Blue	I	M-0612/B24
Pilot Light	230V AC /	Yellow	I	M-0612/G230
Pilot Light	24V AC / 24V DC	Yellow	I	M-0612/G24
Pilot Light	230V AC /	Red	I	M-0612/R230
Pilot Light	24V AC / 24V DC	Red	I	M-0612/R24
Pilot Light	230V AC /	Green	I	M-0612/V230
Pilot Light	24V AC / 24V DC	Green	I	M-0612/V24



M-0612/V

Description	Contacts	Item Type	Catalogue No.
CONTACTS SET 1NC	1 NC		M-0606/01
CONTACTS SET 1NO CONTACTS	1 NO		M-0606/10
CONTACTS SET 1NO+1NC	1 NO + 1 NC		M-0606/11

Operator (type)	Operator (action)	Operator (colour)	Item Type	Catalogue No.
Selector Switch, Short Handle, 3-Position	Latched / Maintained	Black	I	M-0604/2C
Selector Switch, Short Handle, 2-Position	Latched / Maintained	Black		M-0604/2I
Selector Switch, Short Handle, 3-Position	Spring Return	Black	I	M-0604/2W
Selector Switch, Short Handle, 2-Position	Latched / Maintained	Black	I	M-0604/2Z



M-0604/01

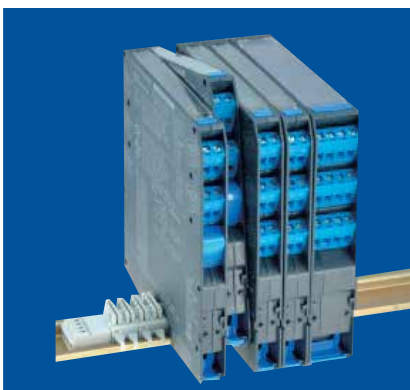
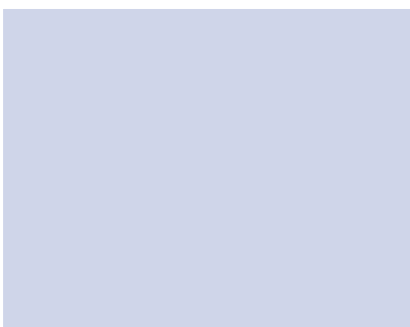
Description	Item Type	Catalogue No.
Ex E Selector Switch Lockout Bar		M963

# 4 Intrinsic Safety Equipment

<b>Hazardous Area Intrinsically Safe Isolators</b>	
GM International Intrinsically Safe Isolators	54
<b>Hazardous Area Intrinsically Safe Distributed I/O</b>	57

**Item Type (Ordering information)**

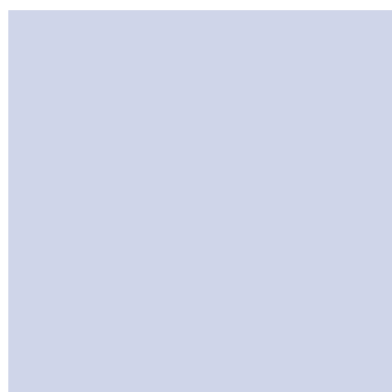
- I** Indent item (non refundable)
- A** Assembled to order (non refundable)
- K** A kit item which contains a number of parts (may contain indent items)
- Blank** Stocked



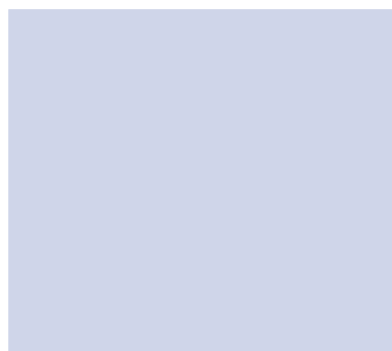
**INTRINSICALLY SAFE  
GALVANIC ISOLATORS**



**INTRINSICALLY SAFE  
GALVANIC ISOLATORS**



**INTRINSICALLY SAFE  
DISTRIBUTED I/O**





## Hazardous Area Intrinsically Safe Isolators

### GM International Intrinsically Safe Isolators

#### Zones 0, 1, 2 and 20, 21, 22

Ambient temperature

-40°C to +60/+70 °C

The entire D1000 and D5000 series are IECEx certified and approved for maritime applications by DNV and KR.

Multiple output configurations allow for a wide range of applications, interfacing the majority of devices on the market.

Majority of iS isolators in the range are DIP switch configurability for easy field setup.

Software configurable isolators, e.g the 8 channel digital Input module D5231 offers modbus output which gives the possibility to read and configure the barrier remotely.

Contact NHP for assistance with:

- Matching devices to associated apparatus
- Assessment of intrinsically safe systems
- Entity calculations
- Ex loop safety parameters verification

#### Features and Benefits

##### Wide functionality

- Wide range of digital and analogue I/Os
- More than 25 modules suitable for SIL 3 applications according to IEC 61508, IEC 61511

##### High performance

- Complete absence of electrolytic capacitors and SMD manufacturing ensures minimum 20 years lifetime
- High signal transfer accuracy and repeatability

##### General features

- Installation in Zone 2
- High packing density
- Three port galvanic isolation to eliminate noise, ground loop problems and to provide intrinsic safety without a high integrity safety earth connection
- Line fault alarm detects open or short circuit of field cables
- Certified for offshore and marine applications

#### D1000 Series

The GM International D1000 series intrinsically safe isolators have a wide range of functions, suitable for multiple applications from analogue in and out, digital in and out, temperature converters and trip converters, serial converters, load cell, encoders and more. D1000 Modules provide the most simple and cost effective means of implementing intrinsic safety into your Hazardous Areas/locations applications.

If Bus mounting is required, please contact NHP for quote.

#### Digital Input

D1000 Series Digital input isolators.



D1030D

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
2	Voltage Free Input Proximity Switch	CO Relay, Isolated	-	20 - 30	SIL 2		D1030D
2	Voltage Free Input Proximity Switch	CO Relay, Isolated	-	10 - 30	SIL 2		D1031D
2	Voltage Free Input Proximity Switch	CO Relay, Isolated	85 - 250	-	SIL 2		D1130D

## Digital Outputs

D1000 Series digital output driver isolators.

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
4	CO Relay (I and V Limited)	Voltage Free Input	-	21.5 - 30	SIL 3		D1042Q
4	CO Relay (I and V Limited)	Voltage Free Input	-	21.5 - 30	SIL 3	I	D1043Q



D1042Q

## D1000 Series Load Cell Isolators

D1000 series load cell isolators.

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Item Type	Catalogue No.
1	Resistance	Resistance	-	20 - 30		D1063S
1	Resistance	Current: Single-Ended, Isolated Voltage: Single-Ended, Isolated	-	-	I	D1064S



D1063S

## D1000 Series Serial Converters

D1000 series serial converters.

Description	Ue (V DC min - max)	Item Type	Catalogue No.
The D1061S is used to separate Intrinsically Safe RS 422 / RS 485 equipment located in Hazardous Location from a RS 422 / RS 485 / RS 232 controller located in Safe Area.	20 - 30	I	D1061S



D1061S

## Signal Converter and Trip Amplifier

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
1	Current: Single-Ended, Isolated	CO Relay, Isolated	-	10 - 30	SIL 2	I	D1054S



D1054S

## D1000 Series Accessories

D1000 Series accessories and replacement parts.

Description	Item Type	Catalogue No.
Cold Junction Compensator For THCS Inputs	I	OPT1091
D1000 Kit For Bus Mounting 1 Required For EACH Section	I	OPT1096
PC Adapter For D1000 Programmable Units	I	PPC1092
Pocket Portable Configurator For GMI D1000 Series	I	PPC1090

## D5000 Series

The GM International D5000 series intrinsically safe isolators have a wide range of functions, suitable for multiple applications from analogue in and out, digital in and out, temperature converters and trip converters and encoders. With more than 25 modules suitable for SIL 3 applications according to IEC 61508, IEC 61511.

Each module features an independent power supply circuit for each channel, meaning dual channel units are equivalent to two single units because of the absence of common circuitry.

### Analogue Input

D5000 series analogue input isolators.

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
30	Current: Single-Ended, Isolated	Current: Single-Ended, Isolated	30 - 30	30 - 30	SIL 3		D5014S
2	Current: Single-Ended, Isolated	Current: Single-Ended, Isolated	-	18 - 30	SIL 3		D5014D
4	Current: Single-Ended, Isolated	Current: Single-Ended, Isolated	-	20 - 30	SIL 2	I	D5212Q



D5014S

### Analogue Outputs

D5000 series analogue output isolators.

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
2	Current: Single-Ended, Isolated	Current: Single-Ended, Isolated	-	18 - 30	SIL 2	I	D5020D



D5020D

### Digital Inputs

D5000 series digital input isolators.

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
1	Voltage Free Input Proximity Switch	CO Relay, Isolated	-	18 - 30	SIL 3		D5030S
2	Voltage Free Input Proximity Switch	CO Relay, Isolated	-	18 - 30	SIL 3		D5030D
8	Voltage Free Input Proximity Switch	Open-Collector	-	18 - 30	SIL 2		D5231E



D5030S

### Digital Output Drivers

D5000 series digital output drivers.

Channels	Hazardous Area (signal)	Safe Area (signal)	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
1	CO Relay (I and V Limited)	Voltage Free Input	-	20 - 30	SIL 3		D5049S
3	CO Relay (I and V Limited)	Voltage Free Input	-	21.5 - 30	SIL 2		D5240T



D5049S

## Temperature and Trip Converters

D5000 series temperature and trip converters.

