

# CHALWYN

DIESEL PROTECTION SYSTEMS

SSX-102 & SSX-202 Hazardous Area Solenoids

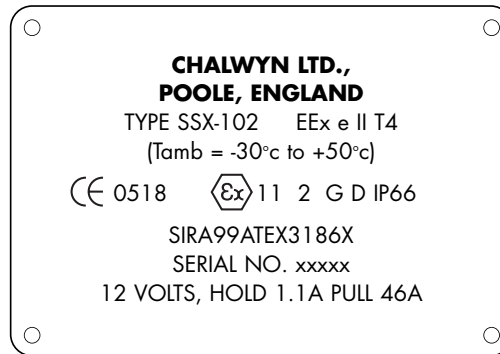
## **INSTALLATION, OPERATION & MAINTENANCE**

## DESCRIPTION

Two types, both designed as Category 2G/D equipment for application in a zone 1, group II, T4 hazardous area :

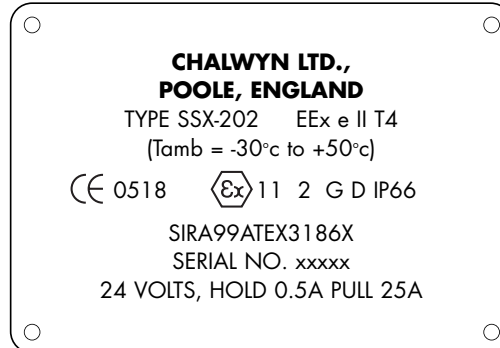
### Type SSX-102

Marked as :



### Type SSX-202

Marked as :



### Materials

These solenoids are manufactured using Araldite epoxy adhesive and an elastomeric cable seal. The characteristics of these materials with regard to attack by aggressive substances should be taken into account when installing or using the product in a hazardous area. (See also under "Application").

### IMPORTANT NOTE:

Solenoids SSX-102 and SSX-202 are designed as part of the Chalwyn Series 200 Diesel Engine Shut Down Control System. Full details this are given in the Series 200 Installation, Operation and Maintenance manual. Should these solenoids be connected to any alternative system, this must be suitably certified and meet the requirements specified within.

## APPLICATION

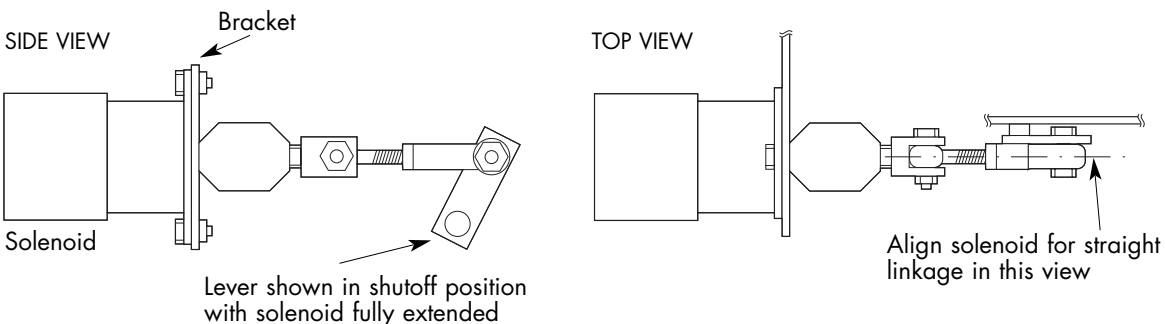
Chalwyn flameproof solenoids are designed for use in an automotive engine bay environment for applications such as operating a fuel pump stop lever or an intake air shut down valve. If it is proposed to use in a different environment, Chalwyn must first be consulted. In particular it should be noted that the solenoids must not be:

- a) Mounted to components or installed in such a way that the effective ambient temperature exceeds 50°C.
- b) Exposed to aggressive substances in terms of attacking the Araldite epoxy adhesive and elastomeric seals used in the build of the solenoids.

## INSTALLATION

Install the flameproof solenoid such that the system is 'fail safe' ie power on to move the controlled equipment to the 'run' condition, power off (or loss of power) to spring return to the 'stop' condition.

### SUGGESTED LAYOUT



The solenoid control circuit must be designed to ensure the solenoid is powered and switched from 'pull' to 'hold' before the engine is cranked to start.

It is **IMPORTANT** that the start key switch for the engine is wired such that between starting attempts it is not necessary to re-energise the pull coil of the solenoid. The starting instructions for the operative must clearly state that the key switch should not be returned to the solenoid de-energised position whilst attempting to start. If this requirement cannot be complied with, or if the engine is an unattended unit fitted with an automatic start arrangement, the control system providing the power to the solenoids must be designed to restrict the number of times the pull coil is energised to a maximum of 6 times per 30 minutes followed by a 30 minute rest before repeating the cycle.

## INSTALLATION (cont.)

### SOLENOID TYPE SSX-102

**Supply:** 12 volts d.c.

**Pull coil:** Must not be powered for more than 0.2 seconds continuously.

**Hold coil:** Suitable for continuous operation.

**NOTE:**

*The control system must include a back up safety device which de-energises the pull coil if it is energised for more than 14 seconds continuously.*

1. The blue wire is the common return and must be connected to the negative terminal of the supply.
2. The yellow/green wire is the pull coil supply (46 amps at 23°C).
3. The brown wire is the hold coil supply, (1.1amps at 23°C).
4. Outer braiding of the supply cable to be earthed at the supply end.
5. The solenoid should be earthed using the earth tag of the cable gland.

### SOLENOID TYPE SSX-202

**Supply:** 24 volts d.c.

**Pull coil:** Must not be powered for more than 0.2 seconds continuously.

**Hold coil:** Suitable for continuous operation.

**NOTE:**

*The control system must include a back up safety device which de-energises the pull coil if it is energised for more than 14 seconds continuously.*

1. The blue wire is the common return and must be connected to the negative terminal of the supply.
2. The yellow/green wire is the pull coil supply (25 amps at 23°C).
3. The brown wire is the hold coil supply, (0.5 amps at 23°C).
4. Outer braiding of the supply cable to be earthed at the supply end.
5. The solenoid should be earthed using the earth tag of the cable gland.

**NOTES:**

**a) Suitable glanding must be used at the supply end of the cable.**

**b) The length of the supply cable must not be increased from that supplied.**

## **MAINTENANCE**

Both types of solenoid are sealed units. The cable gland should not be loosened or removed. Should the solenoid malfunction or if the cable or gland are significantly damaged the unit should be returned to Chalwyn Equipment for inspection. Whilst in service weekly visual inspection of the assembly should be carried out to check for damage or significant deterioration of the solenoid, associated mechanism, gland or cable. The equipment must be withdrawn from service for rectification work should significant damage or deterioration be observed.

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