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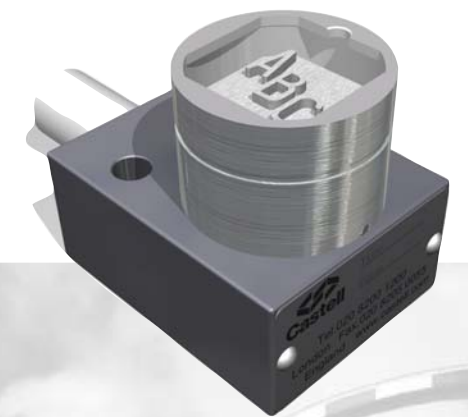
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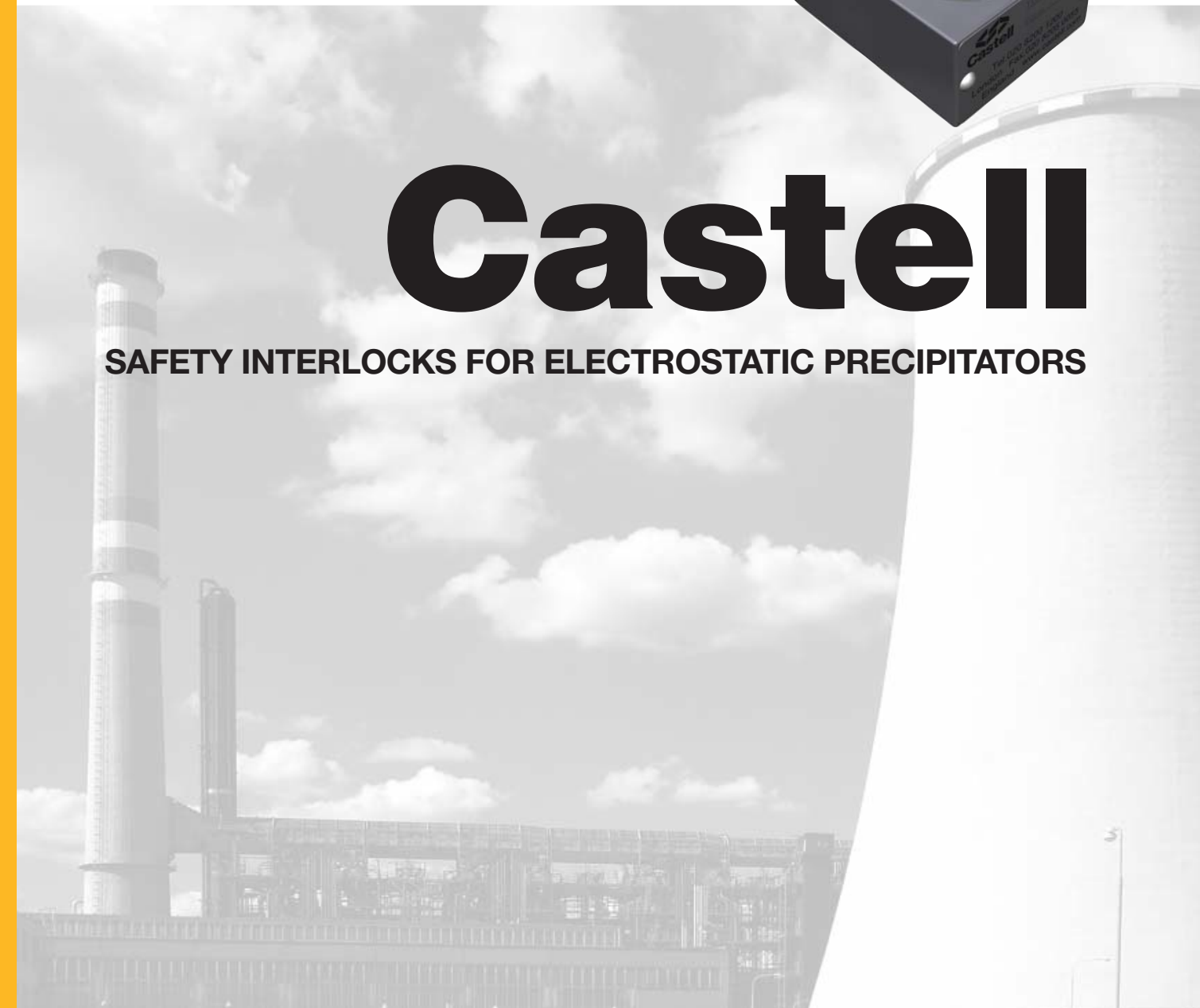
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# Castell