Channels	Ue (V AC min - max)	Ue (V DC min - max)	Safety Integrity Level (SIL / SIL CL)	Item Type	Catalogue No.
1	-	18 - 30	SIL 3	I	D5072S087
2	-	18 - 30	SIL 2		D5072D



D5072S087

## D5000 Series Accessories

D5000 Series accessories and replacement parts.

Description	Item Type	Catalogue No.
D5000 22mm Bus Connector-1 Required For EACH Module	I	JDFT050
D5000 12mm Bus Connector-1 Required For EACH Module		JDFT049
D5000 Kit For Bus Mounting-1 Required For EACH Section	I	OPT5096
PC Adapter For D5000 Programmable Units		PPC5092



JDFT050

## Hazardous Area Intrinsically Safe Distributed I/O

The new intrinsically safe distributed I/O by Rockwell Automation is a distributed I/O platform that integrates devices in Hazardous Areas options via EtherNet/IP. Tight integration with integrated architecture allows easy configuration and a compact, chassis-based I/O design provides maximum efficiency in a small space.



Today's development shows that many chemical and petrochemical companies have production plants, production and process automation machines in operation, which use gas-air or dust-air mixtures which can be explosive. For this reason, the electrical components used in such plants and systems must not pose a risk of explosion resulting in injury to persons or damage to property.

NHP offer I/O solutions in both hazardous and non-hazardous environments.

When used in hazardous areas of Zone 1 or 2, the NHP I/O solutions offer a safe, easy and economical connection to the sensors and actuators of Zones 0 and 1.

# 5 Switching and Field Devices

<b>Selection Chart</b>	<b>60</b>
<b>Hazardous Area Plugs and Sockets</b>	
Plugs and Sockets	<b>63</b>
<b>Hazardous Area Isolators</b>	
Rotary Switches	<b>64</b>
<b>Hazardous Area Field Switches and Sensors</b>	
Steute Limit Switches and Sensors	<b>65</b>
<b>Hazardous Area Pull-Wire Switches</b>	
Austrol Switches	<b>72</b>

**Item Type (Ordering information)**

- I** Indent item (non refundable)
- A** Assembled to order (non refundable)
- K** A kit item which contains a number of parts (may contain indent items)
- Blank** Stocked



SAFETY SENSORS



PLUGS AND SOCKETS



ROTARY SWITCHES



FOOT SWITCHES



LIMIT SWITCHES



## Field Switching and Sensing

### Selection Chart

Description	Protection Technique	Zone 0	Zone 1	Zone 2	Zone 20	Zone 21	Zone 22	Group
<b>Plugs and Sockets</b>								
<b>Cortem PY /SPY</b>								
<ul style="list-style-type: none"> <li>• 16A and 32A</li> <li>• 3, 4, 5 pole options</li> <li>• Aluminium housing,</li> </ul>	Ex d Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Isolators / Switches</b>								
<b>Cortem CSC / EFSCO</b>								
<ul style="list-style-type: none"> <li>• 16, 25 and 63A</li> <li>• 1, 2, 3 and 4 pole options</li> <li>• 20V to 415V AC</li> <li>• Aluminium housing</li> </ul>	Ex d Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Limit switches</b>								
<b>Steute Ex 14, Ex 335 and Ex T 356</b>								
<ul style="list-style-type: none"> <li>• Thermoplastic, aluminium or zinc die cast bodies</li> <li>• 12 different actuator options</li> <li>• IP65/ 66/ 67 rating</li> <li>• SIL rated safety versions</li> </ul>	Ex d Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Solenoid Interlock Switches</b>								
<b>Steute Ex AZM 415 and Ex STM 295</b>								
<ul style="list-style-type: none"> <li>• Thermoplastic or aluminium bodies</li> <li>• SIL rated safety versions</li> </ul>	Ex de Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Belt Drift Switches</b>								
<b>Steute Ex 335 4VSR and Ex ZS 73 SR</b>								
<ul style="list-style-type: none"> <li>• Metal or aluminium bodies</li> <li>• Standard and heavy duty versions</li> </ul>	Ex de Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Foot Switches</b>								
<b>Steute Ex GFS Series</b>								
<ul style="list-style-type: none"> <li>• With or without protective shield</li> <li>• Metal enclosure</li> <li>• IP65</li> </ul>	Ex d Ex tD		✓	✓		✓	✓	IIC IIIC



Description	Protection Technique	Zone 0	Zone 1	Zone 2	Zone 20	Zone 21	Zone 22	Group
<b>Toung Interlock Safety Switches</b>								
<b>Steute Ex 335 AZ</b>								
• Zinc die cast bodies	Ex de		✓	✓		✓	✓	IIC
• Separate actuator	Ex tb							IIIC
• IP67								
<b>Non-Contact Safety Sensors</b>								
<b>Steute Ex HS Si 4 and Ex RC Si</b>								
• Rectangular bodies or M30 barrel type	Ex mb		✓	✓		✓	✓	IIC
• Thermoplastic or nickel plated brass bodies								IIIC
• Non-contact coded actuator								
<b>Emergency Pull-wire Switches</b>								
<b>Steute Ex ZS 71 and Ex ZS 80</b>								
• Aluminium die cast bodies	Ex d		✓	✓		✓	✓	IIC
• Multiple configurations	Ex tb							IIIC
• IP65/67								
<b>Inductive sensors</b>								
<b>Steute EEx iS</b>								
• Stainless steel cylindrical bodies	Ex i	✓	✓	✓	✓	✓	✓	IIC
• Flush or non-flush mounting								IIIC
• IP66/67/68								
<b>Magnetic sensors</b>								
<b>EEx RC M20 Series</b>								
• Nickel plated brass or stainless steel cylindrical bodies	Ex mb		✓	✓		✓	✓	IIC
• Up to 30mm sensing distance	Ex tb							IIIC
• IP67								

Receiver with 4 separate relay  
outputs, connected to an external antenna



Up to 4 different switches  
can be connected to the  
same receiver



Rated distance of up to 450m  
Typical nominal transmission distance for indoor  
applications = 40-60m



## Planning on going wireless? Explore new possibilities with NHP!

NHP are proud to be able to provide a reliable suite of wireless switches and sensors that allow design flexibility and lower cost for installations that require long cable runs.

Our extensive range of wireless switches and sensors include pushbuttons, footswitches, limit switches, miniature remotes and inductive sensors. All products available are suitable for industrial automation and the building services industry. In addition, there are IECEx certified versions available which are suitable for Hazardous Area applications. With the option of either battery-powered or battery-less operation, battery-less versions are able to generate their own power through the energy generated by clicking the switch, this is also known as "Electrodynamic Energy Generation".

Specialised "Universal Transmitter" devices can be connected to any standard industrial device with a relay output, creating a solution where the outputs can be switched wirelessly.

NHP are proud to bring these to the local market – customising solutions to suit varied application requirements. If you're looking for a range of wireless switches and sensors that offer high reliability and robustness, look no further than NHP.



NHP ELECTRICAL ENGINEERING PRODUCTS

1300 NHP NHP | [nhp.com.au](http://nhp.com.au) | [f](#) [in](#) [t](#) [You Tube](#)

## Hazardous Area Plugs and Sockets

### Plugs and Sockets

#### Zones 1, 2 and 21, 22 IECEX CES 11.0011X

Ex d IIC T5  
Ex tD A21  
IP 66

#### PY Series

The PY series of socket outlets are rated up to 32A, 690V AC with either 3, 4 or 5 pin configuration. The socket has an integral switch in the base and is enclosed in a flameproof enclosure

- An interlocked disconnecting switch included with PY series socket
- Rated voltage identification by ring colour
- Sockets are supplied with reducers/adaptor for cable entries
- These sockets, even if supplied with the plugs SPY are conceived so as not to allow the coupling with standard industrial type plugs
- Body and cover in low copper content aluminium alloy
- PVC blinding plug with chain to prevent from loosing it

#### PY Socket Kit with Cable Entry

Ie (A max)	Poles	Ue (V min - max)	Cable Entries	Weight (kg)	Item Type	Catalogue No.
16	2P + E	200 - 250	2 x M20	1.7	K	PY216BM20
16	2P + E	200 - 250	2 x M25	1.7	K	PY216BM25
16	3P + E	380 - 415	2 x M25	1.7	K	PY316RM25
32	3P + E	380 - 415	2 x M25	2.1	K	PY332RM25
32	3P + E	380 - 415	2 x M32	2.1	K	PY332RM32
32	3P + E	380 - 415	2 x M25	2.1	K	PY432RM25
32	3P + N + E	380 - 415	2 x M32	2.1	K	PY432RM32



PY216BM20

#### SPY Series

The PY series of socket outlets and SPY series of plugs are rated up to 32A, 690V AC with either 3, 4 or 5 pin configuration. The socket has an integral switch in the base and is enclosed in a flameproof enclosure. The integral switch is operated by inserting the plug into the socket and rotating the plug to the ON position of switch. The plug may not be disengaged while the switch is activated (ON position) due to a locking lug arrangement.

- Explosion-proof plugs suitable for PY series sockets
- Because of special design, they can be used with industrial sockets
- Body in low copper content aluminium alloy
- Stainless steel screws
- Nickel-plated brass pins
- Ral 7035 epoxy coating.

