



Bewegungs-, Vibrations- & Neigungsschalter Metall- und Glasgekapselt mit & ohne Quecksilber *Movement, vibration & shock sensing, inclination*

ERLÄUTERUNG/DESCRIPTION

Die Produkte in dieser Broschüre sind für die Bewegungs- oder Winkelerfassung ausgelegt. Eingeschlossen sind: Neigung, Drehung, Vibration, Schock & Beschleunigung. Einige Modelle sind auch für SMD-Montage ausgelegt.

The products included in this section are all designed to detect motion or movement. Forms of movement are: Tilt, Rotation, Vibration, Shock or Acceleration. Many of these are available for surface mount application.

Beschleunigung & Schock/Acceleration and Shock

Diese Schalter sind normal „offen“ und schliessen bei der Einwirkung der entsprechenden Beschleunigung. *These switches have a normally open contact which closes when the switch reaches the acceleration activation level.*

Neigungssensoren/Tilt Angle Sensors

Das Ausgangssignal ändert sich proportional mit der Neigung. Potentiometrisch bis $140^\circ \pm$ oder mit Mikroprozessor $\pm 45^\circ \pm$ (mV).

The output changes in proportion to the tilt angle. The sensors operates in one plane $90^\circ \pm$ or up to $140^\circ \pm$.

Bewegung & Vibration/Movement and Vibration

Der Schalter reagiert bei genügender Bewegungsänderung oder Vibration.

When correctly positioned the switch contacts will react by giving a fleeting change of state when subjected to movement or vibration.

Neigungsschalter/Tilt Switches

Diese ändern den Schaltzustand bei Änderung der horizontalen Lage. Es bedarf einer bestimmten Neigungsänderung bis der Schalter reagiert (Hysteresis).

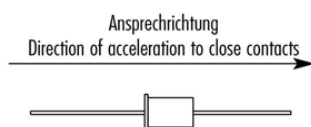
These operate when tilted from the horizontal position. The switch movement required to cause contact change is called the differential angle.

Neigungsschalteer/Tip-Over Switches

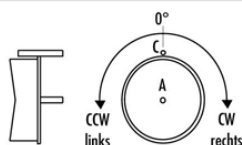
Diese Schalter sprechen bei einer bestimmten Neigung zur Vertikalen an. Der Bewegungswinkel, der bis zum ansprechen nötig ist, ist der Betriebwinkel. Verschiedene Schalter funktionieren rund um 360° (omnidirektional).

These operate when the switch is tilted from the vertical position. The angle through which the switch has to move before operating is called the operating angle. Many of these switches are omni-directional.

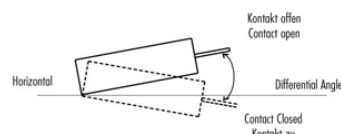
Schock/Acceleration & Shock



Neigungs-(Winkel)-Sensor /Angle Sensors



Neigungsschalter/Tilt Switch



SURFACE MOUNT



SCHOCK/SHOCK ACCELERATION



INKLINATION-ANGLE



VIBRATION BEWEGUNG/MOVEMENT



Quecksilberfrei
Non Mercury

Hg/Mercury

NEIGUNG/TILT



Quecksilberfrei
Non Mercury

Hg/Mercury

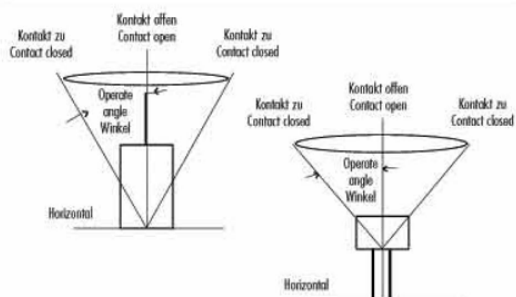
TIP-OVER (VERTIKAL)



Quecksilberfrei
Non Mercury

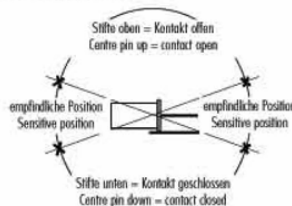
Hg/Mercury

Neigungsschalter/Tip-over switch

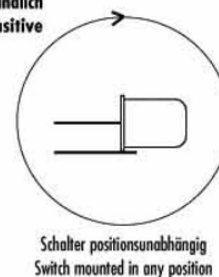


Movement & Vibration

Positionsempfindlich Position Sensitive



Positionsunempfindlich Non Position Sensitive



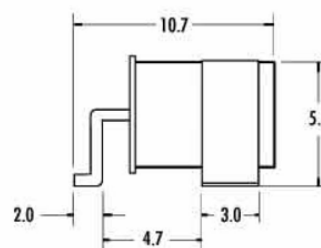
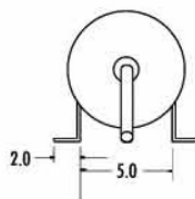
Surface Mount Switches and Sensors

We can now supply surface mount termination for a wide range of our products. Gold plated contacts give good solderability and are designed to provide stability during assembly. The following products can be supplied for SMD either loose or taped and reeled. Contact the Sales Office for details



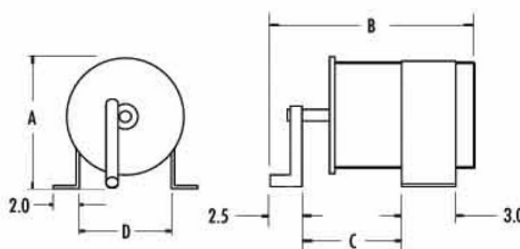
Acceleration Switches See page 3 for switch specifications

ASLS - 2 - PP
ASLS - 5 - PP
ASLS - 10 - PP
ASLS - 15 - PP



Movement/Vibration Switches See page 6 for switch specifications

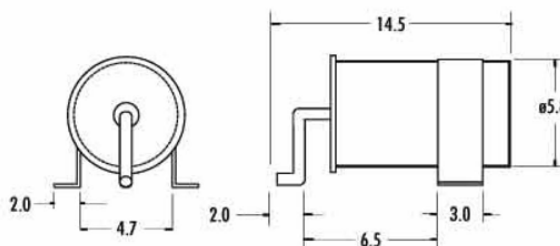
BS79-S
BS79R-S



	BS79-S	BS79R-S
A	10.0	6.6
B	15.5	9.0
C	7.0	3.0
D	9.0	5.0

Tilt Switches See page 7 for switch specifications

CW1300 - PP

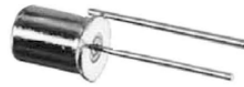
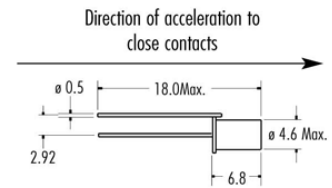


Acceleration and Shock



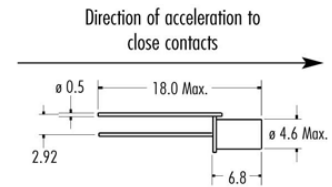
ASLS-2

Contact Form/Style	Normally Open	
Switching Voltage	Max. Vdc	24
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	5
Contact Resistance	Max. Ω	10
Operating Temperature	Deg. °C	-20° +85°
Storage Temperature		-25° +90°
Activation Level	G	2 - 4.9
Case Material	Steel - gold plated	



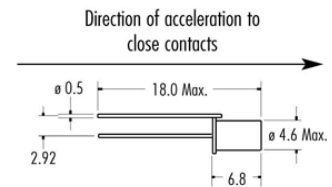
ASLS - 5

Contact Form/Style	Normally Open	
Switching Voltage	Max. Vdc	24
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	5
Contact Resistance	Max. Ω	10
Operating Temperature	Deg. °C	-20° +85°
Storage Temperature		-25° +90°
Activation Level	G	5.0 - 9.9
Case Material	Steel - gold plated	



