




# S1000.EHO

**Concealed electro-magnetic hold open cam action door closer**  
EN 2-4 power adjustable by spring

## Performance

- EN 2-4 adjustable power (1100mm maximum door width).
- CE marked (DOP-SHL-DC65).
- Certifire approved up to FD60 on timber doors. 
- Tested to BS EN 1154 - 

3	8	4	2	1	1	3
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- Tested to BS EN 1155 - 

3	8	4	3	1	1	3
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## Specifications

- Efficient cam action mechanism provides easy operation.
- 31mm wide slide track complete with matching arm and integrated 24v DC electro-magnetic hold open device with adjustable holding force from 25Nm to 78Nm.
- Adjustable hold open point from 80° to 120°.
- Requires 24vDC± 15% (0.058A / 1.4W) power supply from transformer and relay interface with Fire Alarm System.
- Adjustable closing power, speed and latch action.
- Minimum door thickness 44mm.

## Models

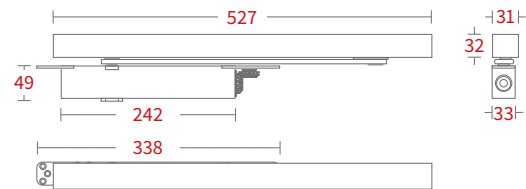
**S1000.EHO** - S1000 closer with electro-magnetic hold open arm track pack.

**S1000.EHO.ATP** - Electro-magnetic hold open arm and track pack only.

## Finishes

**SNP • SES • PCC • RAL • BRO**  
(Page 48-51 for further details).

## Dimensions



## Features

Concealed in door mounting.	✓
Closing power EN size.	2-4
Adjustable closing speed and latch action.	✓
Adjustable hold open point between 80° and 120°.	✓
Minimum door thickness.	44mm
Minimum door width to meet ADM/BS8300 at EN3.	777mm
Optional intumescent packs.	S1000.EHO.INT
Warranty (Mechanical / Electrical).	10 years / 2 years



Construction Products Regulation 2011  
DECLARATION OF PERFORMANCE

**No. DOP-SHL-DC65**  
**CE Certificate of Conformity number AE5019**

**In accordance with EU Nr.305/2011 (UK)**

- Unique identification code of the product-type: **S1000.EHO & S1036.EHO series overhead door closers with electrically powered hold open track.**
- Intended use or uses: **For use on fire and smoke compartmentation doors when fitted in accordance with the manufacturers fitting instructions to fulfil the ability to release equipment.**
- Manufacturer name and address: **Synergy Hardware Ltd. Unit 2 Heath Mill Business Centre, Heath Mill Road, Wombourne, Wolverhampton, WV5 8AP.**
- System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V: **System 1.**
- Harmonised standard: **EN 1155: 1997 A1:2002/AC:2006.**
- Notified body: **2812 Element Materials Technology Rotterdam BV.**

**Declared Performance, Concealed in frame.**

<b>Essential Characteristics</b>	<b>Performance</b>	<b>Harmonised Technical Specification</b>
Ability to release	<ul style="list-style-type: none"> <li>• Category of use: <b>Grade 3</b></li> <li>• Hold-open power size: <b>EN 3-6</b></li> <li>• Suitability for fire/smoke doors use: <b>Grade 1</b></li> <li>• Safety: <b>Grade 1</b></li> <li>• Release from any angle: <b>Pass</b></li> <li>• Not possible to inhibit the release: <b>Pass</b></li> <li>• Supply voltage: <b>Pass</b></li> <li>• External electrical connection: <b>Pass</b></li> <li>• Inlet for external wiring: <b>Pass</b></li> </ul>	EN 1155: 1997/A1:2002/AC:2006
Durability of ability to release	<ul style="list-style-type: none"> <li>• Electrical release: <b>Pass</b></li> <li>• 500,000 test cycles: <b>Pass, Grade 8</b></li> <li>• Corrosion resistance: <b>Pass Grade 3</b></li> </ul>	
Durability of self-closing	<ul style="list-style-type: none"> <li>• Durability: EN1154 (<b>See separate DoP for this element</b>)</li> </ul>	
Dangerous Substances Annex ZA3	The materials in the product(s) do not contain or release any dangerous substances in excess of the maximum levels specified in existing European material standards or any national regulations	

The performance of the product identified above is in conformity with the set of declared performance(s).

This declaration of performance is issued under the sole responsibility of the manufacturer listed above.

Signed for and on the behalf of the manufacturer:

A handwritten signature in black ink, appearing to read 'N. Morgan'. The signature is stylized, with a large, circular flourish at the end of the name.