#### SPY Plug Kit with Cable Entry

Ie (A max)	Poles	Ue (V min - max)	Cable Entries	Weight (kg)	Item Type	Catalogue No.
16	2P + E	200 - 250	1 x M20	0.3	K	SPY216BM20
16	2P + E	200 - 250	1 x M25	0.3	K	SPY216BM25
16	3P + E	380 - 415	1 x M25	0.3	K	SPY316RM25
32	3P + E	380 - 415	1 x M25	0.6	K	SPY332RM25
32	3P + E	380 - 415	1 x M32	0.6	K	SPY332RM32
32	3P + N + E	380 - 415	1 x M25	0.6	K	SPY432RM25
32	3P + N + E	380 - 415	1 x M32	0.6	K	SPY432RM32



SPY216BM20



## Hazardous Area Isolators Rotary Switches

**Zones 1, 2 and 21, 22**  
**IECEX TSA 06.0009**  
Ex d IIC T6  
Ex tD A21  
IP66

### CSC Series - 16A

The CSC Series Isolators are single body enclosures and are intended for flameproof (Ex d) and dust ignition proof (Ex tD) applications. The CSC series enclosures are fitted with a single rotary switch operator located in the cover and have the ability to fit a lock out device (LOTO).

- CSC series isolators, switches and changeover switches are rotary type 16A models with control handle on the cover
- Supplied with adaptors for metric entries
- Body and cover low copper content aluminium alloy
- Frontal aluminium handle, cover fitted with stainless steel closing screws
- Fixing lugs, Internal/external stainless steel earth screws
- Comes with standard padlockable hole



CSC216M20

Operator (type)	In (A)	Poles	Cable Entry (Top / Bottom)	Weight (kg)	Item Type	Catalogue No.
Off/On Switch (Isolator)	16	2	M20 / M20	0.95	K	CSC216M20
Off/On Switch (Isolator)	16	2	M25 / M25	0.95	K	CSC216M25
Off/On Switch (Isolator)	16	4	M20 / M20	0.85	K	CSC416M20
Off/On Switch (Isolator)	16	4	M25 / M25	0.85	K	CSC416M25

### EFSCO Series - 25/63A

The EFSCO Series Isolators are single body enclosures and are intended for flameproof (Ex d) and dust ignition proof (Ex tD) applications. The EFSCO series enclosures are fitted with a single rotary switch operator, with option from 25A to 63A and all isolators have the ability to fit a lock out device (LOTO).

- The EFSCO series isolators, switches and changeover switches are rotary type 25A, 50A and 63A models with control handle on the cover
- The construction materials are suitable for chemically aggressive environments, also for offshore
- Supplied with adaptors for metric entries
- Body and cover in low copper content aluminium alloy
- Frontal aluminium handle
- Cover fitted with stainless steel closing screw
- Comes with standard padlockable hole



EFSCO24M20

Operator (type)	In (A)	Poles	Cable Entry (Top / Bottom)	Weight (kg)	Item Type	Catalogue No.
Off/On Switch (Isolator)	25	4	M20 / M20	1.18	K	EFSCO24M20
Off/On Switch (Isolator)	25	4	M25 / M25	1.18	K	EFSCO24M25
Off/On Switch (Isolator)	25	4	M32 / M32	1.18	K	EFSCO24M32
Off/On Switch (Isolator)	63	3	M25 / M25	1.4	K	EFSCO63M25
Off/On Switch (Isolator)	63	3	M32 / M32	1.4	K	EFSCO63M32
Changeover Switch without Off	25	2	M20 / M20	1.18	K	EFSCO266M20
Changeover Switch without Off	25	2	M25 / M25	1.18	K	EFSCO266M25
Changeover Switch without Off	63	1	M25 / M25	1.4	K	EFSCO66M25
Changeover Switch with Off	25	2	M20 / M20	1.2	K	EFSCO244M20
Changeover Switch with Off	25	2	M25 / M25	1.2	K	EFSCO244M25

## Hazardous Area Field Switches and Sensors

### Steute Limit Switches and Sensors

#### Ex Limit Switches

##### Ex 14 series

- Ex Zone 1, 2, 21 and 22
- Thermoplastic enclosure
- Double insulated
- Slow action, change-over contact or 2 N/C contacts with double break
- Suitable for in-line mounting
- With pre-wired cable
- Gold-plated contacts available on request
- With latching element (On-/Off principle) available on request

Actuator	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Top push plunger	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Built-in cable with flying leads, 2m	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)	I	EEX14F101S2M
Top push plunger	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Built-in cable with flying leads, 2m	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)	I	EEx 14 10/1S 1m
Wobble stick / spring rod	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Built-in cable with flying leads, 2m	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)	I	EEx 14 TK 10/1S 1m



EEX14F101S2M

##### Ex 335 Series

- Ex Zone 1, 2, 21 and 22
- Metal enclosure
- Available with contact overlapping
- Actuator can be repositioned by 4 x 90°
- Rocking lever can be repositioned by 10° steps
- With gold-plated contacts available on request

Actuator	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Non-adjustable roller lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast	I	EEx 335 1K 10/1S
Adjustable rocker lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast		EEX3354V7H101S
Top push roller plunger	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast		EEX335R101S
Non-adjustable rocker lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast	I	EEx 335 4V3H 10/1S
Top push plunger	2 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast	I	EEx 335 S 20
Non-adjustable rod lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast		EEX3354V10H101S
Wobble stick / spring rod	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast	I	EEx 335 TK 10/1S
Non-adjustable rocker lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast		EEx 335 4VH 10/1S



EEX 335 1K 10/1S



EEx T4V7H 356 2m

### Ex T 356 Series

Connection is made by means of the integrated connection cable (open-ended line).

- Ex Zone 1, 2, 21 and 22
- Thermoplastic enclosure with metal cover
- Mounting and switching details to EN 50041
- With pre-wired cable
- Actuator can be repositioned by 4 x 90°
- Rocking lever can be repositioned by 10° steps

Actuator	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Adjustable rocker lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Built-in cable with flying leads, 2m	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)		EEx T4V7H 356 2m
Adjustable rocker lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Built-in cable with flying leads, 5m	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)	I	EEx T4V7H 356 5M

### Ex Solenoid Interlocks

- Aluminium/ steel enclosure
- 2 x M20 cable entries
- Two Ex switch inserts in one enclosure
- IP67

### Ex AZM 415 Series

- Ex Zone 1, 2, 21 and 22
- Two Ex switch inserts in one enclosure
- Spring-to-lock or power-to-lock principle
- Problem-free opening of stressed doors by means of bell-crank system
- High holding force 3500N
- Ball catch
- Wiring compartment



EExAZM415202SR

Actuator (action)	Fh (N)	Secondary Release (Y / N)	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Power to Lock	3500	No	2 NO + 2 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Aluminium, Die-Cast	I	EEx AZM 415 20/2S A
Power to Release	3500	No	2 NO + 2 NC, Slow Action,	Screw Terminal(s)	Aluminium, Die-Cast		EExAZM415202SR

### Ex STM 295 Series

- Ex Zone 1, 2, 21 and 22
- Thermoplastic enclosure
- Double insulated
- Two Ex switch inserts in one enclosure
- Spring-to-lock or power-to-lock principle
- Holding force 1000N
- Wiring compartment

Actuator (action)	Fh (N)	Secondary Release (Y / N)	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Power to Lock	1000	No	2 NO + 2 NC, Slow Action,	Screw Terminal(s)	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)	I	EEx STM 295 20/2S-A-3
Power to Release	1000	No	2 NO + 2 NC, Slow Action,	Screw Terminal(s)	GRP (Glass Reinforced Plastic / Polyester / Thermoplastic)		EEx STM 295 20/2S-R-3



EEx STM 295 20/2S-A-3

### Ex Belt Drift Switches

Ex belt alignment switches are suitable for applications with handling equipment. Ex belt alignment switches are actuated when the conveyor belt becomes misaligned. Depending on the plant arrangements, this signal can either be used to switch the equipment off or to provide automatic correction of the belt alignment. Thus, they should be installed at both sides of the conveyor belt close to the deflection and drive pulleys.

#### Ex 335 4VSR Series Belt Drift Switches

- Ex Zone 1, 2, 21 and 22
- Metal enclosure. Zinc die-cast enamel finish
- 2 contacts
- Design to EN 50041
- Wiring compartment
- Adjustable-length rod lever with nylon roller
- For light- and medium-heavy applications

Actuator	Contacts	Housing (material)	Cable Entry	Item Type	Catalogue No.
Adjustable rod lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Enamelled Zinc, Die-Cast	1 x [M20 x 1.5]	I	EEx 335 4VSR 10/1S



EEx 335 4VSR 10/1S

#### Ex ZS 73 SR Series

- Ex Zone 1, 2, 21 and 22
- Metal enclosure. Aluminium die-cast enamel finish
- 2 contacts
- Cable
- With latching and release by push-button possible
- Belt-alignment roller made of stainless steel 1.4104

Actuator	Contacts	Housing (material)	Connection	Item Type	Catalogue No.
Non-adjustable roller lever	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Enamelled Aluminium, Die-Cast	Built-in cable with flying leads, 3m	I	EEXZS73SR101SVD



EEXZS73SR101SVD

## Ex Foot Switches

### Ex GFS Series

Ex GFS foot switches are slow action types Zb, 1 N/C plus 1 N/O contact or 2 N/C plus 2 N/O contacts with double break, positive break N/C contacts. The enclosure is made from aluminium die-cast with an enamel finish in RAL 5011.

- Ex Zone 1, 2, 21 and 22
- 1-pedal type
- Metal enclosure
- With protective shield
- Max. 4 contacts
- Low pedal height
- With pre-wired cable, cable length 3m



EEx GFS 10/15

Guarded (Y / N)	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Yes	1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Built-in cable with flying leads, 3m	Aluminium, Die-Cast		EEx GFS 10/15

### Ex Safety Switches

These Ex safety switches with a separate actuator are suitable for sliding, hinged and particularly removable safety guards which need to be closed to ensure the necessary operational safety. They are also suitable for mounting on profile sections and retrofitting on existing equipment.

