

## Ci IS8B Solenoid actuator

### Item numbers covered by this datasheet

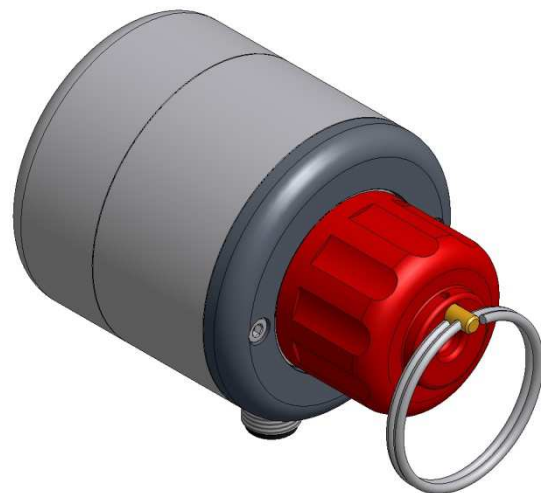
305450	Ci IS8B Solenoid only
305451	Ci IS8B Solenoid & Manual

### 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 resistor allowing monitoring of the complete activation circuit. A built-in current limiter reduces the power consumption after it has been activated.



### Specifications

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

Document: Ci IS8B Solenoid Actuator

Text

Category:

Control inert

Id: BH

Rev:2013.04.18



FIRE EATER 1/2

Vølundsvej 17  
DK- 3400 Hillerød  
Tel +45 7022 2769  
Fax +45 7023 2769

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**Markings**

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.

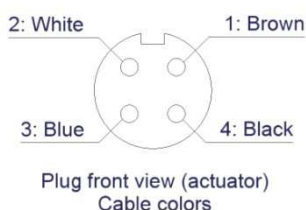
The M12 connector is a male, screw type, with 4 pins. A corresponding cable (supplied with the actuator) must be used.

1: +Ve Brown

2: +Ve White

3: -Ve Black

4: -Ve Blue

**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.  $\frac{3}{4}$  of a turn clockwise.

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**Maintenance**

After activation the Ci IS8B must be reset manually, by below procedures.

**Solenoid only actuator:**

1. Unplug the electrical connection.  
Unscrew the Ci IS8B from the Ci-IV8 valve.
2. Connect the Ci IS8B to FE tool 305495.  
(Make sure that the reset tool is screwed all the way back before connecting)
3. 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)
4. Turn back the reset tool.  
Remove the Ci IS8B from the tool.
5. Check that the plunger is submerged into the body approximately 1 mm.
6. Refit the Ci IS8B to the discharge valve as described under installation.

**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 (counter clockwise) (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

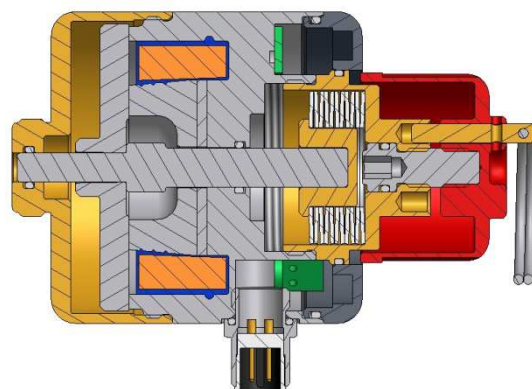
Special cables can be fitted, they have to fit through a cable gland with M12×1.5 connection.

Grounding can be fitted but should generally not be used due to the issues of ground, it is recommended that the user investigates these issues before ordering.

