



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

### UNIT VERIFICATION

Certificate No.: **IECEx KSCP 24.0058X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2024-11-28

Applicant: **Rector Energy Services Sdn Bhd**  
B1-12, Midfields Square, Jalan 11/108C, Sungai Besi,  
Kuala Lumpur, 57100 ,  
**Malaysia**

Equipment: **Pressurized Habitat Pro Safe 1.0**

Serial number(s) or  
Unique Identification: **SAH-001**

Type of Protection: **pressurized room "p" and artificially ventilated room "v"**

Marking: **Ex pb IIB T4 Gb**  
**-20 °C ≤ T<sub>amb</sub> ≤ +45°C**

Approved for issue on behalf of the IECEx  
Certification Body:

**Sang He Kim**

Position:

**President of the Board**

Signature:  
(for printed version)

Date:  
(for printed version)

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**Chorzowska 150 Street**  
**Katowice 40-101**  
**Poland**





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Date of issue: 2024-11-28

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Manufacturer: **Rector Energy Services Sdn Bhd**  
B1-12, Midfields Square, Jalan 11/108C, Sungai Besi,  
Kuala Lumpur, 57100 ,  
**Malaysia**

Manufacturing  
locations: **Rector Energy Services Sdn Bhd**  
B1-12, Midfields Square, Jalan  
11/108C, Sungai Besi,  
Kuala Lumpur, 57100 ,  
**Malaysia**

This Unit verification certificate is issued as verification that the Apparatus identified on page 1, was assessed and tested and found to comply with the IEC Standard list below. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS :

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

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-13:2017** Explosive atmospheres - Part 13: Equipment protection by pressurized room "p" and artificially ventilated room  
Edition:2.0 "v"

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

## TEST & ASSESSMENT REPORTS:

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

Test Report:

[PL/KSCP/ExTR24.0058/00](#)

Quality Assessment Report:

*As this is a Unit Verification Certificate, no QAR is applicable as this certificate is specific to the items listed by serial number or other unique identification.*



# IECEx Certificate of Conformity

Certificate No.: **IECEx KSCP 24.0058X**

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Date of issue: 2024-11-28

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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Pressurized Habitat, Pro Safe 1.0 is a product designed to perform hot work in areas classified as hazardous without shutting down the facility or plant. The habitat enclosure is being overpressure to prevent ingress of potentially explosive substances and gases. Hot work activities such as welding can be carried out within the habitat enclosure. The Pressurized Habitat, Pro Safe 1.0 is assembled with all the following modules created from IECEx certified parts and as sum become a completed system:

- Main Control Unit (MCU),
- Air Inlet Unit (AIU),
- Air Outlet Unit (AOU),
- Pressure Temperature Unit (PTU),
- Remote Gas Detector (RGD),
- Remote Emergency Stop (ESB).

Refer to certificates addendum.

## SPECIFIC CONDITIONS OF USE: YES as shown below:

- The protective gas medium shall be clean dry air from non-hazardous area only, the temperature of the protective gas shall not exceed 45 °C.
- Habitat parts which are exposed frequently to UV light (sun, welding arcs) need to be visually inspected during periodic inspections according to IEC 60079-17, by checking any obvious degradation or becoming brittle.
- The plugs of the plug and socket system type GHG shall be protected from mechanical hazards.
- In the event that the Pressurized Habitat, Pro Safe 1.0 is moved from one location to another, verification tests shall be carried out in accordance with clause 6.4 of IEC 60079-13.