Mr Neil Morgan  
Managing Director  
Updated Issue: 16<sup>th</sup> November 2020



Construction Products Regulation 2011  
DECLARATION OF PERFORMANCE

**No. DOP-SHL-DC61**  
**CE Certificate of Conformity number AD5192**

**In accordance with EU Nr.305/2011 (UK)**

- Unique identification code of the product-type: **S1000 series Overhead Door closers.**
- Intended use or uses: **For use on fire and smoke compartmentation doors when fitted in accordance with the manufacturers fitting instructions to fulfil the self-closing requirements of such doors.**
- Manufacturer name and address: **Synergy Hardware Ltd. Unit 2 Heath Mill Business Centre, Heath Mill Road, Wombourne, Wolverhampton, WV5 8AP.**
- System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V: **System 1.**
- Harmonised standard: **EN 1154: 1996 A1:2002/AC:2006.**
- Notified body: **2812 Element Materials Technology Rotterdam BV.**

**Declared Performance, Concealed in door & concealed in transom**

Essential Characteristics	Performance	Harmonised Technical Specification
Self-Closing	<ul style="list-style-type: none"> <li>• Closing door angle suitability: <b>&gt;=105° Grade 3</b></li> <li>• Door closer power size: <b>EN 2-4</b></li> <li>• Efficiency: (<b>&gt;50% Size 2</b>), (<b>&gt;60% Size 4</b>)</li> <li>• Closing time: <b>Pass</b></li> <li>• Suitability for fire/smoke door use: <b>Pass, Grade 1</b></li> <li>• Safety: <b>Pass, Grade 1</b></li> <li>• Temperature Dependence -15°C to +40°C: <b>Pass</b></li> <li>• Fluid leakage: <b>Pass</b></li> <li>• Latch control: <b>Pass</b></li> <li>• Backcheck: <b>N/A</b></li> <li>• Delayed action: <b>N/A</b></li> <li>• Adjustable closing force: <b>Pass</b></li> </ul>	EN 1154: 1996/A1:2002/AC:2006
Durability of self-closing	<ul style="list-style-type: none"> <li>• 500,000 test cycles: <b>Pass, Grade 8</b></li> <li>• Corrosion resistance: <b>Pass Grade 3</b></li> </ul>	
Dangerous Substances Annex ZA3	The materials in the product(s) do not contain or release any dangerous substances in excess of the maximum levels specified in existing European material standards or any national regulations	

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Mr Neil Morgan  
Managing Director  
Updated Issue: 16<sup>th</sup> November 2020



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## CERTIFICATE OF APPROVAL

### No CF 5293

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This is to certify that, in accordance with  
TS00 General Requirements for Certification of Fire Protection Products  
The undermentioned products of

## SYNERGY HARDWARE LIMITED

Unit 2 Heath Mill Business Centre, Heath Mill Road,  
Wombourne, Wolverhampton, WV5 8AP  
Tel: 01902 893725

Have been assessed against the requirements of the Technical Schedule(s)  
denoted below and are approved for use subject to the conditions  
appended hereto:

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#### CERTIFIED PRODUCT

Synergy Concealed Overhead  
Door Closers

#### TECHNICAL SCHEDULE

TS 34 - The Contribution Of  
Controlled Door Closing  
Devices And Accessories To  
Fire Resisting Doorsets

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan  
Certification Manager



Issued:  
Revised:  
Valid to:

25<sup>th</sup> September 2015  
20<sup>th</sup> August 2020  
31<sup>st</sup> October 2021



## CERTIFICATE No CF 5293 SYNERGY HARDWARE LIMITED

### SYNERGY CONCEALED OVERHEAD DOOR CLOSER

1. This approval relates to the following concealed overhead door closing devices and configurations:

	S1000	S1036	S1000.EHO	S1036.EHO
Single-action	✓	✓	✓	✓
Double-action	✗	✗	✗	✗
Body door mounted in top edge	✓	✓	✓	✓
Body transom mounted	✗	✗	✗	✗

**Key:** ✓ - approved ✗ - Not approved

*Note: Where alternative arms for non-fire applications are included within the packaging, the use of these components on fire resisting door assemblies will invalidate the certification.*

2. This certification is provided to the client for their own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
3. This approval relates to its use with the following door assemblies: -

**Latched and unlatched, intumescent sealed door assemblies consisting of timber faced and edged leaves with timber, cellulosic or mineral cores in timber frames having a fire resistance of 30 minutes (Code ITT).**