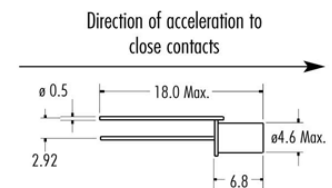
ASLS - 10

Contact Form/Style	Normally Open	
Switching Voltage	Max. Vdc	24
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	5
Contact Resistance	Max. Ω	10
Operating Temperature	Deg. °C	-20° +85°
Storage Temperature		-25° +90°
Activation Level	G	10.0 - 14.9
Case Material	Steel - gold plated	



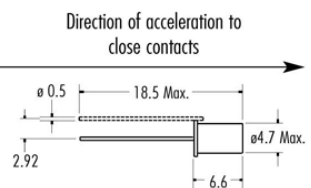
ASLS - 15

Contact Form/Style	Normally Open	
Switching Voltage	Max. Vdc	24
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	5
Contact Resistance	Max. Ω	10
Operating Temperature	Deg. °C	-20° +85°
Storage Temperature		-25° +90°
Activation Level	G	15.0 - 19.9
Case Material	Steel - gold plated	



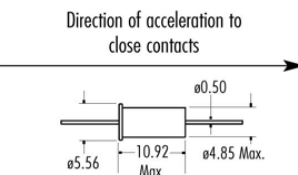
AS1303-0 (1 electrode)
AS1303-1 (2 electrodes)

Contact Form/Style	Normally Open	
Switching Voltage	Max. Vdc	24
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	3
Contact Resistance	Max. Ω	20 at 2g overdrive
Operating Temperature	Deg. °C	-35° +100°
Storage Temperature		-40° +125°
Activation Level	G	3.0 - 9
Case Material	Tin plated	



ASS - 25 (25.0 ± 2.0)
ASS - 45 (45.0 ± 3.0)

Contact Form/Style	Normally Open	
Switching Voltage	Max. Vdc	24
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	5
Contact Resistance	Max. Ω	10
Operating Temperature	Deg. °C	-20° +85°
Storage Temperature		-25° +90°
Activation Level	G	45.0 ± 3.0
Case Material	Steel - tin plated	



Movement/Vibration - Non Mercury

GENERAL INFORMATION

Due to the unique features of these modules and the wide range of motion and vibration they may be subjected to, we suggest actual testing to determine the suitability of the module for each operation.

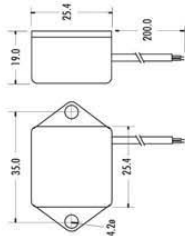
BS79U/65



Supply Voltage	Max. Vdc	N/A
Supply Current	Max. mA	N/A
Operating Voltage	Max. Vdc	24Vdc
Operating Current	Max. mA	75
Output		N/A
Operating Temperature	Deg. °C	-20° +70°
Storage Temperature	Deg. °C	-20° +75°
Cable / Termination		2 x round 0.22 P/C covered and insulated

- FEATURES
- BS79 switch in a plastic housing
 - Omni-directional
 - Fully encapsulated and sealed

This non-mercury sensor has been designed to detect movement or vibration. The sensor will reset when disturbed by giving a fleeting change of state (ie n/o to n/c or vice versa). The time taken to settle depends on the amount of energy absorbed by the sensor; the settled state will normally be closed. The sensors contacts, when undisturbed, are normally closed, however it is possible to mount the switch with contacts open therefore we recommend that applications look for change of state not contact open or closed.



Patent applied for

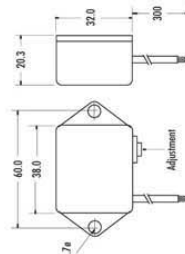
BS79F/85



Supply Voltage	Max. Vdc	5
Supply Current	Max. mA	40
Operating Voltage	Max. Vdc	N/A
Operating Current	Max. mA	N/A
Output		24mA at 5Vdc
Operating Temperature	Deg. °C	-10° +70°
Storage Temperature	Deg. °C	-10° +75°
Cable / Termination		3 x round 0.14 P/C covered and insulated

- FEATURES
- MS24 switch in a plastic housing
 - Omni-directional
 - Fully encapsulated and sealed
 - Sensitivity adjustment

This non-mercury sensor has been designed to detect movement or vibration. The sensor will reset when disturbed by giving a fleeting change of state (ie n/o to n/c or vice versa). The time taken to settle depends on the amount of energy absorbed by the sensor; the settled state will normally be closed. The sensors contacts, when undisturbed, are normally closed, however it is possible to mount the switch with contacts open therefore we recommend that applications look for change of state not contact open or closed. This product offers additional sensitivity adjustment via an internal potentiometer. The output is referenced to 0V and can drive a transistor or similar device.



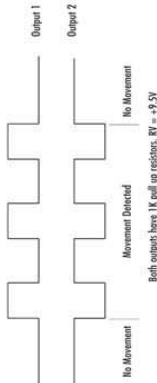
Patent applied for

Movement/Vibration - Non Mercury

BS79I/85

The BS79I/85 requires a 10V supply and has two LEDs for output monitoring and setting up. When operating there are two digital outputs which change state when movement is detected. When no movement is present one output will be logic high, the second will be logic low. When movement is detected the output states will change until the unit settles again.

The unit operates in all positions and is fully encapsulated.



BS79I/85

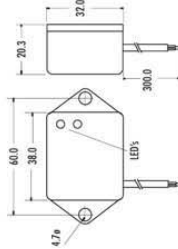
Supply Voltage	Max. Vdc	10
Supply Current	Max. mA	50
Operating Voltage	Max. Vdc	N/A
Operating Current	Max. mA	N/A
Output		Digital
Operating Temperature	Deg. °C	-10° +70°
Storage Temperature	Deg. °C	-10° +75°
Cable / Termination		4 x round 0.22 P/C covered and insulated



- FEATURES
- BS79 switch in a plastic housing
 - Omni-directional
 - Fully encapsulated and sealed
 - Digital output with status indication

Patent applied for

This non-mercury sensor has been designed to detect movement or vibration. The sensor will reset when disturbed by giving a fleeting change of state (ie n/o to n/c or vice versa). The time taken to settle depends on the amount of energy absorbed by the sensor; the settled state will normally be closed. The sensors contacts, when undisturbed, are normally closed, however it is possible to mount the switch with contacts open therefore we recommend that applications look for change of state not contact open or closed. This product has a digital output with status indication. The unit requires a 10V supply and has two LEDs for output monitoring and setting up. There are two digital outputs which change state when movement or vibration is detected. In the undisturbed position one output will be logic high, the second will be logic low. When disturbed the output state will change.