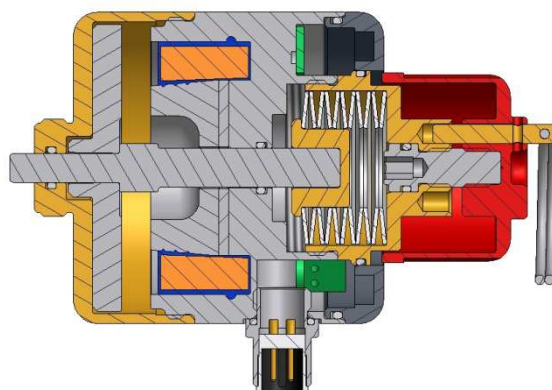
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**Section drawings****Ci IS8B in normal (non activated) position**

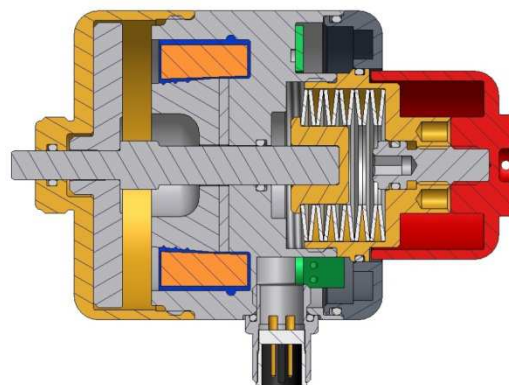
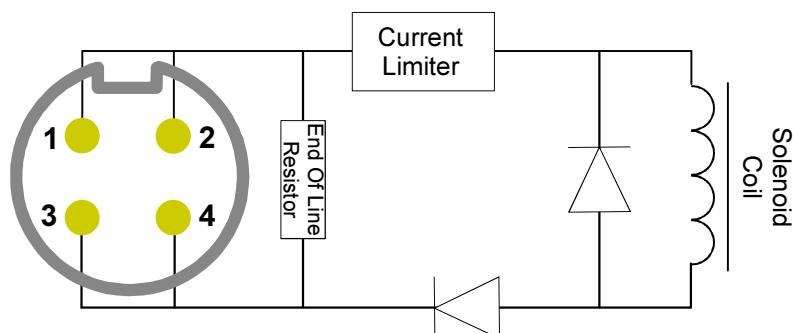
The armature is held in the closed position by a magnetic field created by the permanent magnet in the actuator body.

**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**

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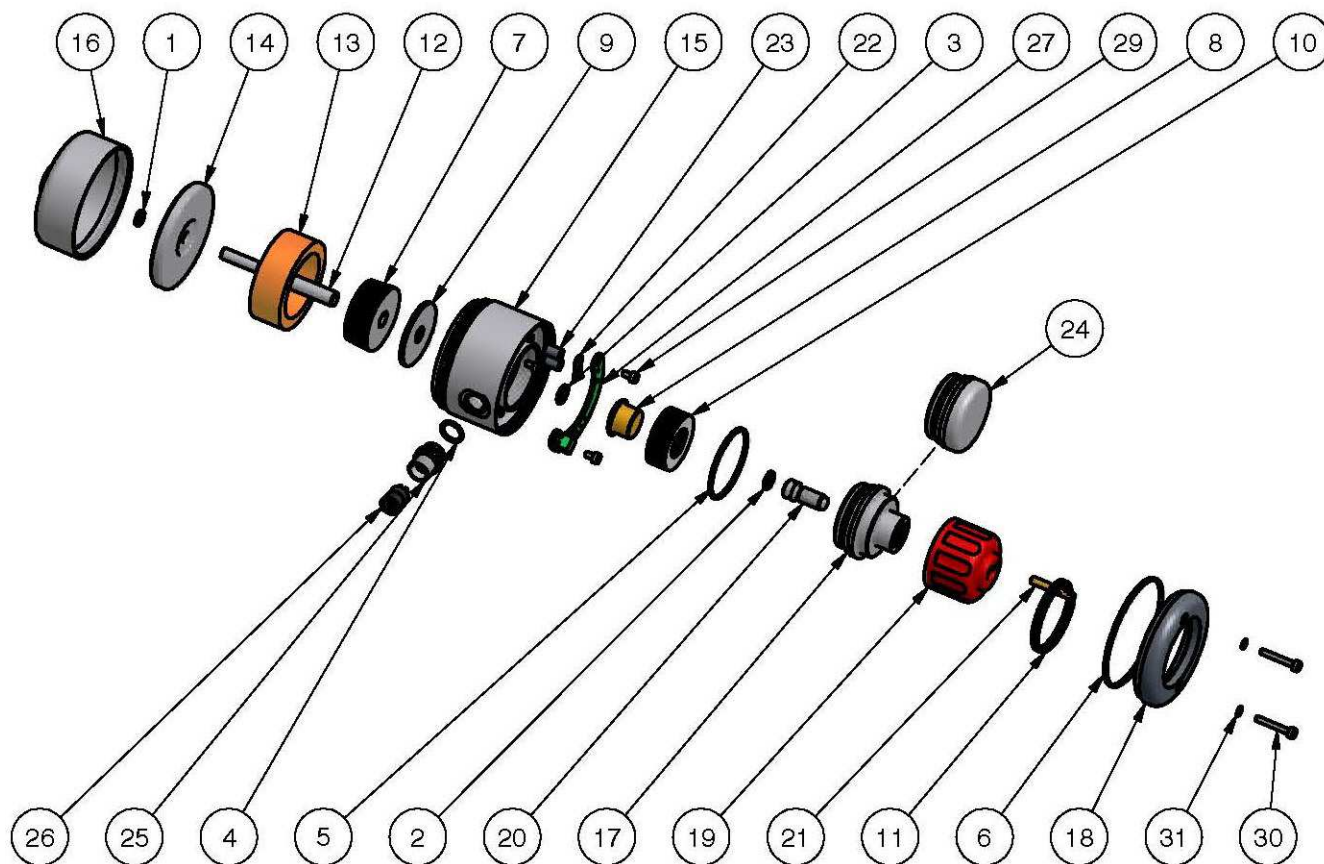
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**Exploded view Ci IS8B**

