SIEMENS

SICONT 3SE3 Limit Switches
Selection & Installation Guidelines

... because safety cannot be compromised

for any clarification, pls. contact us on
AD.CDPM@kwa2.siemens.co.in or fax (022)-760 0076

Open/Enclosed Limit Switches:

The limit switch version, i.e. open type or metal enclosed, is selected according to the conditions existing at the point of installation. In a dry, dust-free environment, such as in switchgear cubicles, the open-type limit switch can be used (degree of protection : IP 20). If moisture and mechanical stresses (e.g. shocks, impact) occur or if there is additional thermal stress (e.g. hot swarf), the metal-enclosed limit switch (degree of protection: IP 67) must be used.

The available installation space determines the dimension (40mm width or 56mm width) of the limit switch to be selected.

Actuators :

To cover a wide range of duties, a range of actuators is offered. These actuators differ with respect to permissible direction of actuation, speed of actuation & type of actuating element.

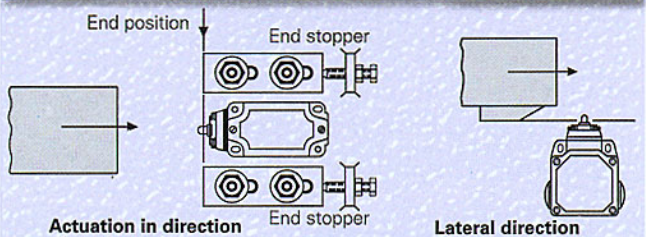
Hence, proper selection of actuator heads is necessary.

Selection Guidelines :

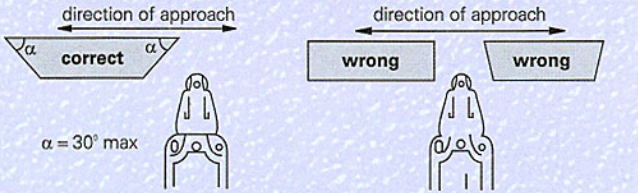
- SICONT 3SE3 limit switches must be actuated for atleast 0.1s, to ensure that the control command is transmitted
- The actuators & contact blocks are interchangeable between the two enclosures namely 40mm and 56mm
- For lateral direction of actuation, the respective approach and trailing angles of the actuating element should be of equal magnitude.
- Under no circumstances may the limit switch be used as a mechanical stop on a moving section of machine.

for any clarification, pls. contact us on
AD.CDPM@kwa2.siemens.co.in or fax (022)-760 0076

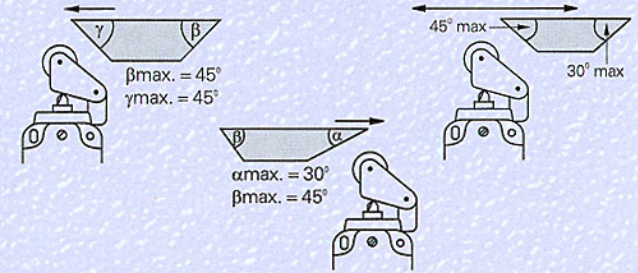
With Push Rod (3SE3...B) & Overtravel Plunger (3SE3...C)



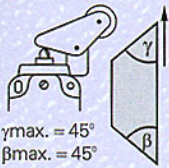
Roller Plunger (3SE3...D)

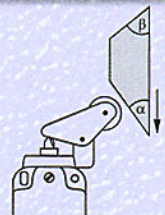


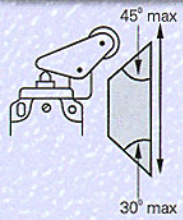
Roller Lever (3SE3...E)



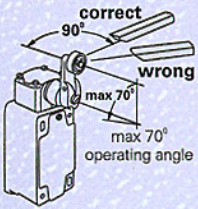
Angular Roller Lever (3SE3...F)

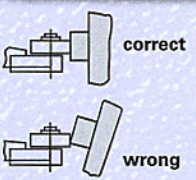






Crank Lever (3SE3...G) & Adjustable Length Roller Crank (3SE3...U)





Approach of actuators with roller

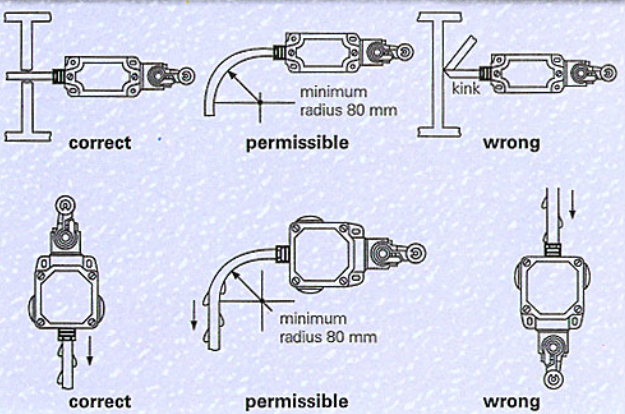
Benefits

High operational reliability due to	Galvanically separated contact element
Limit switch for every application, thanks to	Wide range of actuators; open / enclosed limit switch; snap; normal; & overlapping
Assured safe operational state as a result of	"Direct opening action" as per IEC 947-5-1
World wide acceptance ensured by conformance to	International standards / CE mark
Compatible with electronic circuits on account of	Double moving contacts