MINIATUR-VIBRATIONSSCHALTER/SWITCH

Kontakt / contact	30mA/35VDC
delektiert jede Bewegung	Ein-Aus-Ein
detect any move, shock, vibration	ON-OFF-ON
Ohne Bewegung / motionless	Ein/ON
Dimensionen	4 Ø x 3.5 mm
Pin-Abstand, gold plattiert / pins	0.85 x 0.6 x 3.5 = L/2.9
Prüfspannung / test voltage	500V / 60 sek.
Isolation / insulation	1000MΩ Ohm (100 VDC)



Typ AXB6-P

ANWENDUNGEN/APPLICATIONS

Diebstahlschutz	Geräte- & Personenschutz
Power-shut-down	Lampen-Schalter
Schrittzähler	Spielezeuge
	Sport-Schuhe & -Instrumente
	Auto- & Gemälde-Schutz

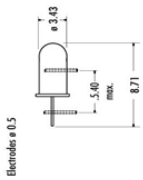
Weitere Typen auf Anfrage / other models available

Movement/Vibration - Non Mercury



CW1600-3
CW1600-3

Contact Form/Style		Position Sensitive see p4	
Switching Voltage	Max. Vac	Max. A	60
Switching Current	Max. A	Max. VA	0.1
Switching Capacity	Max. VA	Max. Deg.	3
Operating Angle	Max. Deg.	Max. C2	15
Contact Resistance	Max. C2	Operating Temperature	-37° +100°
Storage Temperature	Deg. °C	Storage Temperature	-40° +125°
Core Material	Steel - tin plated	Cable / Termination	Electrode
Features		Compact Mercury Free CW1600-0 (1 electrode) CW1600-3 (2 electrodes)	



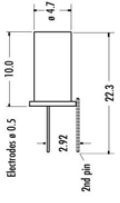
Electrodes $\phi 0.5$

8.71
max.
5.40
2.92
10.0
2nd pin
2.43



CW1300-0
CW1300-1

Contact Form/Style		Position Sensitive see p4	
Switching Voltage	Max. Vac	Max. A	60
Switching Current	Max. A	Max. VA	0.25
Switching Capacity	Max. VA	Max. Deg.	5
Operating Angle	Max. Deg.	Max. C2	N/A
Contact Resistance	Max. C2	Operating Temperature	-37° +100°
Storage Temperature	Deg. °C	Storage Temperature	-40° +125°
Core Material	Steel - tin plated	Cable / Termination	Electrode
Features		Mercury Free Patented Design CW1300-0 (1 electrode) CW1300-1 (2 electrodes)	



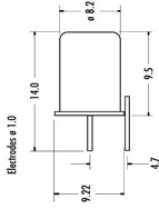
Electrodes $\phi 0.5$

22.3
2.92
10.0
4.7
2nd pin



BS79

Contact Form/Style		Non-position Sensitive see p4	
Switching Voltage	Max. Vac	Max. A	24
Switching Current	Max. A	Max. VA	0.25
Switching Capacity	Max. VA	Max. Deg.	5
Operating Angle	Max. Deg.	Max. C2	N/A
Contact Resistance	Max. C2	Operating Temperature	-37° +100°
Storage Temperature	Deg. °C	Storage Temperature	-40° +125°
Core Material	Steel - Gold plated	Cable / Termination	Electrode
Features		Gold Plated Contacts Non-Mercury contacts Omni-Directional patent applied for	



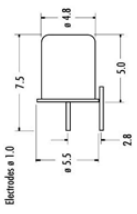
Electrodes $\phi 1.0$

14.0
9.72
4.7
9.5
8.2



BS79R

Contact Form/Style		Non-position sensitive see p4	
Switching Voltage	Max. Vac	Max. A	24
Switching Current	Max. A	Max. VA	0.20
Switching Capacity	Max. VA	Max. Deg.	5
Operating Angle	Max. Deg.	Max. C2	N/A
Contact Resistance	Max. C2	Operating Temperature	Less than 10
Storage Temperature	Deg. °C	Storage Temperature	-37° +100°
Core Material	Steel - Gold plated	Cable / Termination	Electrode
Features		Non-mercury contacts Omni-Directional Gold plated contacts	



Electrodes $\phi 1.0$

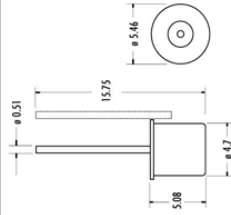
7.5
5.5
2.8
5.0
4.8

Movement/Vibration - Mercury Contacts



CM1344-0
CM1344-1

Contact Form/Style		Normally Open	
Switching Voltage	Max. Vac	Max. A	60
Switching Current	Max. A	Max. VA	0.1
Switching Capacity	Max. VA	Max. Deg.	-
Operating Angle	Max. Deg.	Max. C2	N/A
Contact Resistance	Max. C2	Operating Temperature	-37° +100°
Storage Temperature	Deg. °C	Storage Temperature	-40° +125°
Core Material	Steel Tin Plated	Cable / Termination	Electrode
Features		Non position sensitive CM1344-0 (1 Electrode) CM1344-1 (2 Electrodes)	



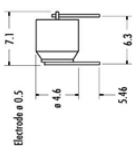
Electrodes $\phi 0.51$

15.75
5.08
4.7
5.46



CM1800-1

Contact Form/Style		Position sensitive see p2	
Switching Voltage	Max. Vac	Max. A	120
Switching Current	Max. A	Max. VA	0.1
Switching Capacity	Max. VA	Max. Deg.	3
Operating Angle	Max. Deg.	Max. C2	-
Contact Resistance	Max. C2	Operating Temperature	-37° +100°
Storage Temperature	Deg. °C	Storage Temperature	-40° +125°
Core Material	Steel tin plated	Cable / Termination	Electrode
Features		Compact, 2 electrodes	



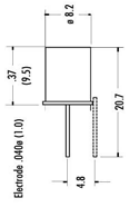
Electrodes $\phi 0.5$

7.1
4.6
5.46
4.3



CM4400-0
CM4400-1

Contact Form/Style		Non-position sensitive	
Switching Voltage	Max. Vac	Max. A	240
Switching Current	Max. A	Max. VA	1
Switching Capacity	Max. VA	Max. Deg.	100
Operating Angle	Max. Deg.	Max. C2	N/A
Contact Resistance	Max. C2	Operating Temperature	-37° +100°
Storage Temperature	Deg. °C	Storage Temperature	-40° +125°
Core Material	Steel tin plated	Cable / Termination	Electrode
Features		Non position sensitive CM4400-0 (1 Electrode) CM4400-1 (2 Electrodes)	



Electrodes $\phi 1.0$

37 (9.5)
4.8
20.7
8.2

We can now supply surface mount termination for a wide range of our products.

Gold plated contacts give good solderability and are designed to provide stability during assembly.

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Tilt (acceleration) Sensor & -Switch KYX 45CF± 45°

Tilt sensor KYX 45CF

1-achsig (2-achsig X, Y)

Zur Erfassung von: / for detecting on:

Neigung, Beschleunigung

Tilt-Angle, Acceleration & G Force Sensing

Der mikroprozessorgesteuerte Neigungsgeber liefert je nach Position eine negative oder positive lineare Ausgangsspannung über $\pm 30^\circ$ mit einer Genauigkeit von $\pm 1^\circ$. Das Ausgangssignal ändert bis $\pm 45^\circ$. Der auf MEM-Technologie basierende schockresistente Sensor ist in ein ABS-Kunststoffgehäuse IP65 vergossen.

The KYX45CF incorporates a microprocessor controlled angle sensing unit which gives a linear voltage output positive or negative in relation to the tilt over the range of $\pm 30^\circ$ angle with an accuracy of $\pm 1^\circ$. The output will, however, continue to change up to the full angle range of $\pm 45^\circ$. The sensor on MEM-technology is housed in a fully sealed rugged ABS case which meets the requirements of protection grade IP65.