Pos.	Item	Description	Material
1	2061160	O-ring 6.1 x 1.6	EPDM
2	2071160	O-ring 7.1 x 1.6	EPDM
3	2081160	O-ring 8.1 x 1.6	EPDM
4	2091160	O-ring 9.1 x 1.6	EPDM
5	2351160	O-ring 35.1x1.6	EPDM
6	2568180	O-ring 56.87x1.78	EPDM
7	305064	CM IS8 Center part	Steel
8	305067	CM IS8 Piston	Brass
9	305069	CM IS8 Magnet	Neodymium
10	305332	Disc spring	Steel
11	305352	Ring Ø38xØ2	SS
12	305801	CM IS8B Rod	SS
13	305802	CM IS8B Coil	Cu
14	305803	CM IS8B Armature	Steel (plated)
15	305805	CM IS8B Hld mag body	Steel (plated)
16	305806	CM IS8B M20 Conn	Brass (plated)
17	305808	CM IS8B Spring Body	Brass
18	305810	CM IS8B Cover	Brass

Pos.	Item	Description	Material
19	305811	CM IS8B Knob	Al (anodized)
20	305812	CM IS8B Knob screw	SS
21	305813	CM IS8B Locking pin	Brass
22	305817	CM IS8B PCB seal	EPDM cell
23	305819	CM IS8B wire insulator	PUR
24	305821	CM IS8B Spr Body Sol	Brass (plated)
25	305831	M12x1.5 Body	Brass (plated)
26	305835	M12-4 Press fit plug	PA12 GF30
27	305889	PCBwC IS8B	
29	509054	Screw M3xL5	SS
30	509058	Screw M3xL20	SS
31	777211	Seal ø3	SS+NBR
	500200	Coil potting	Epoxy
	500201	Coil potting	Epoxy
	506250	Wire 0.25 Black (0.03m)	
	506251	Wire 0.25Red (0.03m)	
	305465	Cable: M12-4 p 2m Fem 1end	

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**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

&lt; 225 &lt; 1Nm


Force

&gt;550 N

Mounting

Any

10. On behalf of Fire Eater

Signature: 

Michael Kroneder, CTO

Hillerød 2014-11-05

**Document:**

DoP Ci IS8B

**Category:**

Control inert

Id: MK

Rev:2014.11.05

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Tel +45 7022 2769  
www.fire-eater.com

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