- Suitable for Zone 1, 2, 21 and 22
- Actuation through separate actuator
- Switching element is not physically connected to the actuator
- Thermoplastic, aluminium, zinc die cast or steel bodies
- Solenoid switches available
- IP65/67

### Ex 335 AZ Series

The switching element is not physically connected to the actuator but functionally brought together or separated by switching. When the switch is actuated, the actuator is separated from the base unit. During this process, the N/C contacts of the safety switch are positively opened and the N/O contacts closed.

- Multiple coding of the actuator
- Slow action, double-break changeover contact
- Metal enclosure



EEx 335 AZ 20

### Ex 335 Switches

Contacts	Connection	Housing (material)	Item Type	Catalogue No.
2 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast	I	EEx 335 AZ 20
1 NO + 1 NC, Slow Action, Double Break, Positively Driven	Screw Terminal(s)	Enamelled Zinc, Die-Cast	I	EEx 335 AZ 10/15

### Ex 335 Actuators

Description	Item Type	Catalogue No.
Actuator For The Ex 335 Az Series	I	AZ 335/355-B1
Actuator For The Ex 335 Az Series	I	AZ335355B12246
Actuator For The Ex 335 Az Series	I	AZ 335/355-B5
Actuator For The Ex 335 Az Series	I	AZ 335/355-B6

## Ex Safety Sensors

### Ex HS Si 4 Series

Type Ex HS Si 4 safety sensors are switches intended for the position monitoring of doors, flaps or other safety devices. The activation of the safety-sensor will be made by coded solenoids. The connection is via a permanently connected cable. The length of the cable is up to 15m.

- Ex Zone 1, 2, 21 and 22
- Thermoplastic enclosure
- Hall elements, coded
- Actuation from front
- Switching distance up to 8mm
- With pre-wired cable

#### Ex HS Si 4 Sensors

Indicator (Y / N)	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
No	2 NC, Hall effect	Built-in cable with flying leads, 10m	Glass-Filled PA66 / Thermoplastic (Polyamide 66), Ultramid A3XZG5		EEXHSSI42O10M



EEXHSSI42O10M

#### Ex HS Si 4 Actuators

Description	Item Type	Catalogue No.
Ex Magnet Coded For Ex HSSI		EEx MC 4



EEx MC 4

### Ex RC Si M30 Series

The solenoid switch consists of a metal housing into which a thermoplastic housing containing a PCB with four reed contacts, is mounted and completely potted.

- Ex Zone 1, 2, 21 and 22
- M30 barrel type sensor
- Nickel plated brass and stainless steel bodies available
- 24V DC switching
- Pre-wired cable
- Coded reed contacts
- Actuation from front
- Switching distance up to 8mm
- Designed for use in conjunction with a safety relay

#### Ex RC Si M30 Sensors

Indicator (Y / N)	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Yes	Reed, coded	Built-in cable with flying leads	Stainless Steel	I	EEx RC SI M30 6M 20 N



EEx RC SI M30 6M 20 N

#### Ex RC Si M30 Actuators

Description	Item Type	Catalogue No.
Coded actuating magnet for the Rc Si M30 Series		EEXMC30
Stainless Steel coded actuating magnet for the Rc Si M30 Series	I	EEx MC 30 NIRO



EEXMC30

### Ex Emergency Pull-Wire Switches

Ex emergency pull-wire switches are of great importance for the man-machine interface in the area of industrial applications. They are, for example, applied on transport and conveyor systems. After manual actuation, work and functional processes are initiated or switched off.

#### Ex ZS 71 Series

Type Ex ZS 71 pull-wire switches consist of the built-in switch type Ex 14, which is mounted in a light-alloy enclosure with plastic cover or light-alloy cover of different sizes to protect it against impact. The enclosures are equipped with a pushbutton and connection is made by means of the integrated connecting cable.

- Ex Zone 1, 2, 21 and 22
- Metal enclosure
- 2 contacts
- Small design
- Wire length up to 35m
- Release by push-button (VD)
- Available without unlocking mechanism
- Wire pull and breakage detection
- Watertight collar W for protection against penetration of dirt available
- Position indicator A available



EEx ZS 71 10/1S WVD

Contacts	Cable Max (m)	Connection	Actuator (action)	Housing (material)	Item Type	Catalogue No.
1 NO + 1 NC, Slow Action, Double Break, Positively Driven	35	Built-in cable with flying leads, 3m	Momentary	Aluminium, Die-Cast		EEx ZS 71 10/1S WVD
1 NO + 1 NC, Slow Action, Double Break, Positively Driven	35	Built-in cable with flying leads, 3m	Momentary	Aluminium, Die-Cast	I	EEXZS71101SWVDA
2 NC, Slow Action, Double Break, Positively Driven	35	Built-in cable with flying leads, 3m	Momentary	Aluminium, Die-Cast	I	EEXZS7120WVD

#### Ex ZS 80 Series

Type Ex ZS 80 pull-wire switches consist of the built-in switch type Ex 14, which is mounted in a light-alloy enclosure with plastic cover or light-alloy cover of different sizes to protect it against impact. The enclosures are equipped with a pushbutton and connection is by means of the integrated connecting cable.

- Ex Zone 1, 2, 21 and 22
- Metal enclosure
- 2 contacts
- Position indicator and integrated emergency-stop push-button
- Wire length up to 100m
- Pretensioning force 100N
- Lever for release and position indication
- Watertight collar
- Wire pull and breakage detection



EEx ZS 80 10/1S WVD

Contacts	Cable Max (m)	Connection	Actuator (action)	Housing (material)	Item Type	Catalogue No.
1 NO + 1 NC, Slow Action, Double Break, Positively Driven	100	Built-in cable with flying leads, 3m	Momentary	Aluminium, Die-Cast	I	EEx ZS 80 10/1S WVD
2 NC, Slow Action, Double Break, Positively Driven	100	Built-in cable with flying leads, 3m	Momentary	Aluminium, Die-Cast	I	EEx ZS 80 20 WVD

## Ex intrinsically Safe Inductive Sensors

Zones 0,1 2 and 20, 21, 22

IECEX IMQ 14.0001X

Ex ia IIC T6 Ga

Ex ia IIIC T85°C Da

IP68

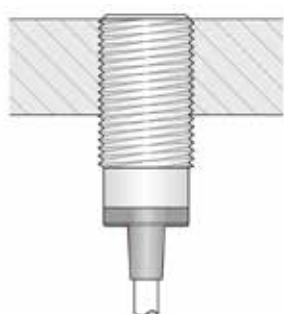
### Features:

- Stainless steel enclosure
- Flush or non-flush mounting
- LED indicator
- Pre-wired 2m cable
- 8.2 V DC 2 wire Namur switching
- Suitable for the food processing industry
- Designed to be used with intrinsically safe isolators

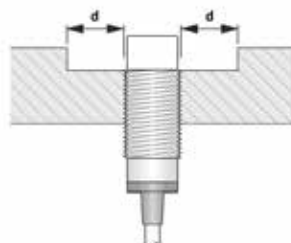


EEx IS M8 B

Mounting	Sensing Distance (mm min-max (nom))	Connection	Housing (material)	Thread (size)	Item Type	Catalogue No.
Flush Mount	- (2)	, 2m	Stainless Steel, 303	M12 x 1		EEXISM12B2ABBAB
Non-Flush Mount	- (4)	, 2m	Stainless Steel, 303	M12 x 1	I	EEXISM12NB4ABBAB
Flush Mount	- (5)	, 2m	Stainless Steel, 303	M18 x 1		EEXISM18B5ABBAB
Non-Flush Mount	- (8)	, 2m	Stainless Steel, 303	M18 x 1	I	EEXISM18NB8ABBAB
Flush Mount	- (10)	, 2m	Stainless Steel, 303	M30 x 1.5	I	EEXISM30B10ABBAB
Non-Flush Mount	- (15)	, 2m	Stainless Steel, 303	M30 x 1.5	I	EEXISM30NB15ABBAB



Flush mounting



Non-flush mounting

## Ex Magnetic Sensors

The Ex magnetic sensors are actuated by an M range permanent magnet, entering their proximity without any physical contact. These devices are available with N/O, N/C, changeover, bistable or bistable changeover contacts. All magnetic sensors are supplied with pre-wired cables. When using Ex magnetic sensors, care must be taken that their mounting site is free of magnetic fields.

- Ex Zone 1, 2, 21 and 22
- Nickel-plated brass enclosure
- Available in stainless steel Including 2 mounting nuts 1reed contact
- Actuation from front, actuation from side only with bistable contact
- Switching distance up to 30mm depending on the actuating magnet
- With pre-wired cable
- Version for low temperatures up to -40 °C
- With lappterm 145 cable available on request

### RCM20 Series

Actuation (direction)	Contacts	Connection	Housing (material)	Item Type	Catalogue No.
Front	1 CO, Reed	Built-in cable with flying leads, 2m	Nickel-Plated Brass	I	EEXRCM201W



EEXRCM201W

## Ex-Rated Safety Pull-Wire Switches Zones 21, 22

### ANZEx 05.4008X

Ex tD A21 T85°C

IP65/67

- Dust excluding ignition proof trip-wire switch suited for hazardous area applications

### Standard Switches



EX55.4.00NBB

Contacts (safety)	Housing (material)	E-Stop Btn (Y / N)	IP Rating	Cable Entry (position)	Item Type	LDC	Catalogue No.
2 NO + 2 NC	Aluminium, Die-Cast	No	IP65, IP67	Left and Right		NR6101D	EX55.4.00NBB

### Switches with Glass Windows



EX55.4.00GWNBB

Contacts (safety)	Housing (material)	E-Stop Btn (Y / N)	IP Rating	Cable Entry (position)	Item Type	LDC	Catalogue No.
2 NO + 2 NC	Aluminium, Die-Cast	No	IP65, IP67	Left and Right		NR6101D	EX55.4.00GWNBB

### Lanyard Rope/Pull-wire

Developed to meet the Australian and New Zealand safety standards, these ropes are specially tested to work in conjunction with the NHP/Austrol NTW series pull-wire switches. Two types are available; PVC covered galvanised trip-wire and NHP tufflex fibre lanyard rope. Individual maximum lengths of lanyard must not exceed 100m when using NHP tufflex rope or 60m when using PVC coated galvanised trip wire.