Daten / specifications:

Neigungswinkel	$\pm 45^\circ$ (90°)
Tilt angle range	1-achsig / 2-achsig
Linearität	$\pm 1^\circ$
Linearity & resolution	
Ausgang	± 4.5 VDC = 10mV / °
Output voltage	(or RS232, digital)
Speisung	8 V ... 18 VDC / 20mA
Supply voltage	(9V ... 24VDC)
Ansprechzeit	100 mSek
Response time	adjustable
Betriebstemperatur	-40°C ... +70°C
Operating temperature	
Lagertemperatur	-40°C ... +80°C
Storage temperature	
Schockfestigkeit	1'000g
Shockresistance	
Abmessungen	51 x 76 x 23 = H
Dimensions	"Ohren" Lochdistanz 88.6, 2 x Ø 5.5
Gehäusematerial	ABS (UL94-V0)
Case material	Schutzart IP65 (IP66), 100g ca.
Elektr. Anschlüsse (Kabel)	rt/red 8V ... 18V, grn/green 0V
Cable / wiring 1m	bl/blue Signal, gbl/yellow tilt ground

Funktion / operation

Das Inklinometer (Neigungsgeber) liefert eine DC-Spannung linear zur Neigung in Bezug zur Horizontalen.

- Linearer Spannungs-Ausgang über $\pm 45^\circ$.
Linear voltage output over range.
- Das Ausgangssignal ist auch proportional zur Beschleunigung.
The voltage is also proportional to acceleration.
- Programmierbar, Winkel und Schaltepunkte.
Programmable, angle and switches.
- Einfach für spezifische Daten anpassbar.
Easily modified for specific customer applications.

Mit diesem intelligenten mikroprozessorgesteuerten Sensor können kundenspezifische Ausführungen einfach und schnell realisiert werden.



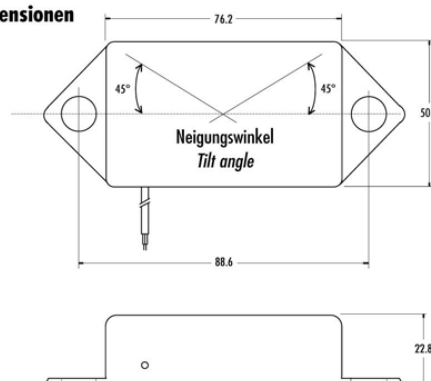
Anwendungen / applications

- Positionierung industrieller & medizinischer Geräte.
Positioning medical & engineering equipment.
- Nivellierung von Konstruktionen in einer bestimmten Lage.
Closed loop control systems enabling equipment to be kept in a constant level state.
- Alarm bei einem bestimmten Winkel oder einer bestimmten Beschleunigung.
Alarm control requiring an output at specific tilt angle or acceleration.

Zusätze / options

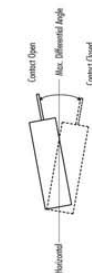
- 2-achsiger Sensor für X, Y-Achse (Ebene).
Dual axis sensor providing a linear voltage output for the X, Y-axis.
- Logisches Signal oder galvanisch getrennte Kontakte mit Zustandsänderung bei einem spezifisch vorgegebenen Winkel.
Logic level or voltage free contacts that changes or operates at a custom set angle.
- MOSFET-Outputs 2A / 40VDC max. (KYX45XX)
2 per direction = total 8 switches, RS232
- Motoransteuerung (KYX45X) 4A max.
Motor drive current
- LED Anzeige bis zu fünf (5) vorgegebene Winkel.
LED indication for up to 5 custom set angles.
- Ausgang für Beschleunigungsmessung abgeglichen.
Output calibrated for acceleration sensing.
- RS 232 Schnittstelle / Interface
- Weitere Ausführungen auf Anfrage / Other models on request

Dimensionen



Tilt Switches - Non Mercury Contacts

SWITCH OPERATION



Tilt switches operate when tilted from the horizontal position. The switch movement required to cause contact change (example off to on) is called the differential angle. It is very important when designing a tilt switch to allow for the differential angle and understand that when in the horizontal position the switch contact may be open or closed.

We can supply these switches in glass, metal or sealed plastic housings.

Contact Form / Style		See operation details	
Switching Voltage	Max. Vdc	60Vdc/40	
Switching Current	Max. A	0.25	
Switching Capacity	Max. VA	3	
Differential Angle	Max. Deg.	15	
Contact Resistance	Max. Ω	30	
Operating Temperature	Deg. °C	-37° to +100°	
Storage Temperature	Deg. °C	-40° to +125°	
Core Material		Steel in plated	
Mounting Clips		CW1300-0 (1 electrode)	
Features		CW1300-1 (2 electrodes)	



CW1300-0
CW1300-1

Contact Form / Style		See operation details	
Switching Voltage	Max. Vdc RMS	60Vdc/40	
Switching Current	Max. A	0.10	
Switching Capacity	Max. VA	3	
Differential Angle	Max. Deg.	15	
Contact Resistance	Max. Ω	100	
Operating Temperature	Deg. °C	-37° to +100°	
Storage Temperature	Deg. °C	-40° to +125°	
Core Material		Steel in plated	
Mounting Clips		CW1600-0 (1 electrode)	
Features		CW1600-3 (2 electrodes)	



CW1600-0
CW1600-3

Contact Form / Style		Changover	
Switching Voltage	Max. Vdc	60	
Switching Current	Max. A	0.1	
Switching Capacity	Max. VA	0.3	
Differential Angle	Max. Deg.		
Contact Resistance	Max. Ω	100	
Operating Temperature	Deg. °C	-37° to +100°	
Storage Temperature	Deg. °C	-40° to +125°	
Core Material		Steel in plated	
Mounting Clips		PCB mounting	
Features		3 electrodes	



CW1620-3

Contact Form / Style		See operation details	
Switching Voltage	Max. Vdc	24	
Switching Current	Max. A	1A at 6-24Vdc	
Switching Capacity	Max. VA	25	
Differential Angle	Max. Deg.	15	
Contact Resistance	Max. Ω	3	
Operating Temperature	Deg. °C	-37° to +100°	
Storage Temperature	Deg. °C	-40° to +125°	
Core Material		Steel in plated	
Mounting Clips			
Features		Automotive Lamp Switch	



AG3010-0
AG3011-0

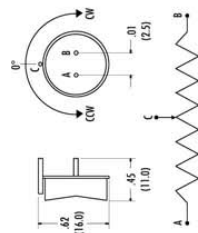
Neigungssensor/Tilt-Sensor potentiometrisch

metallgekapstelt/metal case



VRS 67

(3 electrodes)
Clockwise rotation (CW) increases resistance between A and C



SPECIFICATIONS

Temperature Range -38°C to +75°C
Maximum Working Voltage 200 V
Power Rating 0.1W at 40°C
Working Range -70° to +70° (Total 140° total)
Typical Linearity 3% from -70° to +70°
Contact Type Mercury

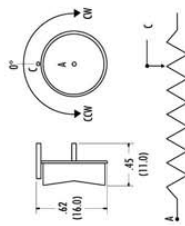
VRS57 - 2 Electrodes - CW rotation increases resistance
VRS57 - 2 Electrodes - CCW rotation increases resistance
VRS67 - 3 Electrodes - CW rotation increases resistance AC
With the outer electrode at the top position (0°) output resistance is approximately mid-point of the total range.

VRS 57 and VRS 37

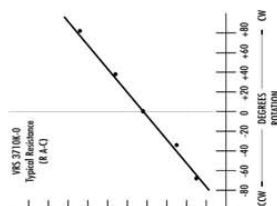
(2 electrodes)

VRS 57 - Counter clockwise rotation (CCW) increases resistance

VRS 37 - Clockwise rotation (CW) increases resistance



Resistance	PART No.	Resistance	PART No.
250	VRS -- 300-0	40K	VRS -- 500K-0
800	VRS -- 01K-0	80K	VRS -- 100K-0
1.6K	VRS -- 02K-0	160K	VRS -- 200K-0
4K	VRS -- 05K-0	400K	VRS -- 500K-0
8K	VRS -- 10K-0	800K	VRS -- 01M-0
17K	VRS -- 20K-0	1.6 MEG	VRS -- 02M-0



PD 3052

Epoxy sealed housing for mounting on a horizontal pcb



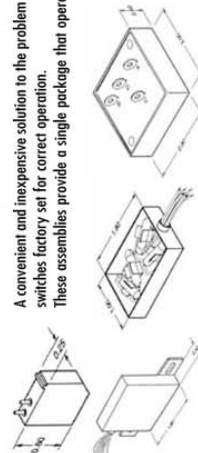
Designed for customers having a need for multiple switch operations as their equipment performs its functions.

