

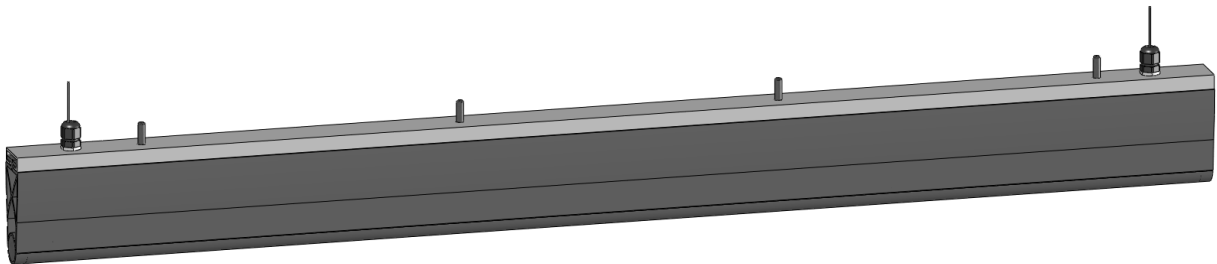
Operating Manual

HSC[®]

Safety edge

(Translation of Original Manual)

| | | | |
|----------------|----------------|----------------|----------------|
| HSC 35-20-01 T | HSC 40-20-01 T | HSC 65-35-01 T | HSC 95-35-01 T |
| HSC 35-20-02 T | HSC 40-20-02 T | HSC 65-35-02 T | HSC 95-35-02 T |
| HSC 35-20-03 T | HSC 40-20-03 T | HSC 65-35-03 T | HSC 95-35-03 T |



Pictured HSC 95-35-01 T
The image may differ from the product.

Read the operating manual before beginning any work!

HAAKE[®]

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1 Scope

This operating manual is intended for persons who have been authorized to carry out tasks involving the safety edge of the HSC-series. International, national and, where appropriate, regional regulations are to be observed when handling key transfer systems.

If you have any questions which are not answered in this manual, please get in touch with your regional customer service centre or else make direct contact with

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2 Intended use

HSC Pressure-Sensitive Edges are used to safeguard pull-in points as well as crushing and shearing edges on machines and plants, in accordance with the conditions described in sections 20, 21 and 23. They find application in the protection of hands, arms, legs, heads and people, for example on machine hoods, movable safety devices, lifting tables, hoisting and tilting equipment, packaging machines, Automated guided vehicles (AGVs).

Other applications are prohibited.

3 Symbol Explanation

Warnings are indicated by symbols. The notices are introduced by signal words to indicate the extent of the hazard.



Attention!

... indicates a potentially hazardous situation, which may lead to personal injury and damage to property if it is not avoided.



NOTE!

... highlights useful tips and recommendations as well as information for efficient and fault-free operation.

4 Disposal



The device must be properly disposed of in accordance with national laws and regulations.

5 Foreseeable misuse

Examples for reasonably foreseeable misuse

- Pressure-sensitive edges may not be used as climbing aids.
- Pressure-sensitive edges may not be used as end stops for movable safety devices.
- Pressure-sensitive edges may not be connected to voltage ≥ 50 V AC, 75 V DC.
- Pressure-sensitive edges may not be stressed by voltages greater than 0.5 A.
- Safety Edges for not be used on fire doors.
- Connection lines may not be installed without protection.

6 Identification

For exact identification, you will find the type designation, serial number and year of construction on the type labels of the pressure-sensitive edges.

Note these details (prior to installation, if necessary), so that they can be provided in case of questions or for ordering spare parts.

7 Safety related functioning

The pressure-sensitive edges carry out the following safety functions:

1. Interruption of the closed circuit through force application on the sensor surface
2. The interruption of the closed circuit is maintained as long as the force is applied to the sensor surface.