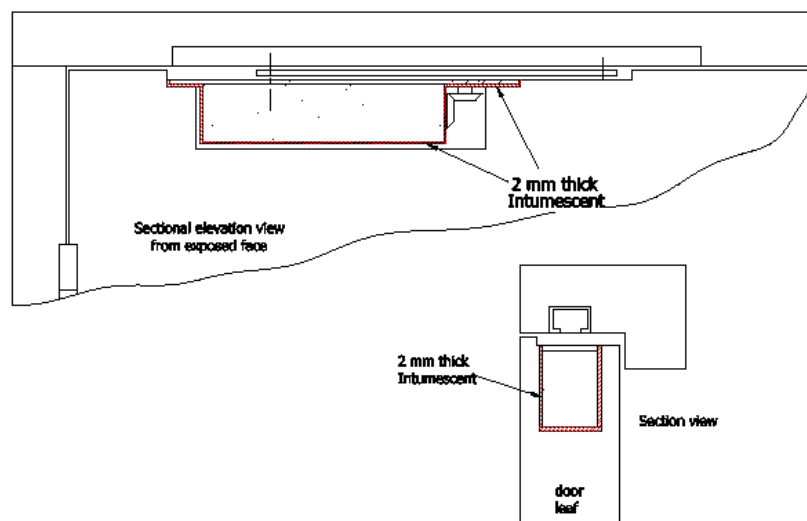
**Latched and unlatched, intumescent sealed door assemblies consisting of timber faced and edged leaves with timber, cellulosic or mineral cores in timber frames having a fire resistance of 60 minutes (Code ITT).**

4. The closer is approved on the basis of:
- i) Initial type testing to BS EN 1154 and BS EN 1634-1
  - ii) An appraisal against TS34
  - iii) Certification of quality management system.
  - iv) Inspection and surveillance of factory production control
  - v) On-going audit testing in accordance with EN 1154 requirements
5. Concealed closers shall only be fitted to doorsets which have previously been shown capable of accommodating the installation of similar concealed items at the head of the doorset, without detriment to the doorset's performance.

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### SYNERGY CONCEALED OVERHEAD DOOR CLOSER

6. Where the closers are fitted to door leaves or frames that are manufactured from mineral composite-based materials, or low-density cellulosic-based material, the door assembly shall have previously been shown capable of accommodating the installation of closers at the head of the doorset, without detriment to the door assembly's performance.
7. This approval relates to S1000 and S1036 concealed overhead closers used with latched or unlatched single-leaf or double-leaf, assemblies consisting of timber faced and edged leaves with timber, cellulosic or mineral cores and in timber frames:
- a. **S1000 & S1000.EHO** – with the bodies mounted in the door leaf, are approved for 30 minute single-action and doorsets of the following specification (Code ITT):
- Door leaves shall not less than 44 mm thick doors.
  - The door frame shall consist of softwood or hardwood with a minimum density of 510 kg/m<sup>3</sup> and with a minimum thickness of 32 mm (excluding any stop).
  - The closer shall be fitted with intumescent protection in the form of a minimum of:
    - 2 mm thickness of mono ammonium phosphate sheet material, fully lining the mortices cut into the top edge of the door leaf to accommodate the closer body assembly
    - The S1000 closer requires no additional intumescent to the mortices within the frame head member to accommodate the guide channel assembly for 30 minute ITT applications only.
    - Synergy Hardware Limited provides intumescent kits referenced S1000.INT and S1000.EHO.INT for this purpose

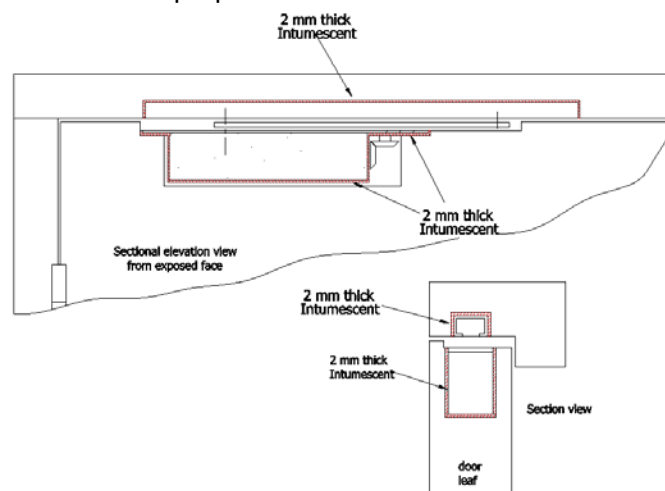




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### SYNERGY CONCEALED OVERHEAD DOOR CLOSER

- b. **S1036 & S1036.EHO** – with the bodies mounted in the door leaf, are approved for 30 minute single-action and doorsets of the following specification (Code ITT):
- Door leaves shall not less than 44 mm thick doors.
  - The door frame shall consist of softwood or hardwood with a minimum density of 510 kg/m<sup>3</sup> and with a minimum thickness of 32 mm (excluding any stop).
  - The S1036 closer requires no additional intumescent for 30 minute ITT applications.
- c. **S1000, S1036, S1000.EHO & S1036.EHO**– with the bodies mounted in the door leaf, are approved for 60 minute single-action and double- action doorsets of the following specification (Code ITT):
- Door leaves shall not less than 54 mm thick doors.
  - The door frame shall consist of hardwood with a minimum density of 640 kg/m<sup>3</sup> and with a minimum thickness of 32 mm (excluding any stop).
  - The closer shall be fitted with intumescent protection in the form of a minimum of:
    - 2 mm thickness of mono ammonium phosphate sheet material, fully lining the mortices cut into the top edge of the door leaf to accommodate the closer body assembly
    - 2 mm thickness of mono ammonium phosphate sheet material, fully lining the mortices cut into the within the frame head member to accommodate the guide channel assembly.
    - Synergy Hardware Limited provides an intumescent kit referenced S1000.INT, S1036.INT, S1000.EHO.INT & S1036.EHO.INT for this purpose