Custom Assemblies

A convenient and inexpensive solution to the problem of adjusting several tilt switches is to use an assembly having the switches factory set for correct operation.

These assemblies provide a single package that operates at a cost below that of buying switches and doing the assembly "in house." The epoxy sealed housing provides excellent protection against damage by dropping or mishandling during installation.

To obtain a quotation, contact our sales department and furnish a sketch with your package size and operating specifications.

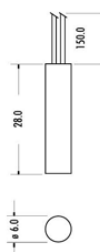


Tilt Switches - Non Mercury Contacts



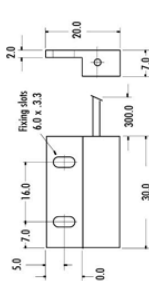
CW60S/15

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	60Vdc/dc
Switching Capacity	Max. A 0.1
Differential Angle	Max. VA 3
Contact Resistance	Max. C2 15
Operating Temperature	Max. C2 -20° +85°
Storage Temperature	Deg. °C -20° +105°
Cable/Termination	Polypropylene
Features	2 x 0.22 PTC
Low cost compact size	



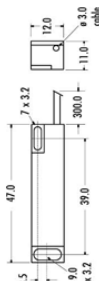
TSW30/60

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	60Vdc
Switching Capacity	Max. A 0.25
Differential Angle	Max. VA 3
Contact Resistance	Max. C2 16
Operating Temperature	Max. C2 -20° +85°
Storage Temperature	Deg. °C -20° +105°
Cable/Termination	Polypropylene
Features	2 x 0.14 PTC insulated
Low cost easy fitting	



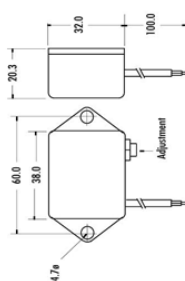
S1039CW

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	60Vdc/dc
Switching Capacity	Max. A 0.25
Differential Angle	Max. VA 3
Contact Resistance	Max. C2 15
Operating Temperature	Max. C2 -20° +70°
Storage Temperature	Deg. °C -25° +70°
Cable/Termination	ABS
Features	2 x 0.14 PTC insulated
Easy fitting	



CW60A/30

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	60
Switching Capacity	Max. A 0.25
Differential Angle	Max. VA 5
Contact Resistance	Max. C2 10
Operating Temperature	Max. C2 -20° +70°
Storage Temperature	Deg. °C -25° +70°
Cable/Termination	ABS
Features	3 x 0.14 PTC insulated
With adjustment to minimise contact bounce	



This sealed tilt sensor has a differential angle of 15° Degrees. The output signal are logic levels with a degree of de-bouncing applied. The amount of de-bounce is adjustable via a potentiometer. The output signal can be used to drive a transistor if required.

Tilt Switches - Glass - Mercury Contacts

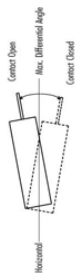
SWITCHING VOLTAGE

Unless specified switches can be used on AC and DC loads. For DC voltages reduces AC rating to 70 %.

CONTACT FORM / STYLE

When in horizontal position switch contact can be either open or closed. We have an extensive range of glass switches for custom applications. Available in encapsulated plastic housings for easy mounting. These switches contain toxic material.

External leads '50' are solder tinned.



Tilt switches operate when tilted from the horizontal position. The switch movement required to cause contact change (example left to right) is called the differential angle. In any particular design, a tilt switch is designed to allow the differential angle and understand that when in the horizontal position the switch contact may be open or closed.



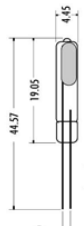
CA20-S0

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	Max. Vac 240
Switching Capacity	Max. A 0.05
Differential Angle	Max. VA 12
Contact Resistance	Max. C2 10
Operating Temperature	Max. C2 -37° +125°
Storage Temperature	Deg. °C -41° +150°
Mounting Clips	1A
Features	Miniature switch



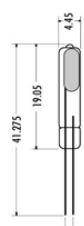
CA22-I50

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	Max. Vac 240
Switching Capacity	Max. A 0.05
Differential Angle	Max. VA 12
Contact Resistance	Max. C2 1
Operating Temperature	Max. C2 -37° +125°
Storage Temperature	Deg. °C -41° +150°
Mounting Clips	1A
Features	Precision 1 Deg. °



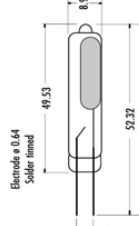
CA22-S0

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	Max. Vac 240
Switching Capacity	Max. A 0.05
Differential Angle	Max. VA 12
Contact Resistance	Max. C2 5
Operating Temperature	Max. C2 -37° +125°
Storage Temperature	Deg. °C -41° +150°
Mounting Clips	1A
Features	Standard

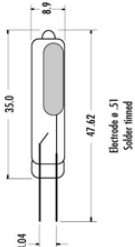


CH02-S0

Contact Form / Style	
Switching Voltage	See switch operation
Switching Current	Max. Vac 240
Switching Capacity	Max. A 0.10
Differential Angle	Max. VA 12
Contact Resistance	Max. C2 0.5
Operating Temperature	Max. C2 -37° +125°
Storage Temperature	Deg. °C -41° +150°
Mounting Clips	381
Features	High Precision 0.5 Deg. °

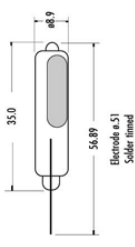


Tilt Switches - Glass - Mercury Contacts



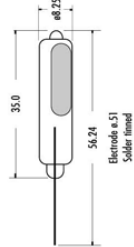
CH03-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.10
Switching Capacity	Max. VA 12
Differential Angle	Max. Deg° 1.4
Contact Resistance	Max. mΩ 100
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -41° +150°
Mounting Clips	3BH
Features	Low cost thermostat switch



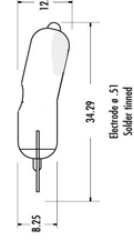
CB11-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.5
Switching Capacity	Max. VA 120
Differential Angle	Max. Deg° 5
Contact Resistance	Max. mΩ 30
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	3BH
Features	Wetted contact



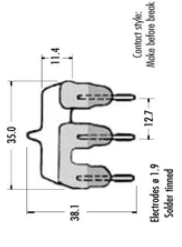
CB17-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 2.0
Switching Capacity	Max. VA 480
Differential Angle	Max. Deg° 10
Contact Resistance	Max. mΩ 50
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	3BH
Features	Standard



CK12-S0

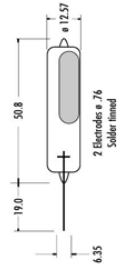
Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.0
Switching Capacity	Max. VA 240
Differential Angle	Max. Deg° 30
Contact Resistance	Max. mΩ 50
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	3BH
Features	Pump application



CF52-S0

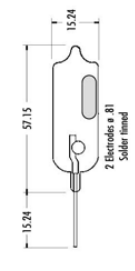
Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 10.0
Switching Capacity	Max. VA 2000
Differential Angle	Max. Deg° 12 + 3
Contact Resistance	Max. mΩ 50
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	Heavy Duty
Features	Heavy Duty