8 Fault exclusion

Due to the construction, materials, and components used for the component, the faults listed in the table can be excluded:

| Potential Defect | Elimination of Defect | Limitations of Use | Reason |
|--|--|--|---|
| Deformation by overload | Admissible in accordance with Table A.4. of DIN E ISO 13849-2. | See: Intended use in section 2 and technical information in section 20. | Use of carefully selected materials and manufacturing procedures; using special mounting types. |
| Modifications of the geometry or breakage of the contact chain | Admissible in accordance with Table A.4. of DIN E ISO 13849-2. | See: Intended use in section 2 and technical information in section 20. | Use of carefully selected materials and manufacturing procedures; use of special fastening types; overdimensioning. |
| Short circuit in the lines and line connections | Admissible in accordance with Table D.4. of DIN E ISO 13849-2. | See: Installation in section 12 | Use of doubly insulated sheathed cables and protected cable installation |
| Welding of the contacts | Admissible in accordance with Table D.8 of DIN E ISO 13849-2. | See: Installation in section 12 and technical information in section 20. | Use of a fuse (0.5 A) in the supply circuit of the pressure-sensitive edges. |

9 Scope of delivery

1 x properly safety edge



NOTE!

Means of attachment and fuse (0.5 A) are not included in the scope of the delivery.

10 Structure and function

10.1 Description

The pressure-sensitive edges basically have the same construction, independent of dimensions and shape.

They consist of the components:

- Haake safety contact chain HSC® (normally closed type)
- TPE hollow chamber profile and sealing plug
- Aluminum profile for fastening the sensor to the machine body
- A variety of line connection arrangements depending on the application
- Doubly insulated connection lines for machine control

When the pressure-sensitive edge sensor is actuated, the current flow is interrupted by the special geometry of the chain links in the interior of the sensor. This interruption represents the OFF state of the output signal switching device and thus transmits the safety output signal to the downstream machine control.

The pressure sensitive edges meet the requirements for automatic resetting because they shift to ON state when the actuating force is removed.



Attention!

If applicable, a reset function may be required.

Should work with a manual reset be required, this should be implemented by the machine control in accordance with DIN EN ISO 13856-2, Section 4.11.

The pressure-sensitive edges can be joined together as often as required up to a length of 50 m.

Due to the closed circuit principle (forced interruption of the contact chain) no separate evaluation unit is necessary for provision of the output signal.

The pressure-sensitive edges and downstream machine control must together meet the performance level that was determined by the risk assessment.

10.2 Example

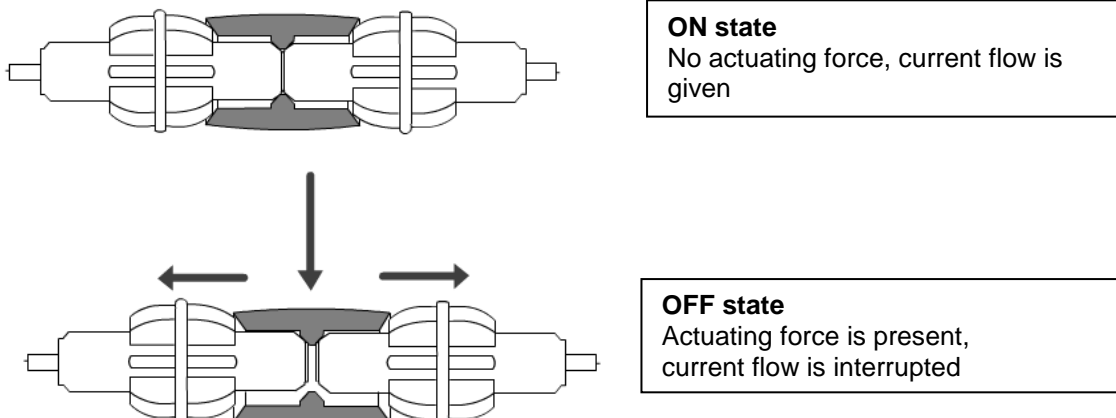


Figure shows HSC as a functional principle (sensor profile is not shown)

11 Safety measures

11.1 Organisational measures

Persons who have been authorised to carry out tasks involving the installation or removal of the safety edge must have read and understood this manual prior to commencing such tasks.

The operator of the plant or machine has an obligation to ensure the installation and de-installation is carried out safely and with no hazards by implementing appropriate safety measures.