### Installation Kits

Trip-wire install kits are complete kits which include a length of wire as well as the required fixing hardware. These are available for both single-sided and double-sided switches in both types of trip-wire.

### PVC Coated Galvanised Steel Pull-Wire Installation Kits

Description	Item Type	LDC	Catalogue No.
Trip Wire Install Kit 7mm PVC Coated Steel Wire 40m	K	NR6101D	PVCWIREKIT40M

## Lanyard

NHP tufflex is a high-performance multi-filament yarn spun from liquid crystal polymer. It is the only commercially available melt-spun LCP fibre in the world exhibiting low weight and exceptional strength and rigidity. It is five times stronger than steel and ten times stronger than aluminium.

### NHP Tufflex Pull-wire

Description	Item Type	LDC	Catalogue No.
NHP/Tufflex, Liquid Crystal Polymer fibre rope, (per metre)		NR6101D	55.1.53RLRPM
NHP/Tufflex, Liquid Crystal Polymer fibre rope, 105m roll		NR6101D	55.1.53RLR



55.1.53RLRPM

### PVC Coated Galvanised Steel Lanyard

Description	Item Type	LDC	Catalogue No.
Trip Wire, 5mm, Galvanised Steel, Red PVC Coated		NR6101D	55.1.33P
Trip Wire, 7mm Galvanised Steel Red PVC Coated (per metre), suitable for pull-wire switches		NR6101D	55.1.53P



55.1.33P

## Accessories

### Lanyard Installation Accessories

Description	Item Type	LDC	Catalogue No.
U" bolt 5mm wire clamp/shackle, suitable for pull-wire switches		NR6101D	55.1.52
5mm wire thimble, suitable for pull-wire switches		NR6101D	55.1.51
5mm stainless steel wire clamp/shackle, suitable for pull-wire switches		NR6101D	55.1.52SS
D Shackle 6mm, for pull-wire switches		NR6101D	55.2.18
5mm Stainless steel wire thimble, suitable for pull-wire switches		NR6101D	55.1.51SS
Wire support bracket, 5mm for NTW switch		NR6101D	55.1.50
Hook and eye turnbuckle 10mm, for pull-wire switches		NR6101D	55.1.64
Stainless steel D shackle, for pull-wire switches		NR6101D	55.2.19
Wire support bracket, 6mm stainless steel for NTW switch		NR6101D	55.1.50SS
Hook and eye turnbuckle 10mm Stainless Steel, for pull-wire switches		NR6101D	55.1.64SS
Trip wire switch tension spring, for pull-wire switches		NR6101D	55.2.46
Stainless Steel trip wire switch tension spring, for NTW switch		NR6101D	55.1.46SS
Trip wire switch tension spring stainless steel, for pull-wire switches		NR6101D	55.2.46SS



55.1.52

## Spare Parts

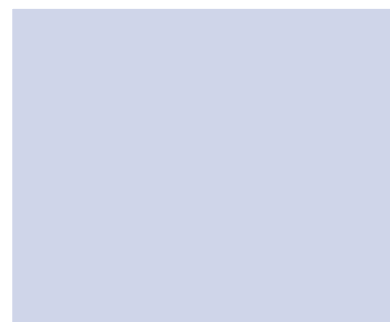
Description	Item Type	LDC	Catalogue No.
Shaft bellow for pull-wire switches		NR6101D	55.2.37

# 6 Ex Signalling

<b>Selection Chart</b>	<b>76</b>
<b>Hazardous Area Beacons</b>	
Moflash Beacons	<b>77</b>
Intrinsic Safe Beacons	<b>77</b>
<b>Hazardous Area Sounders</b>	
Moflash Sounders	<b>80</b>
Intrinsic Safe Sounders	<b>80</b>
Sounder / Beacons	<b>81</b>

**Item Type (Ordering information)**

- I** Indent item (non refundable)
- A** Assembled to order (non refundable)
- K** A kit item which contains a number of parts (may contain indent items)
- Blank** Stocked



**XENON BEACON**



**MANUAL CALL POINT**



**SOUNDER  
COMBINATION  
UNITS**



## Signalling Devices

### Selection Chart



Description	Protection Technique	Zone 0	Zone 1	Zone 2	Zone 20	Zone 21	Zone 22	Group
<b>Signalling Beacons</b>								
<b>Moflash BC150 and BC125 Beacons</b>								
<ul style="list-style-type: none"> <li>• LED or xenon light source</li> <li>• GRP or stainless steel bodies</li> <li>• Various lens and body colours</li> <li>• Wide range of operating voltages</li> </ul>	Ex d Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Signalling Beacons</b>								
<b>Moflash Ex I Beacons</b>								
<ul style="list-style-type: none"> <li>• LED light source</li> <li>• GRP bodies</li> <li>• Various lens colours</li> </ul>	Ex i	✓	✓	✓	✓	✓	✓	IIC IIIC
<b>Sounders</b>								
<b>Moflash SD150 and SD125</b>								
<ul style="list-style-type: none"> <li>• GRP or stainless steel bodies</li> <li>• Sound output 115dB @ 1 metre</li> </ul>	Ex d Ex tb		✓	✓		✓	✓	IIC IIIC
<b>Sounders</b>								
<b>Moflash Ex I Sounders</b>								
<ul style="list-style-type: none"> <li>• GRP body</li> <li>• Sound output 100dB @ 1 metre</li> </ul>	Ex i	✓	✓	✓	✓	✓	✓	IIC IIIC
<b>Sounder / Beacons</b>								
<b>Moflash SB150 and SB125</b>								
<ul style="list-style-type: none"> <li>• GRP or stainless steel bodies</li> <li>• Sound output 115dB @ 1 metre</li> <li>• Various lens and body colours</li> <li>• Wide range of operating voltages</li> </ul>	Ex de Ex tb		✓	✓		✓	✓	IIC IIIC

## Hazardous Area Sight Moflash Sight

### Zones 1, 2 and 21, 22 IECEX NEM 13.0030X

Ex d IIC T4/5/6

Ex tb IIIC T85/100/135 °C

IP66

Ambient temperature

−40°C + 55 / 60 / 70°C

### Features and Benefits

- Xenon strobe or LED light source
- LED selectable rotating, flashing or steady-on
- GRP or stainless steel construction
- Suitable for on-shore and off-shore applications
- Cable entry 4 x M20
- Stainless steel lens guard (optional)
- Available in different lens colour and enclosure colour
- More options available including status light and sounder combinations, contact NHP for more information



### BC150 Series GRP Beacon

These GRP beacons have a choice of two types of light source; either Xenon (strobe) with multiple flash rate and power ratings or an LED array with three status type indication (steady, flashing, rotate) options and two power ratings.

### LED Series

The LED lighting series can be operated by both AC and DC voltage and are available with a wide range of lens colours.

DIP switches can be changed to alter flash rate, rotation rate or steady on mode.

- Enclosure: GRP
- Available in different lens color and enclosure color
- Power supply 12-48V DC, 12-48V AC or 100-240V AC
- Cable entry 4 x M20, M25, 1/2"NPT, 3/4"NPT
- Length/Width: 150mm / 5.91" Height: 212mm / 8.35"

### AC Voltage Operated

Lamp (type)	Lamp (W max)	Lens (colour)	Illumination (mode)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
LED	10	Amber	Steady / Flashing / Rotating	100 - 240	RAL 3001, Signal Red	I	BC150AL10ACNNNARDN
LED	10	Green	Steady / Flashing / Rotating	100 - 240	RAL 3001, Signal Red	I	BC150GL10ACNNNARDN
LED	10	Red	Steady / Flashing / Rotating	100 - 240	RAL 3001, Signal Red	I	BC150RL10ACNNNARDN



BC150GL10ACNNNARDN

### DC Voltage Operated

Lamp (type)	Lamp (W max)	Lens (colour)	Illumination (mode)	Ue (V DC min-max)	Housing (colour)	Item Type	Catalogue No.
LED	10	Amber	Steady / Flashing / Rotating	12 - 48	RAL 3001, Signal Red		BC150AL10DCNNNARDN
LED	10	Blue	Steady / Flashing / Rotating	12 - 48	RAL 3001, Signal Red	I	BC150BL10DCNNNARDN
LED	10	Green	Steady / Flashing / Rotating	12 - 48	RAL 3001, Signal Red	I	BC150GL10DCNNNARDN
LED	10	Red	Steady / Flashing / Rotating	12 - 48	RAL 3001, Signal Red		BC150RL10DCNNNARDN



BC150AL10DCNNNARDN

### Xenon Lighting Series

The xenon lighting series can be operated by both AC and DC voltage and is available with a wide range of lens colours.