Tilt Switches - Glass - Mercury Contacts



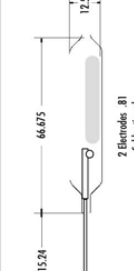
CL34-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 2
Switching Capacity	Max. VA -
Differential Angle	Max. Deg° 10
Contact Resistance	Max. mΩ 1
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	6L
Features	See switch operation



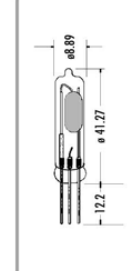
CL64-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 5.0
Switching Capacity	Max. VA 120
Differential Angle	Max. Deg° 5
Contact Resistance	Max. mΩ 5
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	9L
Features	See switch operation



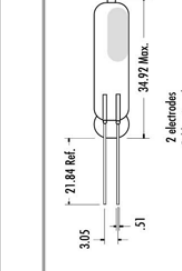
CL62-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 5.0
Switching Capacity	Max. VA 120
Differential Angle	Max. Deg° 3.0
Contact Resistance	Max. mΩ 3.0
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	9L
Features	See switch operation



CH04-S0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.1
Switching Capacity	Max. VA 24
Differential Angle	Max. Deg° 2.0
Contact Resistance	Max. mΩ 0.1
Operating Temperature	Deg. °C -37° +125°
Storage Temperature	Deg. °C -40° +150°
Mounting Clips	3BH
Features	Wetted contact



CB18-S0

Contact Form / Style	
Contact Resistance	100 mΩ Max.
Contact Rating (Resistive Load)	2.0 A at 240 VAC
Differential Angle	10° Deg. Max.
Operating Temperature	-37° Deg C +125° Deg C
Features	See switch operation

Tilt Switches - Metal - Mercury Contacts



CM1000

Electrode ± 1.0

9.7

20.8

$\phi 8.1$

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.75 at 240 Vac 1.0 at 120 Vac
Switching Capacity	Max. VA 120
Differential Angle	Max. Deg 10
Contact Resistance	Max. m Ω 3
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	3BH
Features	1 electrode Compact 1 Amp



CM2000

Electrode ± 1.0

28.0

16.8

$\phi 8.1$

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.5 at 240 Vac 2.0 at 120 Vac
Switching Capacity	Max. VA 240
Differential Angle	Max. Deg 10
Contact Resistance	Max. Ω 3
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	3BH
Features	1 electrode High Power



CM2250

Electrode ± 1.0

27.94

17.02

$\phi 8.18$

$\phi 9.29$

7.36

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.5 at 240 Vac 2.0 at 120 Vac
Switching Capacity	Max. VA 240
Differential Angle	Max. Deg 25
Contact Resistance	Max. Ω 3
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	3BH
Features	1 electrode High Power



CM2650

Electrode ± 1.0

27.68

16.76

$\phi 8.18$

$\phi 9.29$

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.5 at 240Vac 2.0 at 120Vac
Switching Capacity	Max. VA 240
Differential Angle	Max. Deg 65
Contact Resistance	Max. Ω 3
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	3BH
Features	1 electrode High Power



CM1000-0

Electrode ± 2.4

38.0

4.92

$\phi 11.0$

6.35

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 5.0 at 240Vac 10 at 120Vac
Switching Capacity	Max. VA 1200
Differential Angle	Max. Deg 10
Contact Resistance	Max. Ω 3.0
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	
Features	1 electrode High Power

Tilt Switches - Metal - Mercury Contacts



CM1360-0

Pin 0.5 ϕ

5.1

1.0

22.0

$\phi 4.9\phi$

Contact Form / Style	
Switching Voltage	Max. Vac RMS 120
Switching Current	Max. A 0.25 at 120 Vac 0.25 at 24 Vac
Switching Capacity	Max. VA 30
Differential Angle	Max. Deg 30
Contact Resistance	Max. m Ω 10
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	1A
Features	2 electrode Short Body



CM1600-0

$\phi 4.27$

5.1

3.17

8.71

$\phi 3.43$

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.15
Switching Capacity	Max. VA 5
Differential Angle	Max. Deg 2
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	1A
Features	1 electrode Miniature



CM1800-1

Pin 0.5 ϕ

7.1

4.6 ϕ

6.3

Contact Form / Style	
Switching Voltage	Max. Vac RMS 120
Switching Current	Max. A 0.1
Switching Capacity	Max. VA 5
Differential Angle	Max. Deg 2
Contact Resistance	Max. m Ω 5
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	1A
Features	2 electrode Movement Sensitive



CM2000-0

38.1

3.96

$\phi 15.875$

6.35

31.49

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 10 at 240Vac
Switching Capacity	Max. VA 2400
Differential Angle	Max. Deg 10
Contact Resistance	Max. Ω 3
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	
Features	1 electrode High Power



CM2050-0

44.19

3.96

$\phi 15.875$

6.35

31.49

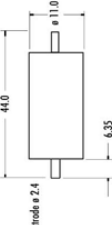
Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 10 at 240Vac
Switching Capacity	Max. VA 2400
Differential Angle	Max. Deg 10
Contact Resistance	Max. Ω 3.0
Operating Temperature	Deg. °C -37° +100°
Storage Temperature	Deg. °C -40° +125°
Case Material	Steel in plated
Mounting Clips	
Features	High power Make before break

Tilt Switches - Metal - Mercury Contacts



CM1030-0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 5 at 240Vac
Changeover/SPDT	
Switching Capacity	1200
Differential Angle	Max. VA 10
Contact Resistance	Max. Ω 3.0
Operating Temperature	-37° +100°
Storage Temperature	-40° +125°
Case Material	Steel tin plated
Mounting Clips	9L
Features	2 electrodes. High power Break before Make

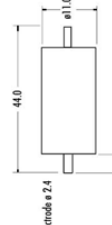


Electrode $\varnothing$ 2.4
44.0
6.35



CM1050-0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 5 at 240Vac
Changeover/SPDT	
Switching Capacity	1200
Differential Angle	Max. VA 10
Contact Resistance	Max. Ω 3.0
Operating Temperature	-37° +100°
Storage Temperature	-40° +125°
Case Material	Steel tin plated
Mounting Clips	9L
Features	2 electrodes. High power Break before Make

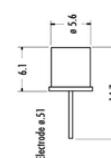


Electrode $\varnothing$ 2.4
44.0
6.35



CM1230-0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.3 at 240Vac
See switch operation	
Switching Capacity	Max. VA 30
Differential Angle	Max. VA 14
Contact Resistance	Max. Ω 3.0
Operating Temperature	-37° +100°
Storage Temperature	-40° +125°
Case Material	Steel tin plated
Mounting Clips	1A
Features	1 electrode. Short body

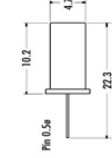


Electrode $\varnothing$ 5.1
6.1
14.7



CM1300-0

Contact Form / Style	
Switching Voltage	Max. Vac RMS 240
Switching Current	Max. A 0.3 at 240 Vac
See switch operation	
Switching Capacity	Max. VA 50
Differential Angle	Max. VA 10
Contact Resistance	Max. m Ω 3
Operating Temperature	-37° +100°
Storage Temperature	-40° +125°
Case Material	Steel tin plated
Mounting Clips	1A
Features	1 electrode. General Purpose

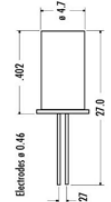


Pin $\varnothing$ 5.4
10.2
22.3



CM1320-0

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.2 at 240Vac
See switch operation	
Switching Capacity	Max. VA 30
Differential Angle	Max. VA 10
Contact Resistance	Max. Ω 1.0
Operating Temperature	-37° +100°
Storage Temperature	-40° +125°
Case Material	Steel tin plated
Mounting Clips	1A
Features	2 electrodes. General Purpose



Electrodes $\varnothing$ 0.46
1.27
27.0
4.7

Tilt Modules - Mercury Contacts



S1039



TSM4/240



TSM40/710

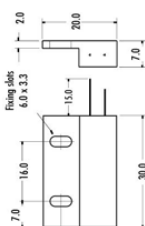
Long lead to top
OFF
5° DIFFERENTIAL ANGLE
ON
2° DIFFERENTIAL ANGLE
HORIZONTAL MOUNTING
5° DIFFERENTIAL ANGLE
VERTICAL MOUNTING
20° DIFFERENTIAL ANGLE
OFF
20° DIFFERENTIAL ANGLE
ON

Tilt switches operate when tilted from the horizontal position. The switch movement required to cause contact change (example off to on) is called the differential angle. It is very important when designing a tilt switch to allow for the differential angle and understand that when in the horizontal position the switch contact may be open or closed.