Range of Limit Switch Actuators

Actuator	Advantages	Comments
• With Push Rod • Overtravel Plunger • Roller Plunger	Approach possibilities in the direction of plunger stroke or with an actuating plunger at right angles to the plunger axis from any direction; Possibility of overtravel in the case of overtravel plunger and therefore a longer actuating travel	The limit switch must not be used as an end stop; Approach and trailing angle must be equal; Overtravel and roller plungers require higher actuating force.
• Roller Lever • Angular Roller Lever	For higher approach speed; very high mechanical service life	–
• Crank Lever • Adjustable Length Roller Crank	For higher approach speed; many approach possibilities; insensitive to environmental influences such as oil, dirt, sawdust, ice.	–

Installation Guidelines



Practical Tips :

Limit switches, especially open-type devices, must be fixed on a level surface, so that when they are screw-fitted, no torsional moments are exerted on the moulded-plastic enclosure.

Fastening, connecting, aligning & testing during the operating sequence must be easily possible and without danger.

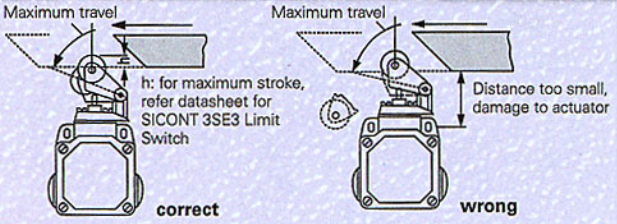
A limit switch must be easily accessible, without mechanical components having to be removed (except for protective grids and maintenance doors)

The cable entries must be sealed so that no liquids (jets of water, drilling emulsion etc.) can enter the interior of the enclosure.

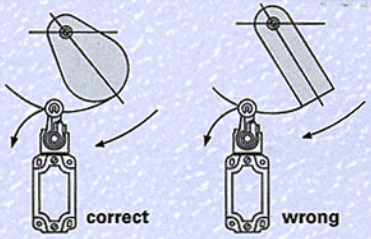
The following points should also be taken into account :

- Positive driving of the actuator for the greater part of its travel until positive opening takes place.
- Securing the mounting element of the switch and of the actuating element (cam plate, straight edge) against loosening.
- The switch may not be used as a mechanical stop.
- Protection against overrun.
- Protection against damage from external sources.
- Accessibility for maintenance and function testing.

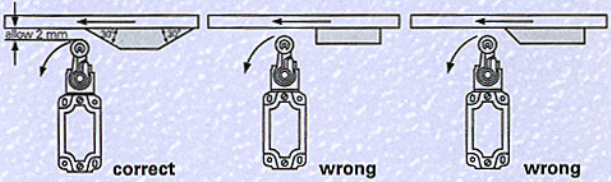
Maximum permissible travel / angle



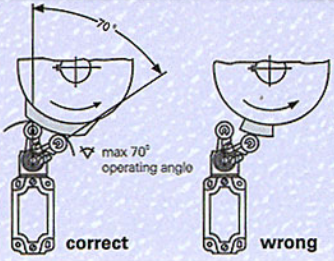
Actuation by cam plate



Actuating cam on straight edge



Actuating cam on a shaft



Selection Table

Limit switch (Open Type); 2 contact, (IP 20)		
Arrangement	**No. of contacts**	**Type**
Normal	1 NO + 1 NC	3SE3 020 0A
Snap Action	1 NO + 1 NC	3SE3 020 1A
Overlapping	1 NO + 1 NC	3SE3 020 3A

Limit switch (Open Type); 3 contact, (IP 20)		
Arrangement	**No. of contacts**	**Type**
Normal	1 NO + 2NC	3SE3 023 0A
Normal	2 NO + 1 NC	3SE3 023 1A
Overlapping	1 NO + 2 NC	3SE3 023 2A
Overlapping	2 NO + 1 NC	3SE3 023 3A

Limit switch in Enclosure; 2 contacts, (1 NO + 1 NC), (IP 67)		
ActuatorType	**56 mm enclosure**	**40 mm enclosure**
with push rod	3SE3 100 _B	3SE3 120 _B
Normal roller lever	3SE3 100 _E	3SE3 120 _E
Angular roller lever	3SE3 100 _F	3SE3 120 _F
Crank lever	3SE3 100 _G	3SE3 120 _G
Overtravel plunger	3SE3 100 _C	3SE3 120 _C
Roller plunger	3SE3 100 _D	3SE3 120 _D
Adjustable length roller crank	3SE3 100 _U	3SE3 120 _U

In 8th position(_) please add 0 for normal action; 1 for snap action; & 3 for overlapping (Overlapping type is available only for limit switch in 56mm enclosure)

01200005 Printed