11.2 Safety of persons

Personnel responsible for installation or removal tasks have to be suitably skilled or else have to be instructed by suitably skilled persons. On account of their technical training and experience, such skilled persons have sufficient knowledge of the installation or machine. These persons are sufficiently familiar with the applicable domestic work protection and accident prevention regulations of relevance here, that they are able to assess the operational safety of the installation or machine.

It is necessary to implement accident- and fall-prevention measures, whenever tasks are performed or areas are traversed at height.

11.3 Avoid property damage

Please note the **intended use** (cf. section 2) and the **technical information** (cf. section 19) described in this manual.

11.4 Operating conditions and limitations of use

Please note the **intended use** described in this instruction manual (cf. section 2), **foreseeable misuse** (cf. section 5) and the **technical information** (cf. section 20). The pressure sensitive edges and downstream machine control must together meet the performance level that was determined by the risk assessment.



Attention!

During a hazard, the machine must not be restarted.

11.5 Assembly

Perform the assembly as described in section 12 and always carry out a function test afterwards. Do not make any alterations to the installation after the function test has been successfully carried out.

11.6 Repairs / Alterations

Do not carry out any repairs to the safety edge. Do not replace or exchange any parts. Send damaged or faulty components to Haake Technik GmbH to be repaired.

Do not make any alterations to the component. Otherwise, this could lead to malfunctions, which can cause serious personal injury and irreparable damage to property.

In the event of non-compliance, the guarantee is invalidated and Haake Technik GmbH does not accept any liability.

11.7 Electrical equipment

Electrical connections may only be carried out by qualified electricians who are familiar with all international, national and, where appropriate, regional electrical engineering regulations.

Work must only be carried out when the power supply has been shut off.

Always ensure external protection of the pressure sensitive edge with an overcurrent fuse of 0.5 A (rated value).

12 Installation



Attention!

Always select an attachment that is sufficiently secured against loosening for installation. The overall safety of the machine depends on the proper execution of the installation.

12.1 Preparation

Before starting installation, make sure that the type designation specified in this instruction manual matches the type name on the pressure sensitive edge.

When installing the pressure sensitive edge, you will need the following hardware that is **not** included in the scope of delivery:

- Mounting material: Screws, threaded nuts (M6 / M8) depending on the pressure sensitive edge type
- Screw locking (e.g. gear wheels, disc springs, wave washers or screw glue)

The following tools (tools) are needed to assemble the pressure sensitive edge:

- Drilling machine, and drill bit 6.6 mm; 9.0 mm
- Countersink 90°
- Key ring / open-end spanner or socket spanner SW 7mm, SW 8 mm, SW 10 mm, SW 13 mm, depending on the pressure sensitive edge type
- Crosstip screwdriver
- Voltage tester

Clean the work environment by removing dirt, grease and oil.

12.2 General approach

Use suitable tools when installing the safety edge. Otherwise, bolts and nuts may become damaged and unusable.

Do not exceed the max. torque when tightening the nuts.

Always use one of the screw locks specified in section 12.1.

12.3 Installation instructions

Make the mounting holes according to the design of the safety edge. The location of the mounting holes is specified by the customer's order and to take there, or to tap on the safety edge.

The mounting procedure depends on local circumstances.

Observe the following basic instructions:



Attention!

The aluminum profiles must be mounted only on completely flat surfaces. Cavities under the safety edge can lead to permanent deformations and thus affect the integrity of the system.

It is important to ensure that no objects are able to penetrate the deformation chamber of the sensor profile.

The profiles HSC 95-35-03 T, HSC 65-35-03 T, HSC 40-20-03 T and HSC 35-20-03 T are to be arranged so that the flange profile always points to the machine side and the sensor profile to the proximity side.

In case of mounting orientation D according to DIN EN ISO 13856-2, Figure 6, with $\gamma = 0^\circ$, the sensor profile must be secured against slipping out of the aluminum profile by clamping plates at the ends.



Attention!

It is not permitted to shorten pressure sensitive edges!

If a pressure sensitive edge must be shortened for operational reasons, this must be done exclusively by the manufacturer.

No liability is accepted in the event of improper installation!

12.4 Electrical connection

The integration of the pressure sensitive edge in the control circuits of the machine control is performed according to EN 60204-1 "Electrical equipment of machines". The core piece of the control unit creates e.g. a logical unit for safety functions which realizes the required performance level in conjunction with the pressure sensitive edge.