**SAFETY INTERLOCKS FOR ELECTROSTATIC PRECIPITATORS**



## Why Choose Castell?

- Worldwide presence** – Chicago USA, London UK, Shanghai CHINA, Cologne GERMANY
- Experience** – Established in 1922 we have been in the safety industry for more than 80 years
- Flexibility** – We create customized solutions to solve any of your needs
- Innovation** – Product development is inspired by close industry relations
- Safety** – We not only adhere to current OSHA and ANSI regulations, but work to provide the safest possible environment
- Reliability** – Our global team helps you obtain the safest and most reliable solutions
- Durability** – Heavy duty products designed to withstand harsh environments
- Trust** – Castell has been a key part of the safety industry since its very creation
- ISO 9001 approved company**



**James Harry Castell** *Founder*  
1880 -1953

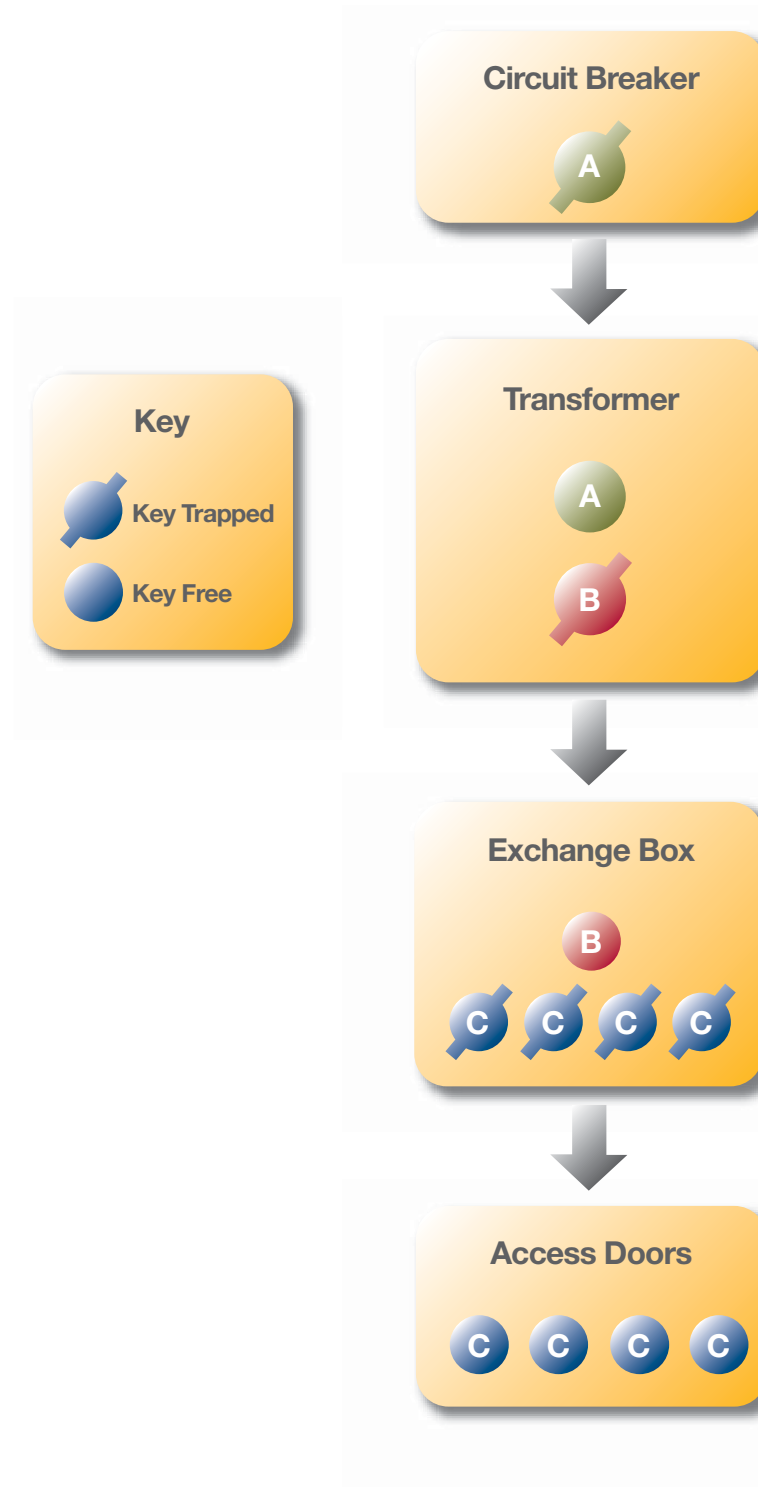
Electrostatic Precipitators rank as one of the toughest environments for interlocks. The electrodes and collection plates in precipitators require maintenance to perform at optimum levels. With electrodes carrying a charge of more than 10,000 volts, stringent safety procedures are vital if operator access before isolation of the LV/HV transformer is to be prevented.