## Annex:

[Addendum\\_IECEx KSCP 24.0058X.pdf](#)



## Addendum to IECEx Certificate

Reference Number.....: **IECEx KSCP 24.0058X**

Issue.....: Issue 0

### Description:

The Pressurized Habitat, Pro Safe 1.0 is a product designed to perform hot work in areas classified as hazardous without shutting down the facility or plant. The habitat enclosure is being overpressure to prevent ingress of potentially explosive substances and gases. Hot work activities such as welding can be carried out within the habitat enclosure. The Pressurized Habitat, Pro Safe 1.0 is assembled with all the following main modules created from IECEx certified parts and as sum become a completed system:

### MAIN CONTROL UNIT

The Main Control Unit (MCU) is designed to control the overall Pressurized Habitat. It takes control of the Air Inlet Unit, Air Outlet Unit and all the hot work related activities. The module is designed as a transport device, which is ensured by a stainless steel frame on which a set of Ex electrical devices connected to each other is built, constituting a functional whole.

### AIR INLET UNIT

The Air Inlet Unit (AIU) is designed to ensure that ambient air being ducted into a pressurized enclosure is free of flammable gases. The unit consists of a damper which can automatically close the duct if a hazard gas is detected. The module is designed as a transport device, which is ensured by a stainless steel construction of duct with a set of Ex electrical devices connected to each other, constituting a functional whole. Two gas detectors are installed in front of the damper which detect the level of flammable gas. The damper will close automatically and stop the air intake when the alarm system is triggered.

### AIR OUTLET UNIT

The Air Outlet Unit (AOU) is designed to monitor the air flowing out from the pressurized enclosure. The unit consists of a flow sensor to detect the air flow at the minimum purge rate. The module is designed as a transport device, which is ensured by a stainless steel construction of duct with a set of Ex electrical devices connected to each other, constituting a functional whole.

### PRESSURE TEMPERATURE UNIT

The Pressure Temperature Unit (PTU) is designed to monitor the working pressure and temperature within the pressurized enclosure. It consists of a unit of pressure sensor & a unit of temperature sensor. The module is designed as a transport device, which is ensured by a stainless steel frame on which a set of Ex electrical devices connected to each other is built, constituting a functional whole.

### REMOTE GAS DETECTOR




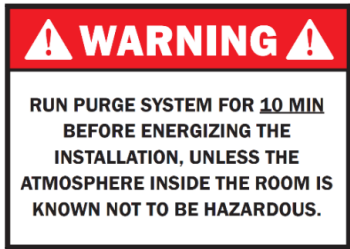
The Remote Gas Detector (RGD) is designed to detect the air quality inside or outside the pressurized enclosure. It consists of a unit of flammable gas detector, optional for oxygen gas detector and hydrogen sulphide gas detector. The module is designed as a transport device, which is ensured by a stainless steel frame on which a set of Ex electrical devices connected to each other is built, constituting a functional whole.

### REMOTE EMERGENCY STOP

The Remote Emergency Stop is designed as a transport device to install the emergency stop button within the pressurized enclosure. The personnel who works within the enclosure can activate the emergency stop button when there is an emergency happen. The module consists of a unit of beacon and sounder, it will alert the personnel in the event there is any alarm activated.

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**The equipment has the following marking and warning:**

Item	Detail
Manufacturer's name or Registered trade mark	Rector Energy Services Sdn Bhd 
Address	B1-12, Midfields Square, Jalan 11/108C, Sungai Besi, 57100 Kuala Lumpur, Malaysia
Equipment name	Pressurized Habitat
Type identification	Pro Safe 1.0
Serial no. and date of manufacture	Serial no: SAH-001 Date of manufacture: 16.09.2024
IECEX Certificate number	IECEX KSCP 24.0058X
Ex Code	Ex pb IIB T4 Gb
Ambient	$-20\text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +45\text{ }^{\circ}\text{C}$
Rating	240VAC, 5A, 50/60 Hz, max. 100 W
Other information	<ul style="list-style-type: none"> <li>- Volume of Enclosure: 32 m<sup>3</sup></li> <li>- Total Volume: 40 m<sup>3</sup></li> <li>- Minimum Purging Volume: 320 m<sup>3</sup></li> <li>- Minimum Purging Flow Rate: 3400 m<sup>3</sup>/h</li> <li>- Minimum Purging Duration: 10 minutes</li> <li>- Minimum Over Pressure: 25 Pa</li> <li>- Maximum Over Pressure: 90 Pa</li> <li>- Type of Protective Gas: Clean Dry Compressed Air</li> <li>- Maximum Temperature of Protective Gas: + 45°C</li> </ul>
Warnings	<div>   </div> <div>  </div>