- Enclosure: GRP
- Available in different lens color and enclosure color
- Power supply 12-48V DC, 12-48V AC or 100-240V AC
- Cable entry 4 x M20, M25, 1/2"NPT, 3/4"NPT
- Length/Width: 150mm/5.91" Height: 212mm/8.35"

#### AC Voltage Operated

Lamp (type)	Lamp (W max)	Lens (colour)	Illumination (mode)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon	25	Amber	Flashing	100 - 240	RAL 3001, Signal Red	I	BC150AX20ACNNNARDN
Xenon	25	Blue	Flashing	100 - 240	RAL 3001, Signal Red		BC150BX20ACNNNARDN
Xenon	25	Green	Flashing	100 - 240	RAL 3001, Signal Red	I	BC150GX20ACNNNARDN
Xenon	25	Red	Flashing	100 - 240	RAL 3001, Signal Red		BC150RX20ACNNNARDN



BC150AX20ACNNNARDN

#### DC Voltage Operated

Lamp (type)	Lamp (W max)	Lens (colour)	Illumination (mode)	Ue (V DC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon	25	Blue	Flashing	12 - 48	RAL 3001, Signal Red	I	BC150BX20DCNNNARDN
Xenon	25	Green	Flashing	12 - 48	RAL 3001, Signal Red	I	BC150GX20DCNNNARDN
Xenon	25	Amber	Flashing	12 - 48	RAL 3001, Signal Red		BC150AX20DCNNNARDN
Xenon	25	Red	Flashing	12 - 48	RAL 3001, Signal Red	I	BC150RX20DCNNNARDN



BC150GX20DCNNNARDN

### BC125 Series SS Beacon

These stainless steel beacons have a choice of two types of light source: either xenon (strobe) with multiple flash rate and power ratings or an LED array with three status type indication (steady, flashing, rotate) options and two power ratings.

- Enclosure is made from stainless steel 316 and lens are made from tempered glass
- Two types of light source; either xenon or LED
- The design allows for termination inside the enclosure
- 360 degree light output around the vertical axis
- Dustproof and weatherproof

### Xenon Lighting Series

The Xenon lighting series can be operated by both AC and DC voltage and is available with a wide range of lens colours.

- Enclosure: stainless steel 316 and lens: tempered glass
- Available in different lens color and enclosure color
- Power supply 12-48V DC, 12-48V AC or 100-240V AC
- Cable entry 4 x M20, M25, 1/2"NPT, 3/4"NPT
- Length/width: 125mm/4.92" Height: 181.2mm/7.13"

#### AC Voltage Operated

Lamp (type)	Lamp (W max)	Lens (colour)	Illumination (mode)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon	25	Amber	Flashing	100 - 240	RAL 3001, Signal Red	I	BC125AX20ACNNNARDN
Xenon	25	Blue	Flashing	100 - 240	RAL 3001, Signal Red	I	BC125BX20ACNNNARDN
Xenon	25	Green	Flashing	100 - 240	RAL 3001, Signal Red	I	BC125GX20ACNNNARDN
Xenon	25	Red	Flashing	100 - 240	RAL 3001, Signal Red	I	BC125RX20ACNNNARDN



BC125AX20ACNNNARDN

## DC Voltage Operated

Lamp (type)	Lamp (W max)	Lens (colour)	Illumination (mode)	Ue (V DC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon	25	Blue	Flashing	12 - 48	RAL 3001, Signal Red	I	BC125BX20DCNNNARDN
Xenon	25	Green	Flashing	12 - 48	RAL 3001, Signal Red	I	BC125GX20DCNNNARDN
Xenon	25	Red	Flashing	12 - 48	RAL 3001, Signal Red	I	BC125RX20DCNNNARDN



BC125BX20DCNNNARDN

## Accessories

Description	Item Type	Catalogue No.
Lens guard stainless steel for BC/SB Range	I	MO50023

## Ex i Beacons

Description	Item Type	Catalogue No.
Ex i Beacon 15-28V DC Amber		EAE1500601

## Status Lights and Sounder Combination Units

Zones 1, 2 and 21, 22

IECEx NEM 13.0035X

IECEx NEM 13.0036X (sounder / beacon)

Ex d IIC T4/T5/T6

Ex tb IIIC T85°C/T100°C/T135°C

IP 66

**Ambient temperature:**

- 40° C + 70° C

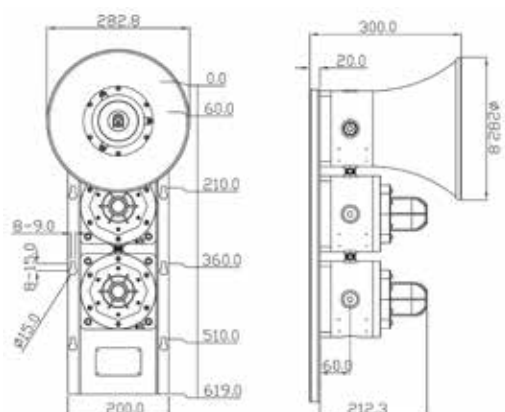
### Features:

Status lights and signalling units are built to order, in both GRP and stainless steel.

Combinations of beacons for status lights are available in xenon or LED technologies, and various voltages.

Electronic sounders, pushbuttons and junction boxes can also be incorporated into the design, including internal wiring to a junction box to save on installation time.

Please contact NHP for a quote today





## Hazardous Area Sound Moflash Sound

### Zones 1, 2 and 21, 22

IECEX NEM 13.0032X (Sounder)  
IECEX NEM 13.0036X (Sounder / Beacon)  
Ex d IIC T4/T5/T6  
Ex tb IIIC T85°C/T100°C/T135°C  
IP66  
Ambient temperature:  
40° C + 70° C

### Features and Benefits

- Sound output , 115 dB @ 1 metre
- 3 stage alarm 63 selectable tones
- Maximum current draw 1.5 amps
- GRP or stainless steel construction
- Suitable for on-shore and off-shore applications
- Cable entry 2 x M20
- Available in different lens color and enclosure color
- More options available including status light and sounder combinations, contact NHP for more information

### SD150 Series GRP Sounder



SD1501ACNNARD

Sound Lvl (dB @1m)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
115	100 - 240	RAL 3001, Signal Red	I	SD1501ACNNARD
115	12 - 48	RAL 3001, Signal Red		SD1501DCNNARD

### SD125 Series SS Sounder



SD1251ACNNARD

Sound Lvl (dB @1m)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
115	100 - 240	RAL 3001, Signal Red	I	SD1251ACNNARD
115	12 - 48	RAL 3001, Signal Red	I	SD1251DCNNARD

### EA150 Series Intrinsically Safe Sounder

#### Zones 0, 1, 2 and 20, 21, 22

Designed to be used with intrinsically safe isolators, please contact NHP for further information.

Sound Lvl (dB @1m)	Ue (V DC min-max)	Item Type	Catalogue No.
100	- 24		EA15006

## SB150-1 Series GRP Sounder/Beacon

### AC Voltage Operated

The Xenon lighting series can be operated by both AC and DC voltage and is available in different lens colours.

- Enclosure: stainless steel 316 and lens: tempered glass
- Available in different lens color and enclosure color
- Power supply 12-48V DC, 12-48V AC or 100-240V AC
- Cable entry 4 x M20, M25, 1/2"NPT, 3/4"NPT
- Length/width: 413mm /16.4"

#### AC

Lamp (type, power)	Lens (colour)	Sound Lvl (dB @1m)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon, 20W max	Amber	115	100 - 240	RAL 3001, Signal Red	I	SB1501AX15ACNNNARDN
Xenon, 20W max	Red	115	100 - 240	RAL 3001, Signal Red	I	SB1501RX15ACNNNARDN



SB1501RX15ACNNNARDN



SB1501RX15DCNNNARDN

#### DC

Lamp (type, power)	Lens (colour)	Sound Lvl (dB @1m)	Ue (V DC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon, 20W max	Amber	115	12 - 48	RAL 3001, Signal Red	I	SB1501AX15DCNNNARDN
Xenon, 20 W max	Red	115	12 - 48	RAL 3001, Signal Red	I	SB1501RX15DCNNNARDN

## SB125-1 Series SS Sounder/Beacon

### Xenon Lighting Series

The xenon lighting series can be operated by both AC and DC voltage and is available with a wide range of lens colours.

- Enclosure: stainless steel 316 and lens: tempered glass
- Available in different lens color and enclosure color
- Power supply 12-48V DC, 12-48V AC or 100-240V AC
- Cable entry 4 x M20, M25, 1/2"NPT, 3/4"NPT
- Length/width: 333mm /13.1"

#### AC

Lamp (type, power)	Lens (colour)	Illumination (mode)	Sound Lvl (dB @1m)	Ue (V AC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon, 20W max	Amber	Flashing	115	100 - 240	RAL 3001, Signal Red	I	SB1251AX15ACNNNARDN
Xenon, 20W max	Red	Flashing	115	100 - 240	RAL 3001, Signal Red	I	SB1251RX15ACNNNARDN



SB1251RX15ACNNNARDN



SB1251AX15DCNNNARDN

#### DC

Lamp (type, power)	Lens (colour)	Illumination (mode)	Sound Lvl (dB @1m)	Ue (V DC min-max)	Housing (colour)	Item Type	Catalogue No.
Xenon, 20W max	Amber	Flashing	115	12 - 48	RAL 3001, Signal Red	I	SB1251AX15DCNNNARDN
Xenon, 20W max	Red	Flashing	115	12 - 48	RAL 3001, Signal Red	I	SB1251RX15DCNNNARDN