Castell's trapped key interlocks force workers to adhere to a step-by-step process every time internal access to a precipitator is needed. Each step releases a key which in turn permits activation of the next stage in the process. This system ensures that access to live precipitators is virtually impossible.

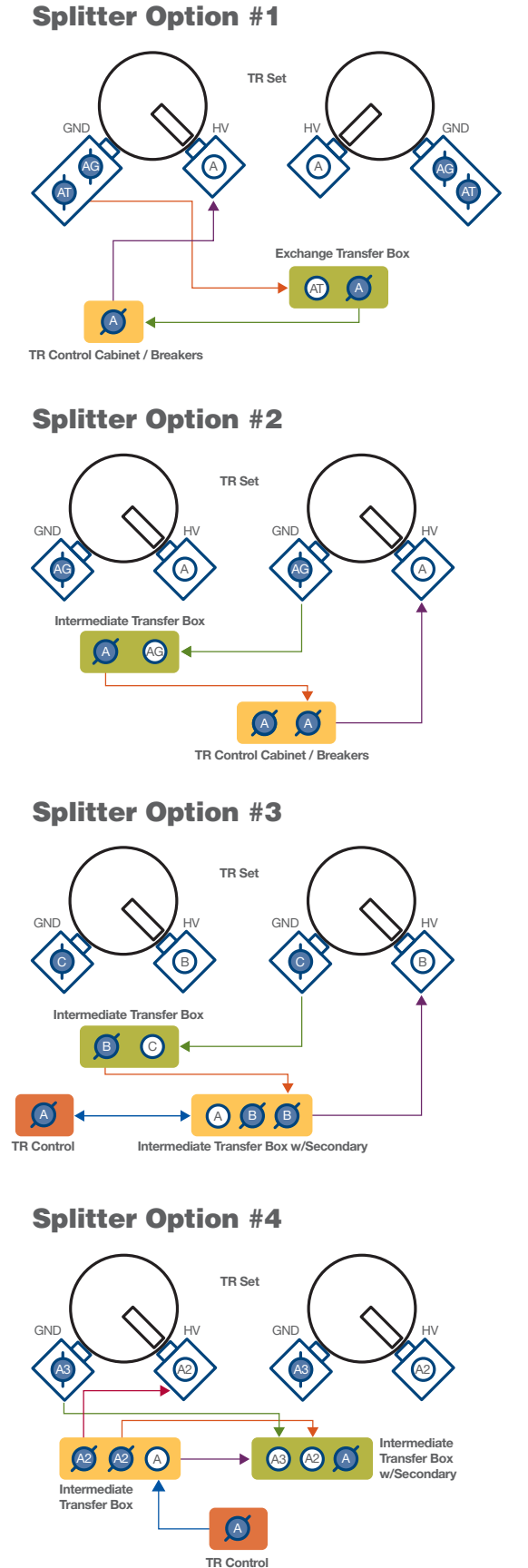
Typical light duty locking devices, such as pin tumblers, are prone to plugging and performing poorly in the high fly-ash environment within precipitators. Castell's durable brass or stainless lock mechanisms avoid ingress with a sealing key and a cap to minimize dirt or dust collecting.



## Typical System Diagram



Some TR sets allow for half wave operation. Below are 4 options to allow interlocking for half wave systems.



# KS

## Circuit Breaker Switch



Key switch interlock used to drive electrical circuit to open/close main breaker. Available in Brass or Stainless w/custom mounting options, amp ratings (20, 32, 63, 125) and switch contacts (4NC, 2NO-2NC, 6NC, 3NO-3NC).

### Order Information

Part Number **Product Type** **1** **2** **3** **4** **5** **6**

Example **K** 20 FS B P C/O 4

**5**  
ABC



<b>1</b>	<b>Isolation</b>	20 amps (UL:20A/CSA:16A) 32 amps (UL&CSA:30A) 63 amps (UL&CSA:65A)
<b>2</b>	<b>Lock portion type</b>	FS (1) / Q (1)
<b>3</b>	<b>Material</b>	B = Brass / S = Stainless steel
<b>4</b>	<b>Mounting</b>	P = Panel mount (back of board) F = Front of board mount, with enclosure
<b>5</b>	<b>Contacts arrangement in normal position</b>	C/O = no/nc arrangement (contacts closed/opened) CC = nc arrangement (all contacts closed)
<b>6</b>	<b>Contacts number</b>	4 = standard contacts number
<b>7</b>	<b>Lock portion symbol</b>	FS (1) up to 3 digits / Q (1) up to 6 digits

(1) FS - Lock type  
Up to 3 symbols



Q - Lock type  
Up to 6 symbols



# K

## Circuit Breaker & TR Set Interlock

Bolt interlock to lock existing breaker or TR grounding handle, key free bolt extended, key-trapped bolt retracted. Available in Brass or Stainless with custom bolt sizes and direction.

