

# SCHMERSAL Tech Briefs:

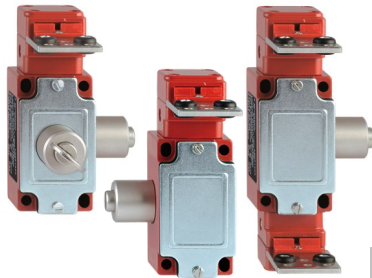
## Trapped Key Transfer System

### System Components



**SHGV/ESS21S2**

Keyed selector switch  
Controls main power for machine  
Key trapped when machine "on"  
Contact block included (1 NC & 1 NO)  
Space for additional contact blocks  
Primary lock key included



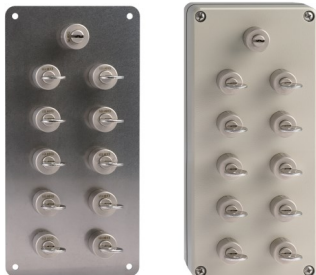
**SHGV**

Guard locking device  
Lock key releases the actuator(s)/ opens guard  
Lock key trapped until guard is closed  
Optional second key lock cylinder  
1 or 2 actuator heads  
Actuator heads are rotatable (90° steps)  
Variety of actuator styles



**SVE**

Multiple key selector interlock  
Controls main power for machine  
Keys trapped when machine "on"  
Magnetic lock to keep keys trapped while machine winds down (safe speed)  
1, 2, or 3 lock cylinders  
Primary lock keys included



**SVM1**

Key distribution station  
6 or 10 secondary keys (included)  
Unlocked by primary key (not included)  
Primary key trapped as long as any secondary keys are removed.  
Stainless steel plate for flush mounting or plastic housing for surface mounting

### Overview

With the SHGV-system, the trapped key determines whether the guard door can be opened or not. In the initial state, the trapped key is in a key-selector-switch which is usually located in a central control console where the stop function of the machine is. The key can only be removed from there when the machine is in the safe operating mode. The operator can then take the key from the console selector switch and insert it into the lock barrel of the guard door to open it. The key can only be removed from this lock barrel once safety door is closed and locked again. The machine or the hazardous movement can be restarted once the key is back in the selector-switch at the central console.

If the transfer time between making a selection with the key-selector-switch (removal of the key) and the unlocking of the protection equipment is insufficient, then a solenoid locking key-selector switch unit (SVE) may be required. The SVE Interlock holds keys until a hazardous machine motion has come to a stop.

Multiple guard doors can be controlled with a SVM key distribution station. The control key remains trapped as long as any secondary keys are removed / guard door are open.

The SHGV series also has a version with a second lock barrel which blocks the actuation of the first lock barrel, if an operator needs to enter a space and needs protection against the machine being started unintentionally by third parties.

### Typical System Configurations

#### Hazardous run-on time < Time for the key transfer

One key selector switch SHGV/ESS unlocks one guard (SHGV)

One primary key selector switch SHGV/ESS, unlocks multiple secondary keys in the SVM, to unlock several guards (SHGV)

#### Hazardous run-on time > Time for the key transfer

A SVE key selector interlock holds keys until hazardous movement stops, then unlocks up to 3 guards (SHGV)

A SVE key selector interlock holds keys until hazardous movement stops, unlocks multiple secondary keys in the SVM, to unlock several guards (SHGV)

### Applications

- Food processing machinery
- Pharmaceutical machinery
- Medical applications
- Outdoor equipment
- Chemical processing equipment
- Painting systems
- Semiconductor manufacturing

### Available Literature



Trapped Key Transfer System  
brochure (PDF only)

### Ordering Details

#### Keyed selector switch

**SHGV/ESS21S2/①/103**

- ① Designate Primary key code

#### Guard locking device

**SHGV/①②③/④/⑤+⑥**

- ① Locking cylinder direction
  - B Back side
  - L Left side
  - R Right side
- ② Additional locking cylinder
  - blank Without
  - D from front
- ③ Number of actuating heads
  - 01 1 actuator head
  - 1.1 2 actuator heads
- ④ Designate key code, main cylinder
- ⑤ Designate key code, front cylinder(D)
- ⑥ Actuator type
  - BO Straight actuator
  - BOW Angled mounting
  - BOR Curved actuator
  - BOWR Curved, angled
  - BOF/HIS.1 Flexible, end mounting
  - BOF/HIS.2 Flexible, side mounting

#### Solenoid locking keyed selector unit

**SVE①/②③④**

- ① Number of key selector switches
  - 1 1 selector
  - 2 2 selectors
  - 3 3 selectors
- ② Designate Primary key code
- ③ Contacts
  - blank 1 NC & 1 NO
  - 30E 2 NC (in series) & 1 NO
  - W 2 NC (separate) & 1 NO
- ④ Voltage
  - 24VDC -24VAC
  - 115VAC -230VAC

#### Key distribution station

**SVM1/①-②③/④**

- ① Designate Primary key code
- ② Number of secondary keys
  - 6 6 secondary keys
  - 10 10 secondary keys
- ③ Designate secondary key code(s)
- ④ Housing type
  - E Stainless steel mounting plate
  - A Plastic enclosure

### Contact

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