# Cable Glands and Accessories

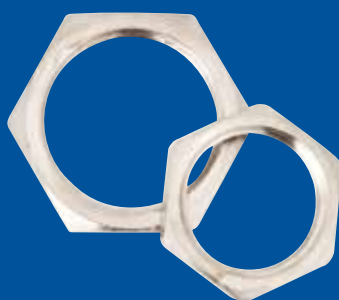
<b>Selection Chart</b>	<b>84</b>
<b>Hazardous Area Cable Glands</b>	
Ex Cable Glands	<b>85</b>
<b>Hazardous Area Adaptors, Reducers and Accessories</b>	
Plugs, Adaptors, Reducers and Accessories	<b>88</b>

**Item Type (Ordering information)**

- I** Indent item (non refundable)
- A** Assembled to order (non refundable)
- K** A kit item which contains a number of parts (may contain indent items)
- Blank** Stocked



## TERMINAL AND JUNCTION BOXES



## CABLE GLANDS FOR ARMOURED CABLES



## ADAPTORS AND REDUCERS



## CABLE GLANDS FOR NON-ARMOURED CABLES



## Cable glands and Accessories

### Selection chart



Description	Protection Technique	Zone 1	Zone 2	Zone 21	Zone 22	Group
<b>Glands for Non-Armoured Cables</b>						
<b>Cortem REV</b>						
• Nickle plated brass	Ex d	✓	✓	✓	✓	IIC
• Stainless steel	Ex e					IIIC
• IP66/67	Ex tb					
<b>Glands for Armoured Cables</b>						
<b>Cortem REVD</b>						
• Nickle plated brass	Ex d	✓	✓	✓	✓	IIC
• Stainless steel	Ex e					IIIC
• IP66/67	Ex tb					
<b>Barrier (resin fill) Armoured Cable Gland</b>						
<b>PX2KW</b>						
• Armoured (SWA) cables	Ex d, Ex e, Ex nR, Ex tD	✓	✓	✓	✓	I/II
• Barrier (resin fill) type cable gland						
• Triple certified						
• Nickel plated brass						
<b>Barrier (resin fill) Non-Armoured Cable Gland</b>						
<b>PXS52K</b>						
• Non Armoured cables	Ex d, Ex e, Ex nR, Ex tD	✓	✓	✓	✓	I/II
• Barrier (resin fill) type cable gland						
• Triple certified						
• Nickel plated brass						
<b>Plugs</b>						
<b>Cortem PLG</b>						
• Adaptors	Ex d	✓	✓	✓	✓	IIC
• Reducers	Ex e					IIIC
• Stopping plugs	Ex tD					
• Nickle plated brass						
• Stainless Steel						
• IP66/67						
<b>Cortem RE</b>						
• Adaptors	Ex d	✓	✓	✓	✓	IIC
• Reducers	Ex e					IIIC
• Nickle plated brass	Ex tD					
• Stainless Steel						
• IP66/67						
<b>Locknuts</b>						
<b>RE Series</b>						
• Nickle plated brass		✓	✓	✓	✓	IIC
• Stainless steel						IIIC

## Hazardous Area Cable Glands

### Ex Cable glands

#### Zone 1,2 and 21,22

IECEx CES 13.0005X

Ex d IIC Gb

Ex e IIC Gb

Ex tb IIIC Db

IP66/67

Ambient temperature:

-40° C + 110° C

#### Features and Benefits

- Comes with o-ring for IP protection
- Triple certified, Ex d, Ex e and Ex tb
- Nickel plated brass construction
- Stainless steel, polyamide and galvanized steel available upon request
- Female threads available upon request
- Intrinsically safe variants available (cable glands are partially painted light blue)



#### REV Glands For Non-Armoured Cables

The REV cable glands are suitable for use in Hazardous Areas with non-armoured cables. The REV series cable glands are designed to be inserted into explosion-proof junction boxes and/or lighting fixtures, plugs and other Hazardous Area equipment. They are provided with high-tech and high mechanical performance compression rings and gaskets with high-temperature resistance.

Thread (size)	H x W (mm)	Cable Diameter (mm min-max)	Material	Item Type	Catalogue No.
M16 x 1.5	45 x 28	5 - 10	Nickel-Plated Brass		REV01IB
M20 x 1.5	45 x 28	5 - 10	Nickel-Plated Brass		REVL1IB
M20 x 1.5	47 x 28	7 - 12	Nickel-Plated Brass		REV1IB
M25 x 1.5	45 x 37	7 - 12	Nickel-Plated Brass	I	REVL2IB
M25 x 1.5	46.5 x 37	12 - 18	Nickel-Plated Brass		REV2IB
M32 x 1.5	46.5 x 40	12 - 18	Nickel-Plated Brass	I	REVL3IB
M32 x 1.5	53.5 x 47	18 - 24	Nickel-Plated Brass		REV3IB



REV1IB

#### REVD Glands for Armoured Cables

The new REVD series cable glands are suitable for use in Hazardous Areas with danger of explosion to enable direct insertion of armoured cables into explosion-proof junction boxes, lighting fixtures, plugs and sockets, etc. The most important innovation is the use of one sealing ring on the inner and outer sheath of the cable compared to the previous kit with various sealing rings which tightens the incoming cable ensuring the Ex d protection. REVD series has a second sealing ring that tightens on the outer sheath of the cable to ensure the IP66/67 degree of protection avoiding the ingress of water, moisture, rain and dust.

Thread (size)	H x W (mm)	Outer Sheath Diameter (mm min-max)	Inner Sheath Diameter (mm min-max)	Material	Item Type	Catalogue No.
M16 x 1.5	69 x 28	8 - 15	5 - 10	Nickel-Plated Brass		REVD01IB
M20 x 1.5	70 x 28	8 - 15	5 - 10	Nickel-Plated Brass	I	REVDL1IB
M20 x 1.5	70 x 28	11 - 16	7 - 12	Nickel-Plated Brass		REVD1IB
M25 x 1.5	70 x 37	11 - 16	7 - 12	Nickel-Plated Brass	I	REVDL2IB
M25 x 1.5	71.5 x 37	16 - 24	12 - 18	Nickel-Plated Brass		REVD2IB
M32 x 1.5	80.5 x 47	24 - 31	18 - 24	Nickel-Plated Brass		REVD3IB



REVD1IB

## Barrier cable glands for armoured cables

### PX2K series



#### Zone 1,2 and 21,22

IECEX SIR 06.0044X

Ex d IIC/Ex e II /Ex nR II or Ex d IIC, Ex e II or

Ex tD A21 IP66

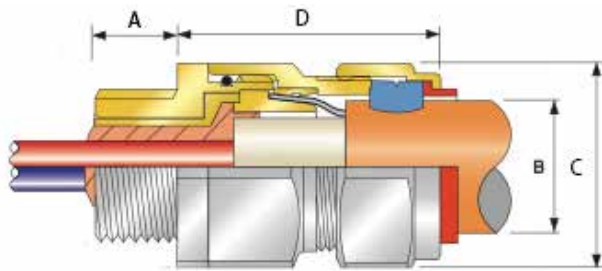
Ex d I/Ex e I or Ex d I or Ex e I

#### Features and Benefits

- Suitable for steel wire armour (SWA) cables
- Barrier (resin fill) type cable gland
- Triple certified Ex d, Ex e, Ex nR
- Nickel plated brass construction
- Stainless steel version available upon request
- Resin subject to expiry date

Thread (size) Thread (size)	Cable gland size	Min Thread length "A"	B Overall cable		Across corners "C"	Protrusion length "D"	Weight (Kgs)	Item type	Catalogue No.
			Min	Max					
M20	20S	15	9.5	15.9	33.6	58.5	0.163		PX2K20S16
M20	20	15	12.5	20.9	33.6	60.5	0.217		PX2K20S
M20	20	15	14	22	41.3	67.5	0.345		PX2K20
M25	25	15	18.2	26.2	41.3	67.5	0.345		PX2K25
M32	32	15	23.7	33.9	50.6	69.5	0.484		PX2K32

Other sizes available upon request



## Barrier cable glands for non-armoured cables

### PXSS2K series

#### Zone 1,2 and 21,22

IEEx d IIC/Ex e II/Ex nR II or Ex d IIC, Ex e II or

Ex tD A21

IP66

Ex d I/Ex e I or Ex d I or Ex e I

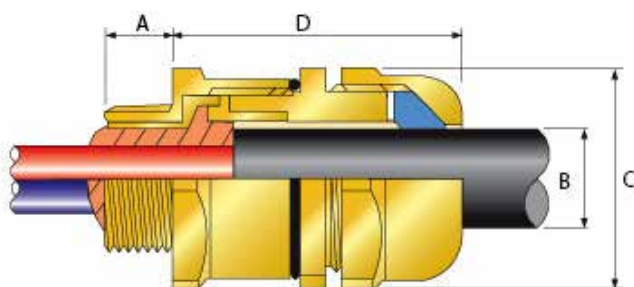
#### Features and Benefits

- Suitable for un-armoured cables
- Barrier (resin fill) type cable gland
- Triple certified Ex d, Ex e, Ex nR
- Nickel plated brass construction
- Stainless steel version available upon request
- Resin subject to expiry date



Thread (size) Thread (size)	Cable gland size	Min Thread length "A"	B Overall cable		Across corners "C" Material	Protrusion length "D"	Weight (Kgs)	Item type	Catalogue No.
			Min	Max					
M20	20S	15	3.1	8.7	32.9	58.5	0.200		PXSS2K20S16
M20	20	15	6.1	11.7	32.9	58.5	0.200		PXSS2K20S
M20	20	15	6.5	14.0	32.9	60.5	0.250		PXSS2K20
M25	25	15	11.1	20.0	40.5	67.5	0.403		PXSS2K25
M32	32	15	17.0	26.3	49.6	69.5	0.555		PXSS2K32

Other sizes available upon request



## Hazardous Area Adaptors, Reducers and Accessories

### Plugs, Adaptors, Reducers and Accessories



#### Zone 1, 2 and 21, 22

##### IECEX CES 10.0001X

Ex d IIC Gb

Ex e IIC Gb

Ex tb IIIC Db

IP66/67

#### Features and Benefits

- Triple certified, Ex d, Ex e and Ex tb
- Material, size and thread variants available upon request

#### Plugs

PLG series plugs are used to close the unused entries and are certified for multiple protection techniques. They have a hexagonal head so that they can only be opened with correct tools.