Due to the positively driven contact, it can be directly connected to a safety switching device responsible for the implementation of safety-related signals of the pressure sensitive edge.

The electrical connection of the pressure sensitive edge must be carried out according to the following instructions:

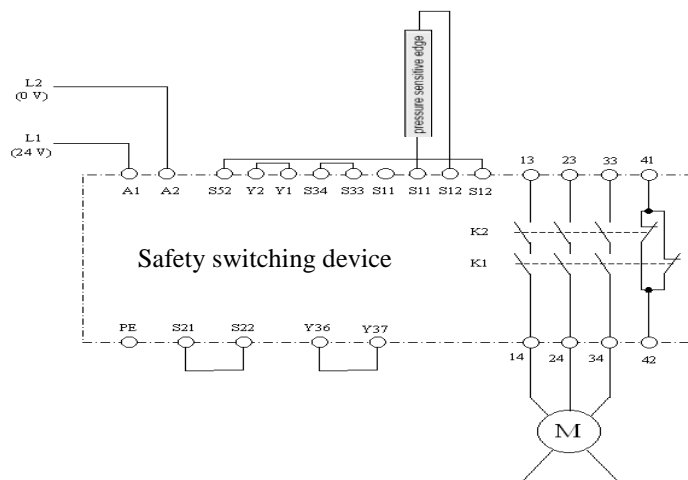
Rated voltage: < 50 V AC, 75 V DC (with safe disconnection to the grid).

A voltage source for SELV or PELV systems according to DIN VDE 0100-410 must be used.

Rated current: < 0.5 A

The power supply of the pressure sensitive edge must be protected externally!

Overcurrent protection of 0.5A (rated value)



Connection example (symbolic representation).

For information on the respective safety switching device, please refer to the operating instructions of the respective product.

Additional installation instructions for cable connections:

- After cutting to the required length, all cable ends must be provided with crimp contacts.
- The surface on which the safety edge is mounted must be flat and clean.
- With pressure sensitive edges that have been joined together, cable connections must be arranged in an offset manner, properly connected and separately insulated from each other.
- The sensor profile and the connection cables must not be damaged.
- All lines must be laid with protection against external mechanical influences.
- Depending on the type of cable connection, protection rating IP 65 must be ensured also at connection points, e.g. by appropriate sheaths or enclosures (cabinet installation).

No liability is accepted in the event of improper installation!

13 Performance check



Attention!

The protective effectiveness of the safety edge must be checked regularly

- at least once a year

or

- in intervals according to national operating instructions

Once installed, do not loosen any bolts or nuts or remove any pins; otherwise, the effectiveness of the safety-related functions is no longer guaranteed.

Run the following tests after installation and document the results in the acceptance report (section 22):

- Check all wire connections on the machine control for proper arrangement and fixed connection.
- Check the mounting orientation and pressure sensitive edge attachments
- Check the switch strips the surface thoroughly for external damage (visual inspection).
- Check the safety function of the total system by repeated actuation of the pressure sensitive edges at different points of the effective actuation area, preferably by a test body of Ø 80 mm with a maximum force of 150 N.
- Check the reset function, if available.

With a high degree of pollution or at temperatures below freezing point, short test intervals (at least once before each shift) are advisable.

14 Commissioning, Operation

After the pressure sensitive edges have been properly installed, connected and tested, the technical equipment on which the pressure sensitive edge was installed can be turned on and operated in accordance with its intended use.

No further work on the pressure sensitive edges is required.

15 Attention!



Attention!

Adapt the frequency of checks to the environmental conditions at the application site.

No maintenance of the internal parts of the safety edge is required.

Damaged or defective pressure sensitive edges must be replaced.

16 Cleaning

As a rule, no cleaning is required. Soiled pressure sensitive edges can be cleaned by wiping with a cloth and mild soap.



Attention!

Only use other cleaning methods after prior consultation with the manufacturer.

17 De-installation



Attention!

Only uninstall the safety edge when power to the electrical system is switched off.

- Disconnect the electrical connection (section 12.4).
- Loosen the attachment of the pressure sensitive edge, depending on the version. (Section 12.3).