*Note: Failure to install intumescent protection identified above will invalidate this certificate*

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### SYNERGY CONCEALED OVERHEAD DOOR CLOSER

8. The closers shall be fixed with screws supplied by the closer manufacturer.
9. The approval relates to on-going production. The product and/or its immediate packaging are identified with the manufacturer's name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.
10. The following table show acceptable doorset types and fire resistance periods:

Class	Approved Door Type				
	IMM	MM	ITT	ITM	ITC
FD20	x	x	x	x	x
FD30	x	x	✓	x	x
FD60	x	x	✓	x	x
FD90	x	x	x	x	x
FD120	x	x	x	x	x
FD240	x	x	x	x	x
E 20	x	x	x	x	x
EI 20	x	x	x	x	x
E 30	x	x	✓	x	x
EI 30	x	x	✓	x	x
E 60	x	x	✓	x	x
EI 60	x	x	✓	x	x
E 90	x	x	x	x	x
EI 90	x	x	x	x	x
E 120	x	x	x	x	x
EI 120	x	x	x	x	x
E 240	x	x	x	x	x
EI 240	x	x	x	x	x

**Key:**

- ✓ - approved  
x - Not approved



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### SYNERGY CONCEALED OVERHEAD DOOR CLOSER

11. Doors are classified as the following types:

**Type MM** - 20 minute to 240 minute doorsets that consist of metallic leaves in metallic frames that do not contain intumescent materials in the frame to leaf gap.

**Type IMM** - 20 minute to 240 minute doorsets that consist of metallic leaves in metallic frames that contain intumescent materials in the frame to leaf gap.

**Type ITT** - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in timber frames

**Type ITM** - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in metal frames.

**Type ITC** - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in proprietary composite frames, of which the principal material is other than timber or metal but which may include any other materials.

#### Scope of Approval:

- The closers may not be fitted to timber doorsets without intumescent protection to the frame rebate or door edge.
- Concealed overhead closers and their guide channel shall only be fitted in conjunction with the intumescent protection specified in Section 7 of this certificate.
- Concealed overhead closers shall only be fitted to doorsets which have previously been shown capable of accommodating the installation of similar concealed items at the head of the doorset, without detriment to the doorset's performance.
- Mechanical Hold open option is not approved
- The following specific guide channels are approved for use with the concealed closers:
  - Non-hold open single-action guiderail 23 mm wide x 14.5 mm high by a maximum 440 mm long (S1000)
  - Non-hold open single-action guiderail 31 mm wide x 20 mm high by a maximum 440 mm long (S1036)
  - EHOATP electro hold-open single-action guiderail 31 mm wide x 30 mm high x 527 mm long (S1000.EHO & S1036.EHO)



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### SYNERGY CONCEALED OVERHEAD DOOR CLOSER

#### Scope of Approval – Cont'd:

- This certification does not support any additional closer functions:

Closer Ref.	Backcheck	Delayed-Action
S1000	x	x
S1036	x	x
S1000.EHO*	x	x
S1036.EHO*	x	x

- ✓ - approved  
x - Not approved

#### Classification codes:

S1000 (EN1154):

3	8	4 2	1	1	3
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S1036 (EN1154):

3	8	6 3	1	1	3
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S1000.EHO (EN1155):

3	8	4 3	1	1	3
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S1036.EHO (EN1155):

3	8	6 3	1	1	3
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*Note: power ratings shall be appropriate to the leaf sizes subject to a minimum size 3 (as specified in BS EN 1154).*



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**CERTIFICATE No CF 5293**  
**SYNERGY HARDWARE LIMITED**

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**SYNERGY CONCEALED OVERHEAD DOOR CLOSER**

**Further Information**

Further information regarding the details contained in this certificate may be obtained from Synergy Hardware Limited (Tel: 01902 893725).

Further information regarding CERTIFIRE certification and other approved products can be obtained from CERTIFIRE (Tel: 01925 646777).

Page 8 of 8 Signed  
K/002

Issued: 25<sup>th</sup> September 2015  
Revised: 20<sup>th</sup> August 2020  
Valid to: 31<sup>st</sup> October 2021