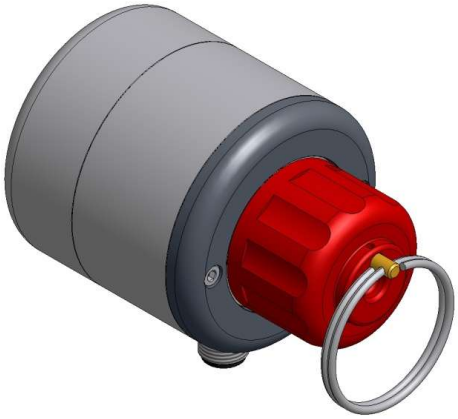
Ci IS8B Solenoid actuator



Item numbers covered by this datasheet

305450	Ci IS8B Solenoid only
305451	Ci IS8B Solenoid & Manual
305450-50	Ci IS8B Solenoid Diode
305451-50	Ci IS8B Solenoid Manual Diode

General

The Solenoid actuator is part of the Control Inert (Ci) series and is designed to activate the Ci IV8 valves, either directly or with the use of either Ci PA8 or SV CiV adapter.

The Ci IS8B has superior performance with regards to shock, vibration and reliability, as it utilizes neodymium magnets, hence reducing the number of moving parts to a minimum.

The Ci IS8B is available either as a standard solenoid or as a solenoid with built-in manual activator.
It features a built-in End Of Line (EOL) resistor allowing monitoring of the complete activation circuit. A built-in current limiter reduces the power consumption after it has been activated.

Specifications

Voltage (Activation):	24 VDC
Max.:	36 VDC, 100% duty cycle
Min.:	21 VDC
Current (Activation):	0.9A (minimum 0.6 amp for 10 msec) 1.34 A @ 36 VDC
Max. monitoring:	20 mA
No triggering max.:	100mA 120 sec.
Power limited circuit:	The device contains a limited energy circuit
Manual activation:	Rotation < 225° clockwise, < 1 Nm
Temperature:	
Operation:	-25 to +70°C (mounted on valve)
Storage:	-60 to + 100°C (not mounted on valve)
Resistance:	
Monitoring:	6800 Ω (EOL resistor dependent), (only with “Reverse Polarity Activation”) The -50 version uses a diode, instead of a resistor.
Activation:	27 Ω (coil only)
Valve interface:	M20×1.0 (male) Pin ø6mm, Force exceeds 350N with pin extracted.
Electrical connection:	M12 male connector (optional: Cable with cable gland M12x1.5)
Integrity:	IP67 (with cable installed)
Pin configuration:	
Activation:	pin 1+ 2 +ve, pin 3+4 -ve
Monitoring	pin 1+ 2 -ve, pin 3+4 +ve (reversed polarity)
Dimension (øD×L):	ø64× 76 mm (installed ø64×68 mm) (solenoid only) ø64× 108 mm (installed ø64×100 mm) (with manual)
Weight:	1.1 kg

Marking

Fire Eater Logo, Ci IS8B, 24VDC 0.9A, Serial number, CE1116, , YY
Manual knob actuation direction arrows
White ø10 label "Ul2127"

Installation

The Ci IS8B is screwed into the IV8 valve actuator connection and tightened by hand (10Nm)
The device may be mounted in any position from vertical to horizontal.
Before installing the Ci IS8B it must be checked that it is reset (plunger app. 1mm submerged), failure to do so may cause unintended discharge of system.

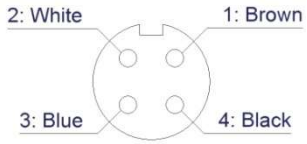
The M12 connector is a male, screw type, with 4 pins. A corresponding cable (supplied with the actuator) must be used.

1: +Ve Brown

2: +Ve White

3: -Ve Blue

4: -Ve Black



Plug front view (actuator)
Cable colors

Operating

Electrical

1. Follow control panel instruction for activation of fire extinguishing.
   (Current is applied to pin 1/2 and 3/4 from the control panel)
2. Current is applied to pin 1/2 and 3/4 from the control panel.

Manual

1. Break the seal.
2. Remove the pin.
3. Rotate the knob min. ¾ of a turn clockwise.

Maintenance

After activation the Ci IS8B must be reset manually, using the following procedures to prevent accidental spontaneous Ci-IV8 valve discharge.

Solenoid only actuator:

1. Close Hand Wheel Valve (HWV).
2. Disconnect discharge hose from Ci-IV8 and manifold.
3. Disconnect any connected PA circuitry (DN-6 hoses) from Ci-IV8.
4. Check and ensure that the Ci-IV8 set screw for the actuator plug is tight.
5. Unplug the electrical connection.
   Unscrew the Ci IS8B from the Ci-IV8 valve.
6. Connect the Ci IS8B to FE tool 305495 Ci Actuator Reset Tool.
   (Make sure that the reset tool is screwed all the way back before connecting)
7. Operate the reset tool until a low “click” is heard from the Ci IS8B and then turn the knob approx. one more turn.
   The actuator is reset when the knob becomes significantly harder to turn (do not exceed 10Nm)
8. Turn back the reset tool.
   Remove the Ci IS8B from the tool.
9. Check that the plunger is submerged into the body approximately 1 mm.
10. Refit the Ci IS8B to the discharge valve as described under installation.
11. Reconnect any PA circuitry to the Ci-IV8 valve.
12. Reconnect the discharge hose to the Ci-IV8 valve and manifold.
13. Reconnect the electrical connection to the Ci-IS8B.
14. Open and secure HWV according to standard operating procedures.