18 Troubleshooting

| Fault | Possible cause | Remedy |
|---|--|--|
| No interruption of the signal | Connection cable is damaged, short-circuit | Contact Haake Technik GmbH. |
| | There are objects in the deformation chamber | Remove objects. |
| No ON signal. | Defective connecting terminals | Check terminals and tighten if necessary |
| | Cable break | Contact Haake Technik GmbH. |
| | Damaged contact chain | Contact Haake Technik GmbH. |
| Pressure sensitive edges cannot be mounted. | Wrong aluminum profile | Contact Haake Technik GmbH. |
| | Aluminum profile is damaged. | Contact Haake Technik GmbH. |

19 Transport, handling, unpacking, storage



Attention!

Note the total weight of a packaging unit and always use a suitable transport means.

Dimensions and mass of the packing can be taken from the scope of the order. The products are placed in an overpack. Depending on the number of parts to be shipped, cardboard boxes, crates, pallets or containers are used for packaging. Wooden boxes are provided with a lid.

19.1 Transportation and handling

If weight is unevenly distributed, the center of gravity is indicated on the wooden box. Depending on their length, pressure-sensitive edges must be handled by one or two people.

In each transport container, products are lined with filling material for loose gaps, to ensure the goods are protected in transit.

Returned goods must be similarly packed to avoid damage in transit.

Improperly packaged returns will be invoiced if the goods are damaged.

19.2 Unpacking

Special care is needed when opening the packaging.

Open **products in cartons** with a knife at the points where adhesive tape was used. When opening, make sure you cut with the knife away from your body.

Cardboard rolls have plastic covers on the end faces attached with clamps to the rolls. Pull out the clamps on one side of the roll with a pair of pliers and remove the plastic cover.

The lid of **wooden boxes** is attached by nails or screws to the box. Therefore use a claw or screwdriver when opening. Always pull nails or screws entirely out of the wood to avoid injuries.

Remove product from the filling material and place it on a clean surface.

19.3 Storage

Never bend or roll up sensors, always store them flat; safty edge must fully lie on the surface.

If pressure sensitive edges are to be stored for a long time, they should be placed in the original packaging. A dry environment with a temperature range of 5 to 55 °C must be chosen for storage. This prevents damage caused by external interferences or environmental influences.

20 Technical Data

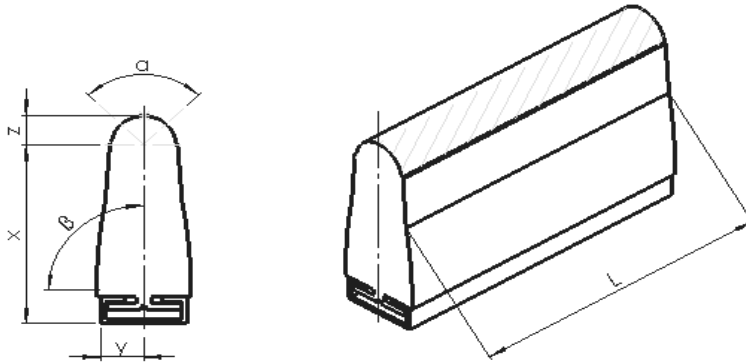
| | |
|--|---|
| Environment: | Indoor / outdoor |
| Temperature range: | -20° C to +55° C |
| Humidity: | to 100% (standard climate) |
| Material: | |
| Sensor profile: | TPE SEBS |
| Mounting profile: | Aluminum |
| Connecting line: | PVC, double insulated, highly flexible single core cables, d=3.5 mm Other lines are possible after consultation with the manufacturer. |
| Ambient atmosphere: | industrial environments |
| Resistance of the sensor surface: | |
| Ozone resistance: | good |
| UV Resistance: | good |
| Acids | good |
| Alkalis | good |
| Water | good |
| Coolant | good |
| Cutting fluid | good |
| Oil resistance: | medium |
| Resistance to detergents: | good |
| Ammonia, liquid: | good |
| Methanol (<40%): | good |
| Mounting position: | all positions (according to DIN EN ISO 13856-2; Fig. 6) |
| Service life: | 10 years |
| Values according to DIN EN ISO 13849-1: | |
| B10d value: | |
| HSC 35-20-xx T: | 364456 |
| HSC 40-20-xx T: | 210860 |
| HSC 65-35-xx T: | 129262 |
| HSC 95-35-xx T: | 131776 |
| Category: | 3 |
| Diagnostic coverage: | low |
| Performance Level: | up to d possible |
| Mean Time To Failure (MTTF _d): | Application-dependant |
| Protection class: | IP 65 |
| Total length with assembled sensors: | max. 50 m |
| Rated voltage: | <50 V AC, 75 V DC |
| Rated current: | ≤ 0.5 A |
| Load | max. 500 N within the effective operating angle |
| Deformation > 24 h: | suitable |
| Effective actuation angle: | α = 90° |
| Constructive information: | β = 90° |