TSM4/240

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.35
Switching Capacity	Max. VA 10
Differential Angle	Max. Δ 4
Contact Resistance	Max. Ω 0.25
Operating Temperature	-20° +70°
Storage Temperature	-25° +70°
Case Material	Clear Polystyrene
Cable/Termination	Clear housing
Features	See switch operation

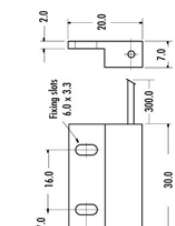


5.0
7.0
16.0
10.0
15.0
2.0
6.0 x 3.3
30.0
Pin 6 x 5



TSM10/240

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.5
Switching Capacity	Max. VA 50
Differential Angle	Max. Δ 10
Contact Resistance	Max. Ω 0.25
Operating Temperature	-20° +85°
Intermittent	-20° +105°
Storage Temperature	-20° +90°
Case Material	Nylon 66
Cable/Termination	2 wire PVC ins. with outer jacket
Features	Robert Construction



5.0
7.0
16.0
10.0
15.0
2.0
6.0 x 3.3
30.0
Pin 6 x 5



TRM4/240

Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.25
Switching Capacity	Max. VA 10
Differential Angle	Max. Δ 4
Contact Resistance	Max. Ω 0.25
Operating Temperature	-20° +70°
Storage Temperature	-25° +70°
Case Material	Blue Polystyrene
Cable/Termination	2 pin Long pin to top
Features	Low cost. Close diff.

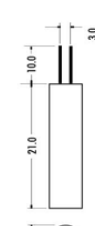


6.0
28.0
15.0
5.0



S1245

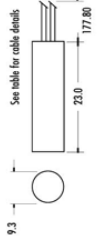
Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 0.5
Switching Capacity	Max. VA 20
Differential Angle	Max. Δ 15
Contact Resistance	Max. Ω 0.2
Operating Temperature	-20° +70°
Storage Temperature	-25° +70°
Case Material	Clear housing
Cable/Termination	2 pins
Features	Clear housing



9.0
21.0
10.0
3.0

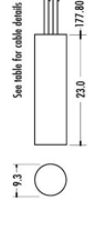
Tilt Modules - Mercury Contacts

CM1320-70



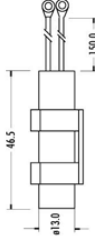
Contact Form / Style	
Switching Voltage	Max. Vac 120
Switching Current	Max. A 0.25 at 120Vac
Switching Capacity	Max. VA 30
Differential Angle	Max. Deg° 10
Contact Resistance	Max. Ω 1.0
Operating Temperature	Deg. °C -20° ~ +70°
Storage Temperature	Deg. °C -25° ~ +70°
Core Material	ABS
Cable/Termination	26 AWG wire insulated
Features	Robust Construction

CM200-70



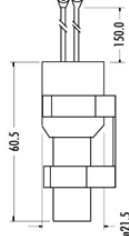
Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.5 at 240Vac
Switching Capacity	Max. VA 100
Differential Angle	Max. Deg° 10
Contact Resistance	Max. Ω 3.0
Operating Temperature	Deg. °C -20° ~ +70°
Storage Temperature	Deg. °C -25° ~ +70°
Core Material	18 AWG wire insulated
Cable/Termination	Robust Construction

S1016



Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.0 at 240Vac
Switching Capacity	Max. VA 2400
Differential Angle	Max. Deg° 15
Contact Resistance	Max. Ω 0.3
Operating Temperature	Deg. °C -20° ~ +70°
Storage Temperature	Deg. °C -25° ~ +70°
Core Material	ABS
Cable/Termination	2x0.5" round silicone rubber insulated
Features	Robust Construction

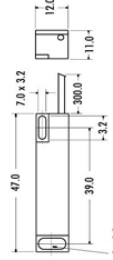
S1017



Contact Form / Style	
Switching Voltage	Max. Vac 240
Switching Current	Max. A 1.5 at 240Vac
Switching Capacity	Max. VA 3600
Differential Angle	Max. Deg° 15
Contact Resistance	Max. Ω 0.3
Operating Temperature	Deg. °C -20° ~ +70°
Storage Temperature	Deg. °C -25° ~ +70°
Core Material	ABS
Cable/Termination	2x17 AWG round silicone rubber insulated, Tag hole 5.1 x 2.0
Features	Rugged Construction / Includes clip

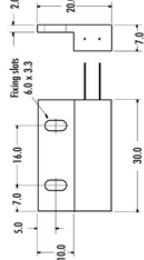
Tilt Modules - Mercury Contacts

S1039



Contact Form / Style	
Switching Voltage	Max. Vac RMS 240
Switching Current	Max. A 1 at 240 Vac
Switching Capacity	Max. VA 1.8 at 120 Vac
Differential Angle	Max. Deg° 10
Contact Resistance	Max. Ω 0.3
Operating Temperature	Deg. °C -20° ~ +70°
Storage Temperature	Deg. °C -25° ~ +70°
Core Material	ABS
Cable/Termination	2 x 0.22 PNC
Features	Robust Construction

TSM40/110



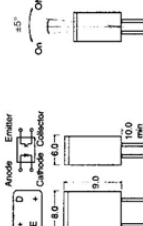
Contact Form / Style	
Switching Voltage	Max. Vac RMS 110
Switching Current	Max. A 0.5
Switching Capacity	Max. VA 10
Differential Angle	Max. Deg° See operation above
Contact Resistance	Max. Ω 0.25
Operating Temperature	Deg. °C -20° ~ +70°
Storage Temperature	Deg. °C -25° ~ +70°
Core Material	Clear Polycarbonate
Cable/Termination	2 electrode 25 Strain long
Features	Clear housing

Optischer Tiltswitch WG 865755
2-achsig ±5° von der Vertikalen

Neigungsschalter
PW-X6063

Forklift Safety
A Level Indicator Module has recently been designed for forklift trucks. The forklift is designed to lift loaded wooden pallets. These pallets can be very heavy and the lifting operation places a substantial load on the forklift. If the forklift is loading on an uneven surface there is the possibility of either damaging the lifting mechanism or of the vehicle tipping over. The module can be wired to operate a visual warning or to trigger a safety shut-off system. Level indicator modules are available in 2, 4 and 10 degree operating angles.

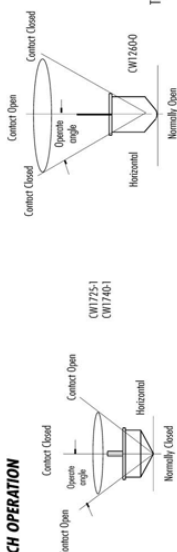
Sicherheit für Hubstapler & Lifter
Mit dem Neigungsüberwachungsmodul können Hubstapler und andere Plattformen überwacht werden. Der eingebaute Schalter hat vier (4) Elektroden und überwacht alle vier (4) vollen Richtungen und somit die vollen 360° Die Kontaktflächen sind:
1A / 120VAC, Schaltwinkel 1° ±0.5°, -40°C ... +100°C (Modul 70°C).
Ein Kontakt ist jeweils in Neigungsrichtung geschlossen. Die Module sind mit 2°, 4° und 10° Schaltwinkel erhältlich.
Dim. 25 x 25 x 19 = H.