### Order Information

Part Number **Product Type** **1** **2** **3** **4** **5**

Example **K** FS B 6,4 1 10.3

**6**  
ABC



<b>1</b>	<b>Lock portion type</b>	FS <sup>(1)</sup> / Q <sup>(1)</sup>
<b>2</b>	<b>Material</b>	B = Brass / S = Stainless steel
<b>3</b>	<b>L Dimension (bolt length when retracted) in mm</b>	0 / 6,4 / 12,7 / 19,1 / 25,4
<b>4</b>	<b>Form</b>	1 / 2 / 3 / 4 <sup>(2)</sup>
<b>5</b>	<b>Mounting hole size</b>	10.3 mm (for 3/8" fasteners)
<b>6</b>	<b>Lock portion symbol</b>	FS (1) up to 3 digits / Q (1) up to 6 digits

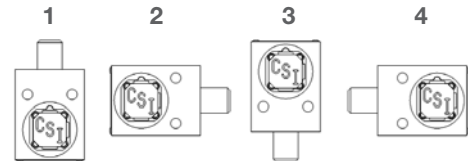
(1) FS - Lock type  
Up to 3 symbols



Q - Lock type  
Up to 6 symbols



(2) Form



# KL

## Circuit Breaker & TR Set Interlock



Two key bolt interlock to lock existing breaker or TR grounding handle. Often used to release an additional key for splitter options or maintenance doors. Available in a double key or exchange key condition. Exchange Condition: bolt extended, primary key free, secondary key trapped. Double Key Condition: bolt extended, both keys released.

### Order Information

Part Number **Product Type** **1** **2** **3** **4** **5** **6**

Example **KL** FS B 1S 6,4 1 D

**7**  
10.3

**8**  
ABC/ABC



<b>1</b>	<b>Lock portion type</b>	FS (1) / Q (1)
<b>2</b>	<b>Material</b>	B = Brass / S = Stainless steel
<b>3</b>	<b>Number of lock portions</b>	1S = 1 secondary key (2 locks)
<b>4</b>	<b>L Dimension (bolt length when retracted) in mm</b>	0 / 6,4 / 12,7 / 19,1 / 25,4
<b>5</b>	<b>Form</b>	1 / 2 / 3 / 4 (2)
<b>6</b>	<b>Key Condition</b>	D = double key condition / E = exchange key condition (see operation details, page 1)
<b>7</b>	<b>Mounting hole size</b>	10.3 mm (for 3/8" fasteners)
<b>8</b>	<b>Lock portion symbols (inserting/withdrawing key)</b>	FS (1) up to 3 digits / Q (1) up to 6 digits

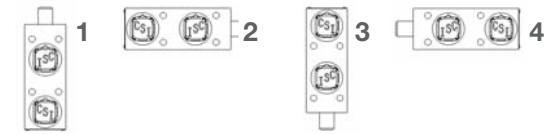
(1) FS - Lock type  
Up to 3 symbols



Q - Lock type  
Up to 6 symbols



(2) Form



# X

## Key Exchange Unit

Enables the release of keys by insertion of an initial key(s). The requirement for this type of product usually arises due to there being more keys required than the initial isolation system supplies. The product is supplied suitable for surface mounting. The maximum capacity of an X-Box is 10 locks.

### Order Information

Part Number **Product Type** **1** **2** **3** **4** / **5**

Example **X** FS B H 1 / 3

**6**  
ABC

**7**  
ABC



<b>1</b>	<b>Lock portion type</b>	FS (1) / Q (1)
<b>2</b>	<b>Material</b>	B = Brass / S = Stainless steel
<b>3</b>	<b>Mounting</b>	H - Horizontal V - Vertical
<b>4</b>	<b>Lock Exchange</b>	Number of Incoming Keys
<b>5</b>	<b>Lock Exchange</b>	Number of Released Keys
<b>6</b>	<b>Incoming Lock portion symbol(s)</b>	FS (1) up to 3 digits / Q (1) up to 6 digits
<b>7</b>	<b>Released Lock portion symbol(s)</b>	FS (1) up to 3 digits / Q (1) up to 6 digits

\* Maximum of 10 total locks per K-Box

# NEMA 4X

## Key Exchange Unit



Enables the release of keys by insertion of an initial key(s). The requirement for this type of product usually arises due to there being more keys required than the initial isolation system supplies. The product is supplied in a stainless steel, NEMA4X rated enclosure. The maximum capacity of a NEMA4X is 90 locks.