Solenoid & Manual actuator:

As the Solenoid only with these deviations (also applies when it has been activated electrically)

1. Turn back the manual activation knob (counterclockwise) (pin and seal must be removed)
2. Use reset tool as described in the Solenoid only.
3. Gently turn the manual knob clockwise until increased torque is noticed.
4. Turn the manual knob back between 45° and 180°, until the locking pin can be inserted fully.
5. Secure the locking pin with fine sealing wire and seal through the Ø2 holes in the knob and pin.

Routine testing

To verify correct function of the electrical actuation system the solenoid may be activated annually.
To verify sufficient force of the Ci IS8B a scale may be used to measure the force.
A force of 350N is required to start pushing back the piston.

Special configurations

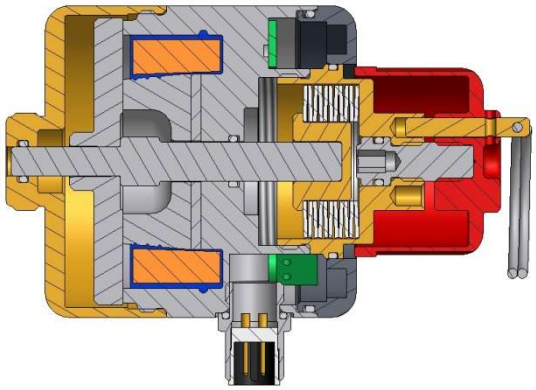
These special configurations are available for the Ci-IS8B:

- EOL resistors minimum 1K2
- Special cables can be fitted, they must fit through a cable gland with M12×1.5 connection.
- Grounding can be fitted but should generally not be used due to ground loop issues, it is recommended that the user investigates these issues before ordering.

Section drawings

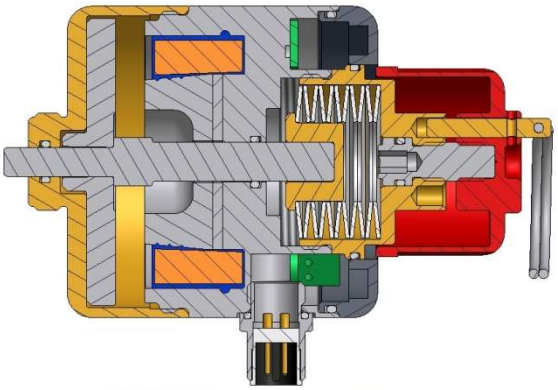
Ci IS8B in normal (non activated) position

The armature is held in the closed position by a magnetic field created by the permanent magnet in the actuator body.



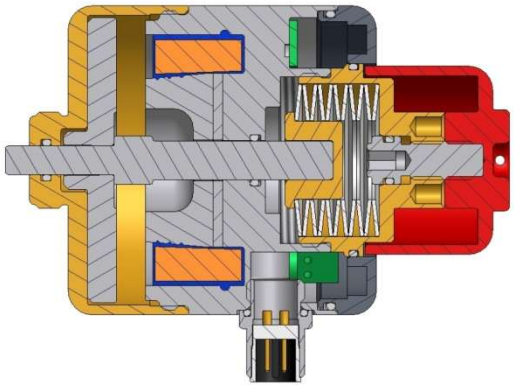
Ci IS8B in fully activated position (electrical actuation)

When an electrical current passes through the coil windings in the correct direction, the magnetic field is weakened, releasing the armature. The armature, rod and piston are driven forward by the Belleville springs, pushing the front of the rod out of the actuator. This actuates the Ci IV8 valve.



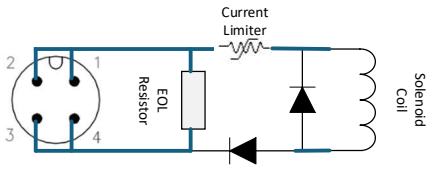
Ci IS8B in fully activated position (manual actuation)

When the manual knob is turned clockwise, the knob screw pushes on the piston. This lifts the armature away from its seat, weakening the magnetic field. Once the magnetic field has been weakened, the armature, rod and piston are driven forward by the Belleville springs, pushing the front of the rod out of the actuator. This actuates the Ci IV8 valve.

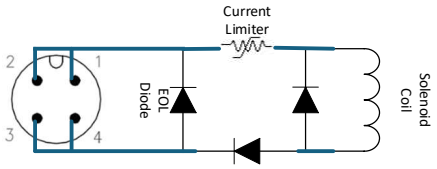


Symbols of electrical system of Ci IS8B

Circuit with EOL resistor



Circuit with EOL Diode



Standards & approvals

List of standards and approvals.

EN12094-4 (Fixed firefighting systems)
Certificate No (CNPP): 116-CPR-017

UL Regonized according to UL864 (Standard for control units and accessories for fire alarm systems)
Certificate No (UL): EX15566

Declaration of Performance

Nr. Ci IS8B 2014-11

1. Product type identification:
   Ci IS8B
2. Type identification:
   "Ci IS8" and serial number, Logo
   CE mark
3. Intended use:
   Inert gas Fire suppression system
4. Manufacturer:
   Fire Eater A/S
   Vølundsvej 14, DK-3400 Hillerød
   Denmark
5. NA
6. Assessment system:
   System 1
7. Certification body for this product is
   CNPP Cert
   CNPP certificate: 1116-CPR-017
   Test report: CNPP GH 07 0002-4
8. NA
9. Performance

Product type	Electrical Actuator Electrical @ Manual Actuator
Operating temp	-20 to +70 °C
Type of system	Inert gas system
Voltage Norm:	24VDC
Max:	36VDC
Min:	21VDC
Current:	0.9Amp (1.34 A@36V)
Monitoring current:	20mA
Manual Activ.:	Rotation < 225° < 1Nm
Force	>550 N
Mounting	Any

10. On behalf of Fire Eater

Signature: _____

Michael Kroneder, CTO

Hillerød 2014-11-05