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**The following Ex certified items form modules of the Pressurized Habitat, Pro Safe 1.0:**

Name	Type/Model	Manufacturer	Ex Protection	IECEX Certificate No.
Distribution Panel	HRMD91-IVB	Warom	Ex db IIB+H2 T6 Gb	IECEX CML18.0157X Issue No: 1
Cable Gland	501/453/RAC	Hawke	Ex db IIC Gb	IECEX BAS 06.0013X Issue No: 12
Barrier Gland	ICG/653/UNIV	Hawke	Ex db IIC Gb	IECEX CML 18.0131X Issue 4
Bulkhead Receptacle & Connectors Plug	Intrum Ex N-BR1-M-B-S- X-0-4-X-A	Hawke	Ex db e IIC Gb	IECEX BAS 06.0018X Issue 15
Stopping Plug	BPT M20 x 1.5 BPT M32 x 1.5 BPT M25 x 1.5	Warom	Ex db IIC Gb	IECEX LCIE 15.0070U Issue 0
16A Plug  16A Socket	GHG 511 7306 R0001  GHG 511 4306 R0001	Crouse-Hinds	Plug: Ex db eb IIB/IIC T6 Gb  Socket: Ex db eb IIC T6 Gb	IECEX BVS 17.0045X Issue 2
Emergency Stop Button	BZA8050-40064	Warom	Ex d e IIC T6 Gb	IECEX CQM 11.0018 Issue 0
Beacon & Sounder	BBJ81-Y	Warom	Ex d ib IIC T6 Gb	IECEX CQM 12.0035X Issue 0
Position Switch	HRZX91-Z-II	Warom	Ex db IIC T6 Gb	IECEX NEP 20.0010X
Reducer, Adaptor	476	Hawke	Ex db IIC Gb	IECEX BAS 11.0037X Issue 4
Multicontacts	PXN12C	Marechal	Ex e IIC T5 Gb	IECEX LCIE 14.0041X Issue 0
LEL Gas Detector	GT-CT8900	Gasensor	Ex db IIC T6 Gb	IECEX TUR 21.0027X Issue 1
Stopping Plug	D5.3 / 4S 3/4" NPT	HLS	Ex db IIC Gb	IECEX SIR 07.0048X Issue 7
Actuator	ExMax-5.10-SF	Schischek	Ex d [ia] IIC T6 / T5 Gb	IECEX PTB 07.0057X Issue 1
Junction box	PL511	Hawke	Ex eb IIC T5 Gb	IECEX BAS 14.0123X Issue 6
Flow Sensor	ExReg-V300-A	Schischek	Ex eb mb ib [ia Ga] IIC T6 Gb	IECEX EPS 12.0028 Issue 4

Stopping Plug	487	Hawke	Ex eb IIC Gb	IECEX BAS 11.0071X Issue 8
Temperature Sensor, Pressure Sensor	ExBin-D  ExBin-P-100	Schischek	Ex e mb [ia Ga] IIC T6 Gb	IECEX EPS 14.0074 Issue 2
H2S Gas /O2 Detector	GQ-CE8900	Gasensor	Ex db ib IIC T6 Gb	IECEX TUR 21.0028X Issue 1
Electrical Blower	Exstream 400	Woodcock & Wilson	Ex h IIB T4 Gb	IECEX SIR 17.0076X Issue 0
Solenoid valve	495900	Parker Hannifin Manufacturing S.r.l	Ex db mb IIC T4 Gb	IECEX LCI 06.0004X Issue 5