### Order Information

Part Number **NEMA 4X** - **1** - **2** - **3** / **4**

Example **NEMA 4X** - FS - B - 5 / 15

**5** **6**

ABC ABC



<b>1</b>	Lock portion type	FS (1) / Q (1)
<b>2</b>	Material	B = Brass / S = Stainless steel
<b>3</b>	Lock Exchange	Number of Incoming Keys
<b>4</b>	Lock Exchange	Number of Released Keys
<b>5</b>	Incoming Lock portion symbol(s)	FS (1) up to 3 digits / Q (1) up to 6 digits
<b>6</b>	Released Lock portion symbol(s)	FS (1) up to 3 digits / Q (1) up to 6 digits

# AI

## Single Key Access Interlock

Standard Door Lock with 10" chained bolt and weld bracket. Available in Brass or Stainless w/custom locking bolt direction (1 left or 2 right). Key Free Door Locked, Key Trapped Door Open.

### Order Information

Part Number **AI** - **1** - **2** - **3** - **4**

Example **AI** - FS - AL - 1 - ASSY

**5**

ABC



<b>1</b>	Lock portion type	FS (1) / Q (1)
<b>2</b>	Material	AL = Aluminum alloy/brass S = Stainless steel
<b>3</b>	Handing	1 = left hinged door (bolt enters left) (2) 2 = right hinged door (bolt enters right) (2)
<b>4</b>	Weld bracket & 10" chain	ASSY
<b>5</b>	Lock portion symbol	FS (1) up to 3 digits / Q (1) up to 6 digits

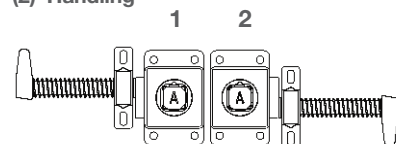
(1) FS - Lock type  
Up to 3 symbols



Q - Lock type  
Up to 6 symbols



(2) Handling



# KF

## Nuclear Level Detector Interlock



Bolt interlock to lock existing nuclear level detector, key free bolt extended, key-trapped bolt retracted. Available in Brass or Stainless with custom bolt sizes and direction.

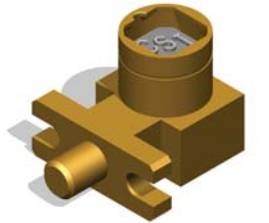
### Order Information

Part Number **KF** - **1** - **2** - **3** - **4**

Example **KF** - FS - B - 6,4 - 1

**5**

ABC



<b>1</b>	Lock portion type	FS (1) / Q (1)
<b>2</b>	Material	B = Brass / S = Stainless steel
<b>3</b>	L Dimension (bolt length when retracted) in mm	0 / 6,4 / 12,7 / 19,1 / 25,4
<b>4</b>	Form	1 / 2 / 3 / 4 (2)
<b>5</b>	Lock portion symbol	FS (1) up to 3 digits / Q (1) up to 6 digits

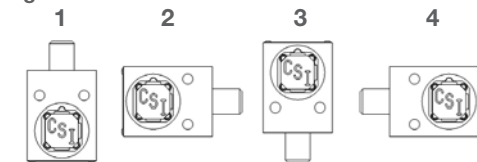
(1) FS - Lock type  
Up to 3 symbols



Q - Lock type  
Up to 6 symbols



(2) Handling



# Keys

## Keys & Accessories

### Order Information

#### FKW6

Figure style key. A maximum of three (3) characters are permissible, letters or numbers or a combination of both. The figures are in predetermined positions within the key.



Ordering Information

FKW6 - **1** - **2**

#### QS

A maximum of six (6) characters are permissible, letters or numbers or a combination of both. This is a non-masterable lock that Castell holds a record of all key codes issued.



Ordering Information

QS - **1** - **2**

#### FLIP-S

Spring loaded lockout cap manufactured from stainless steel & used to prevent dust ingress getting into the Castell lock portion. In addition, the cap can be fitted with a padlock to prevent lock operation during maintenance.



Ordering Information

FLIP-S

<b>1</b> Material	- NI-Nickle Plated Brass - S-Stainless Steel
<b>2</b> Key Symbol	up to 3 digits

<b>1</b> Material	- B-Brass - S-Stainless Steel
<b>2</b> Key Symbol	up to 6 digits