- With rabbeted hexagon for plugs with tapered thread,
- With external hexagon for plug with cylindrical thread.



PLG11B

Thread (size)	Material	Item Type	Catalogue No.
M16 x 1.5	Nickel-Plated Brass		PLG011B
M20 x 1.5	Nickel-Plated Brass		PLG11B
M25 x 1.5	Nickel-Plated Brass		PLG21B
M32 x 1.5	Nickel-Plated Brass		PLG31B
0.5" ISO 7-1	Nickel-Plated Brass	I	PLG1B
0.75" ISO 7-1	Nickel-Plated Brass		PLG2B
1" ISO 7-1	Nickel-Plated Brass		PLG3B
1.25" ISO 7-1	Nickel-Plated Brass	I	PLG4B
1.5" ISO 7-1	Nickel-Plated Brass	I	PLG5B

Note: Other sizes and stainless steel available upon request

#### Adaptors and Reducers

Reducers and adaptors are used to connect equipment, enclosures, pipes and hubs of different diameters and threads. They are certified for multiple protection techniques.



REBIF25GM2B

Thread (size - male)	Thread (size - female)	Material	Item Type	Catalogue No.
1" ISO 7-1	M20 x 1.5	Nickel-Plated Brass		REGM31F20B
1" ISO 7-1	M25 x 1.5	Nickel-Plated Brass		REGM31F25B
1.5" ISO 7-1	M25 x 1.5	Nickel-Plated Brass		REGM51F25B
1.5" ISO 7-1	M32 x 1.5	Nickel-Plated Brass		REGM51F32B
0.75" ISO 7-1	M25 x 1.5	Nickel-Plated Brass		REBIF25GM2B
1" ISO 7-1	M32 x 1.5	Nickel-Plated Brass	I	REBIF32GM3B
0.75" ISO 7-1	M20 x 1.5	Nickel-Plated Brass		REGM21F20B

Other thread types, sizes and materials available upon request

#### RE Series



Metric (ISO) Thread size	Metric (ISO)	Catalogue No.
M20	M16	REGIF20IM16B
M25	M20	REGIF25IM20B
M32	M20	REGIF32IM20B
M32	M25	REGIF32IM25B

Other sizes available upon request

#### Gaskets

Description	Item Type	Catalogue No.
Silicon Gasket M16		GRN-16
Silicon Gasket M20		GRN-20
Silicon Gasket M25		GRN-25

## Hazardous Area Adaptors, Reducers and Accessories

### Adapters, Reducers and Accessories

Reducers and adaptors are used to connect equipment, enclosures, pipes and hubs of different diameters and threads.

#### Features and Benefits

- Adaptors and reducers are constructed from nickel plated brass
- Other materials available upon request; stainless steel and galvanised steel



#### Adapters, Reducers and Accessories

Reducers and adaptors are used to connect equipment, enclosures, pipes and hubs of different diameters and threads.

- Adaptors and reducers are constructed from nickel plated brass
- Other materials available upon request; stainless steel and galvanised steel

#### LN Series

Brass locknuts are recommended when securing brass cable glands, unions, adaptors, reducers, and stopper plugs to a gland plate or into equipment. Zinc plated mild steel locknuts are a cost effective alternative to brass locknuts and should only be used in dry, low humidity conditions.

Thread (size)	ThreadLen (mm)	Material	Item Type	Catalogue No.
M16 x 1.5	3.2	Brass		LN5-16
M20 x 1.5	3.2	Brass		LN5-20
M25 x 1.5	3.2	Brass		LN5-25
M32 x 1.5	3.2	Brass		LN5-32
M63 x 1.5	3.2	Brass		LN5-63



LN5-16



## Industry Recognised Hazardous Area Training from NHP and Competency Training (CT)

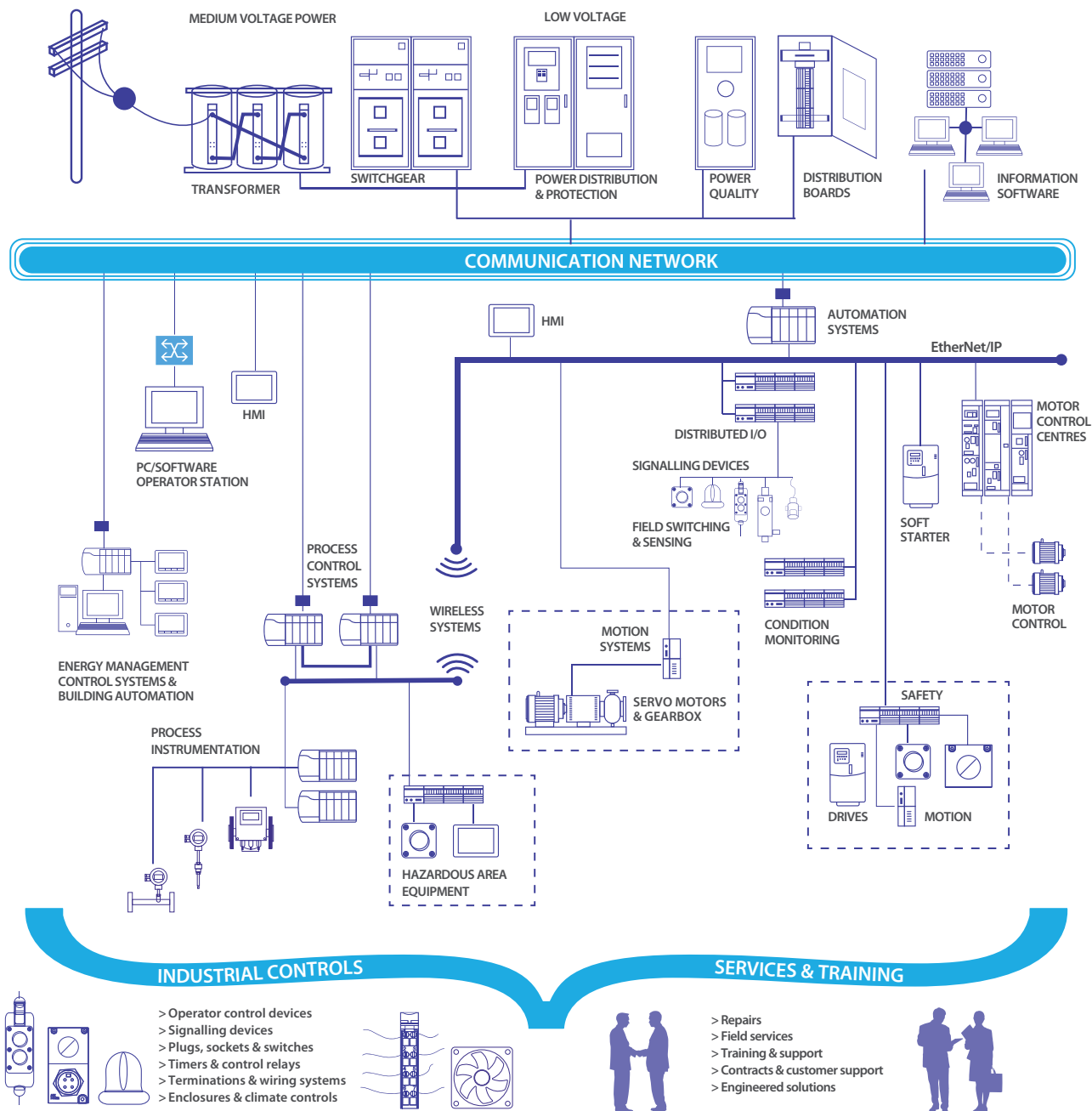
NHP are pleased to announce that we have entered an exclusive collaboration agreement with nationally recognised training provider, Competency Training (CT) for the hosting of Hazardous Area training classes.

In line with NHP's commitment to value-add training and services for our customers, this agreement will enable the two companies to jointly service customer training in Australia and New Zealand.

CT are an Australian registered training organisation providing professional services and technical training in areas including electrical equipment for Hazardous Areas. CT are also recognised under the IECEx - Recognized training provider program allowing them to provide training services related to the selection, design, inspection, installation, maintenance, repair, overhaul and reclamation of equipment operating in explosive (Ex) atmospheres.

The courses that are currently on offer from NHP and CT include:

- Installation and Maintenance of electrical equipment in Hazardous Areas
- Installation and Maintenance of electrical equipment in Hazardous Areas Refresher
- Hazardous Areas Awareness
- Hazardous Area Awareness Online
- Hazardous areas
- Classification and Design
- Hazardous Areas Classification
- Hazardous Area Compliance
- Certificate IV Hazardous Areas – Electrical



# We integrate world's best products to provide value-add solutions

At NHP, we are more than simply a product supplier. NHP provide a range of products, services and expertise to help our customers create electrical and automation solutions that improve our world. Our local expertise across a range of diverse industries is backed by the knowledge base of world class supply line partners.

This enables NHP to customise integrated solutions that focus on making systems smarter, safer, more secure, reliable and efficient. From low or medium voltage power distribution solutions, to process automation, to smarter buildings, NHP is helping to create a better connected world.



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