21 Dimensions

Dimensional specifications in mm.

| Safety edge | X | Y | Z | α | β |
|----------------|----|----|----|----------|---------|
| HSC 35-20-xx T | 24 | 10 | 11 | 90° | 90° |
| HSC 40-20-xx T | 29 | 10 | 11 | 90° | 90° |
| HSC 65-20-xx T | 47 | 13 | 13 | 90° | 90° |
| HSC 95-20-xx T | 75 | 13 | 13 | 90° | 90° |

Symmetric without ineffective area at the ends



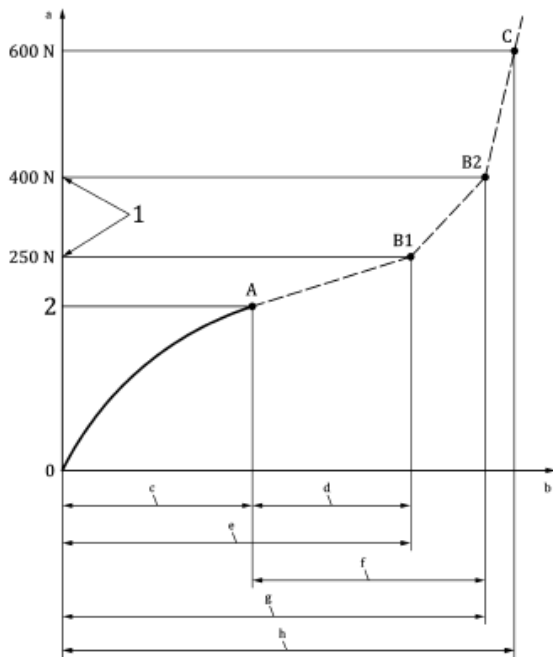
- α : Effective actuation angle
 - β : Constructive angle
 - X: Constructive dimension
 - Z: Constructive dimension;
 - α and L: Effective actuation area
- [Explanation of the geometrical dimensions on the basis of
DIN EN ISO 13856-2 for determination of the effective actuation area]

22 Actuating forces and response times:

| Safety edge | Operating speed 10 mm/s | Operating speed 100 mm/s | Actuating force (bei 100 mm/s) | weight per meter |
|----------------|----------------------------|-----------------------------|-----------------------------------|---------------------|
| HSC 35-20-01 T | Response time 494 ms | Response time 52 ms | 82 N | 0.7 kg |
| HSC 35-20-02 T | Response time 494 ms | Response time 52 ms | 82 N | 0.75 kg |
| HSC 35-20-03 T | Response time 494 ms | Response time 52 ms | 82 N | 0.75 kg |
| HSC 40-20-01 T | Response time 851 ms | Response time 88 ms | 65 N | 0.75 kg |
| HSC 40-20-02 T | Response time 851 ms | Response time 88 ms | 65 N | 0.8 kg |
| HSC 40-20-03 T | Response time 851 ms | Response time 88 ms | 65 N | 0.8 kg |
| HSC 65-20-01 T | Response time 712 ms | Response time 129 ms | 84 N | 1.5 kg |
| HSC 65-20-02 T | Response time 712 ms | Response time 129 ms | 84 N | 1.6 kg |
| HSC 65-20-03 T | Response time 712 ms | Response time 129 ms | 84 N | 1.6 kg |
| HSC 95-20-01 T | Response time 1183 ms | Response time 161 ms | 104 N | 1.8 kg |
| HSC 95-20-02 T | Response time 1183 ms | Response time 161 ms | 104 N | 2.0 kg |
| HSC 95-20-03 T | Response time 1183 ms | Response time 161 ms | 104 N | 2.0 kg |

Force-displacement diagrams:

Force-displacement diagrams in accordance with DIN EN ISO 13856-2 for individual operating speeds can also be obtained from the manufacturer.



