

# PETRAS

## SAFETY MANUAL

### IEC 61508



## TABLE OF CONTENT:

1. Purpose .....	3
2. Safety function specification .....	3
3. Identification.....	3
4. Service conditions .....	3
5. Safety instructions - Installation - Operation.....	3
6. Failure mode - Failure rates ( $\lambda$ ) - Safe failure fraction (SFF).....	3
7. Classification - Hardware fault tolerance (HFT).....	3
8. Maintenance - Preventive maintenance .....	4
9. Periodic functional test.....	4
10. Contact.....	4

## **1. Purpose**

This safety manual contains the additional informations for the use of Petras actuators in safety instrumented system (IEC 61508).

All information on instructions, operation and maintenance can be found in the IOM-EN manual.

## **2. Safety function specification**

The safety function of Petras actuators is defined as follow :

"To move the actuator to the safe position (open or closed), upon demand"

## **3. Identification**

The actuator part numbers and serial number are shown on the nameplate of the device. A detailed data sheet is available on request from Petras.

## **4. Service conditions**

Standard operating temperature : -20°C à + 70°C

The maximum allowable static pressure is mentioned on the identification plate of the actuators.

The ATEX classification is mentioned on the identification plate of the actuators and detailed in the Instructions, Operations and Maintenance manual (IOM-EN rev 5 - Part 3).

## **5. Safety instructions - Installation - Operation**

Safety instruction are detailed in the Instructions, Operations and Maintenance manual (IOM-EN rev 5 - Part 2 & 3)

Installation recommendations and settings procedures are detailed in the Instructions, Operations and Maintenance manual (IOM-EN rev 5 - Part 4)

## **6. Failure mode - Failure rates ( $\lambda$ ) - Safe failure fraction (SFF)**

Informations about failure mode, failure rates and safe failure fraction are provided in UL certificate UL-US-2558746 and assessment UL report number SR6027348 - available on request.

## **7. Classification - Hardware fault tolerance (HFT)**

Petras actuators are Class A devices according to (IEC 61508-2)

Informations about HFT are provided in UL certificate UL-US-2558746 and UL assessment report number SR6027348 - available on request.

## **8. Maintenance - Preventive maintenance**

Maintenance instructions are detailed in the Instructions, Operations and Maintenance manual (IOM-EN rev 5 - Part 5).

Within the framework of functional safety (IEC 61508), we recommend carrying out preventive maintenance every 6 years. The following operations are recommended :

- Visual control of the actuator
- Internal and external leak control
- Disassembly of the actuator - Visual control of parts
  - Visual control of the rack and pinion mechanism
  - Visual control of the pistons and the cylinders
  - Visual control of the springs (single acting)
- Replacement of seals
- Assembly and test

We recommend replacing the springs of single-acting actuators every 20 years.

These operations must be carried out according to the maintenance instructions of IOM-EN-rev 5 manual.

## **9. Periodic functional test**

A functional test consists of performing a complete operating cycle (O/F or F/O depending on the safety function configuration).

The periodicity information of the tests are provided in UL assessment report number SR6027348 - available on request.

## **10. Contact**

PETRAS S.A.S.  
560 route de Rians  
83910 Pourrières - France  
Tel. +33 4 98 04 13 40

vente.petras@petras.fr  
www.petras.fr