Legend:

- A response distance (operating point and actuation force at maximum operating speed)
- B deformation (for example, the force-displacement points B1 and B2 come at a force of 250 N and 400 N at a operating speed is less than or equal to $10 \text{ mm} \cdot \text{s}^{-1}$ in front)
- C total distance (for example at 600 N at an operating speed less or equal to $10 \text{ mm} \cdot \text{s}^{-1}$)
- 1 reference force
- 2 lowest actuation force
- a force in Newtons (N)
- b distance in millimeters (mm)
- c response distance
- d overtravel distance at 250 N
- e deformation at 250 N
- f overtravel distance at 400 N
- g deformation at 400 N
- h total distance

Test parameters:

$T=20^{\circ}\text{C}$, mounting orientation B and measurement location C3 (see DIN EN ISO 13856-2; Fig. 6 and 7).

Operating speed of 100 mm / sec

The following diagrams are to be used for the selection process (cf. section 21).

| Safty egde | Force (N) | c response distance (mm) | d at 250 N overtravel distance (mm) | f at 400 N overtravel distance (mm) | e at 250 N deformation (mm) | g at 400 N deformation (mm) | h total distance (mm) |
|----------------|-----------|--------------------------|-------------------------------------|-------------------------------------|-----------------------------|-----------------------------|-----------------------|
| HSC 35-20-xx T | 82 | 5,2 | 6,6 | 7,9 | 11,8 | 13,1 | 13,5 |
| HSC 40-20-xx T | 65 | 8,8 | 7,7 | 9,7 | 16,5 | 18,5 | 18,7 |
| HSC 65-35-xx T | 84 | 12,9 | 15,1 | 16,8 | 28,0 | 29,7 | 30,1 |
| HSC 95-35-xx T | 104 | 16,1 | 29,6 | 32,3 | 45,7 | 48,4 | 49,1 |

23 Selection procedure

The three most important parameters for selecting the appropriate pressure sensitive edges are:

- Determination of the required performance level
- Speed of the dangerous movement
- stopping distance of the dangerous elements

The evaluation proceeds stepwise as follows:

| Step | Action | Remark |
|------|---|---|
| 1 | Determination of the required PL according to DIN ISO 13849-1 | a) Results from the information in the C standard b) Results from the risk assessment to be carried out, based on the particular application |
| 2 | Determining the required operating speed (VB) | a) Measurement or calculation of the maximum speed of the hazardous movement (VG) b) Selection: $VB > VG$ |
| 3 | Determining the required over-travel (SN) | a) Measurement of the stopping distance (SA) of the hazardous elements b) Setting the safety factor (F); at least 1.2 c) Calculation: $SN = SA \times F$ |
| 4 | Setting the max. permissible force | a) Determining what people (e.g. elderly, children, etc.) and what body parts are to be protected b) Selection: Maximum permissible force is as low as possible |
| 5 | Selecting the system | a) Select a system using the determined values and respective force-displacement diagram. In doing so, ensure the overtravel force is smaller than the maximum permissible force in step 4. |



NOTE!

Category and performance level of the safety edge must correspond to the information obtained from the risk assessment of the machine.

The user has to determine the performance level for their particular application.

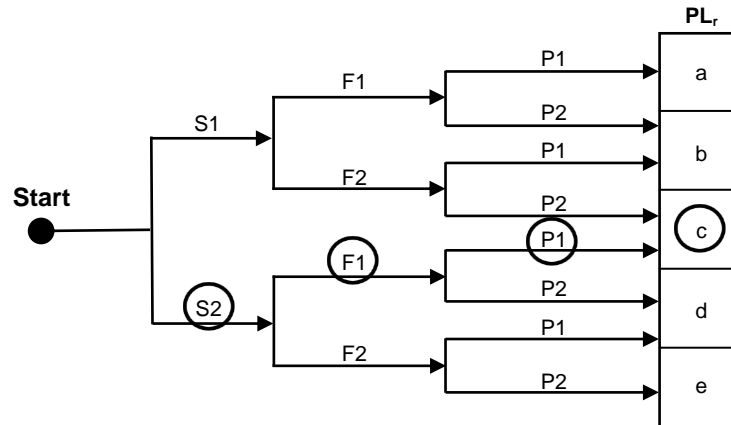
24 Application example

Pressure sensitive edges are needed to secure the pinch point on a power-operated safety door of an assembly machine. The protective door closes automatically with a speed of 50 mm/s.

The assembly machine is operated 24 hours a day, 6 days a week and on 220 days per year.

The protective door is opened every 20 minutes for control purposes, then closed.

Determining the PL, according to DIN EN ISO 13849-1



Risk parameters:

| S | Severity of injury | F | Frequency of and/or duration of exposure to hazard | P | Possibility of avoiding the hazard |
|----|--|----|---|----|---------------------------------------|
| S1 | slight (normally reversible injury) | F1 | seldom-to-less-often and/or exposure to hazard time is short | P1 | Is possible under specific conditions |
| S2 | serious (normally irreversible injury or death) | F2 | frequent-to-continuous and/or exposure to hazard time is long | P2 | Is scarcely possible |

Calculating the Mean Time Between Failures (MTTF_d) according to DIN EN ISO 13849-1:


| | |
|--|--------------------------------|
| Mean operating time in days per year (d _{op}): | 220 days/year |
| Mean operating time in hours per day (h _{op}): | 24 h/day |
| Mean time between the start of two consecutive cycles of the pressure sensitive edges (t _{cycle}): | 1200 sec/cycle |
| Mean number of annual actuations (n _{op}): | 15840 cycles/year (calculated) |
| B10 _d : | 129262 (HSC 65-35-xx T) |
| MTTF _d : | 81 yaers |

Determining the PL according to DIN EN ISO 13849-1

| | |
|---------------------|-----------------|
| Category: | 3 |
| MTTF _d : | 81 years = high |
| Performance Level: | d |

25 Acceptance report

The acceptance report must be completed by the operator:

| Haake Technik GmbH Vreden | | Acceptance report Pressure-sensitive edges – type: | |  | | |
|------------------------------|--|---|--------|---|----|--------|
| Operator: | | Object: | | Company: | | |
| | | Pressure-sensitive edges: | | Name: | | |
| Order number: | | Serial No.: | | Date: | | |
| | | | | Signature: | | |
| No. | Activity | Measurement | | Free of defects | | Remark |
| | | Target | Actual | Yes | No | |
| 1.0 | Visual inspection, if appropriate also of the deformation chamber, with regard to penetrated objects | | | | | |
| 1.1 | Attachment of pressure-sensitive edges | | | | | |
| 1.2 | Damage to the pressure-sensitive edges | | | | | |
| 1.3 | Damage to the connection lines | | | | | |
| 1.4 | Damage to the cable gland | | | | | |
| 1.5 | Connection for cables | | | | | |
| 1.6 | Reset button / function | | | | | |
| 1.7 | Protective effect overall system | | | | | |

26 EC Declaration of Conformity



EC Declaration of Conformity in accordance with EC Directive 2006/42/EC, Annex II A.

The company **Haake Technik GmbH**
Master Esch 72
D-48691 Vreden, Germany

hereby declares that the safety edges of the series:

HSC

Serial number: **See identification plate**

in their delivered form comply with the following relevant provisions:

EC Directive: **Machinery Directive 2006/42/EC**

Harmonised standard: **DIN EN ISO 13856-2**

HSC safety edges are used to provide protection at pinching and shearing points, e.g. at machine guards, elevating platforms, lifting and tilting equipment, packaging machinery, palletisers and depalletisers, etc.

Our quality management system guarantees that all components of the series are manufactured to the same quality. Consequently, the issued declaration of conformity applies to all products listed in the appendix at all times.

The authorised representative responsible for the compilation of the technical documents is:

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Vreden, 05.12.2013

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