WG 865 655 1-achsig vertikal
WG 865 855 1-achsig horizontal
WG 865 955 omnidirektional 45°

Tip-Over Switches - Non Mercury Contacts

SWITCH OPERATION



Tipover switches are designed to switch on/off when tilted from the vertical position.

CW1260-0
CW1260-1

Contact Form / Style	Max. Vcc	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
Normally Open	60	0.25	3	50	60° ± 10°	50 Ω at 5Vdc	-37° + 100°	-40° + 125°	Steel Tin Plated	1 Electrode	Compact

CW1725-0
CW1725-1

Contact Form / Style	Max. Vcc	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
Normally Closed	60	0.25	3	30	25° ± 15°	30 Ω	-37° + 100°	-40° + 125°	Steel Tin Plated	1 or 2 Electrodes	Standard Omni-directional

CW1740-0
CW1740-1

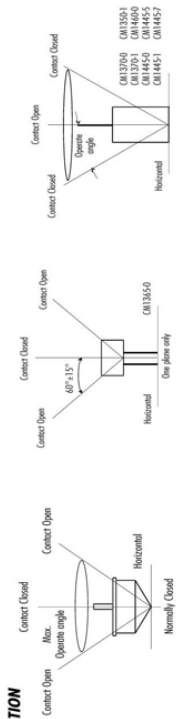
Contact Form / Style	Max. Vcc RMS	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
Normally Closed	60	0.25	3	30	5° ± 15°	30 Ω	-37° + 100°	-40° + 125°	Steel Tin Plated	1 or 2 Electrodes	Standard Omni-directional

S1261

Contact Form / Style	Max. Vcc	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
See operation details	60Vdc	0.25	3	30	30°	30 Ω	-37° + 100°	-40° + 125°	Steel Tin Plated	1A	Compact Tipover Switch

Tip-Over Switches - Metal - Mercury Contacts

SWITCH OPERATION



Tipover switches are designed to switch on/off when tilted from the vertical position.

CM1365-0

Contact Form / Style	Max. Vcc	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
Normally Closed	120	1.0A at 240 Vcc	25A at 120 Vcc	3	60° ± 15° from vertical	3 Ω	-37° + 100°	-40° + 125°	Steel Tin Plated	Electrode	Sub Miniature

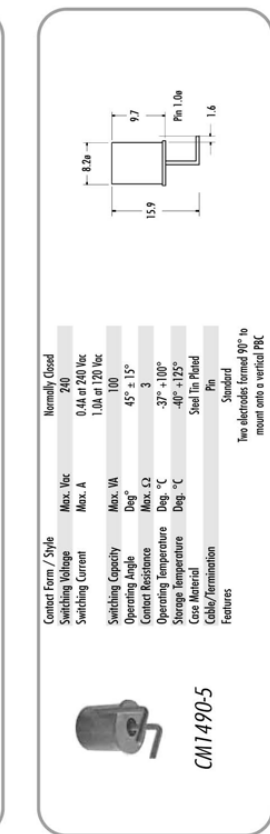
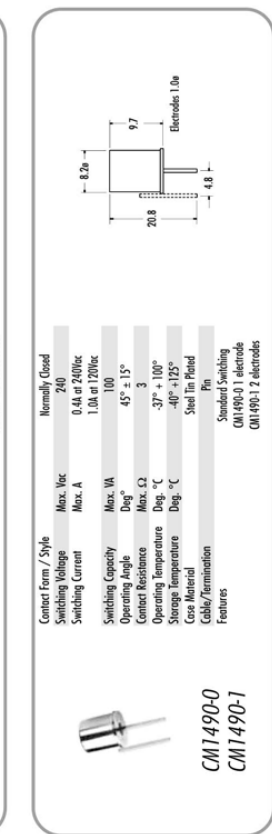
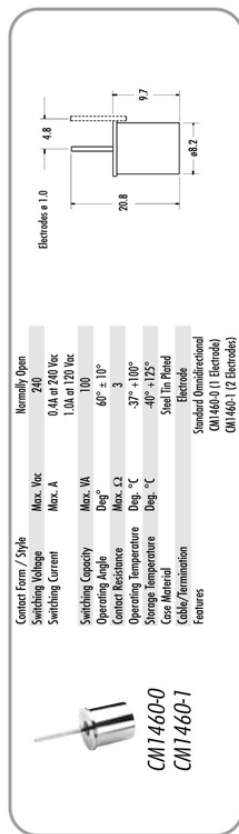
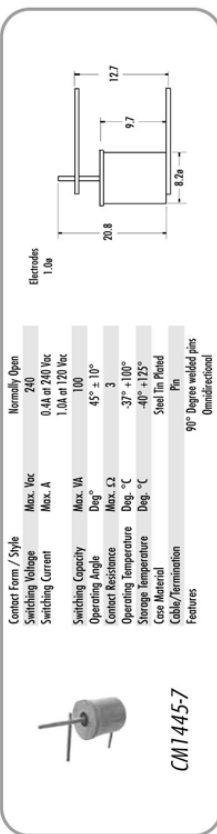
CM1350-1

Contact Form / Style	Max. Vcc	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
Normally Open	240	1.0A at 240 Vcc	5A at 120 Vcc	50	50° ± 10° from vertical	3 Ω	-37° + 100°	-40° + 125°	Steel Tin Plated	Electrode	2 electrodes for pin mounting

CM1370-0
CM1370-1

Contact Form / Style	Max. Vcc	Max. A	Max. VA	Max. I _{sc}	Operating Angle	Operating Resistance	Operating Temperature	Storage Temperature	Case Material	Cable/Termination	Features
Normally Open	240	1.0A at 240 Vcc	25A at 120 Vcc	50	60° ± 10° from vertical	3 Ω	-37° + 100°	-40° + 125°	Steel Tin Plated	Electrode	Bimetallic

Tip-Over Switches - Metal - Mercury Contacts

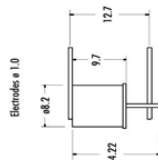


Tip-Over Switches - Metal - Mercury Contacts



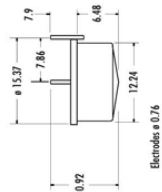
CM1490-7

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 0.8A at 240 Vac 1.0A at 120 Vac
Switching Capacity	Max. VA 100
Operating Angle	Max. VA 45° ± 15°
Contact Resistance	Max. Ω 3
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Tin Plated
Cable/Termination	Electrode
Features	Standard 90° Deg. 2 Electrodes



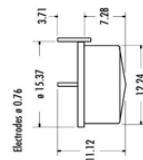
CM1702-1

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 0.8A at 240 Vac 1.5A at 120 Vac
Switching Capacity	Max. VA 200
Operating Angle	Max. VA 2° ± 5° Remote angle 1.5" from vertical
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Tin Plated
Cable/Termination	Electrode
Features	2 electrodes



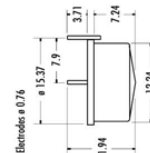
CM1706-1

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 0.8A at 240 Vac 2.5A at 60 Vac
Switching Capacity	Max. VA 200
Operating Angle	Max. VA 6° ± 2°
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Tin Plated
Cable/Termination	Electrode
Features	2 electrodes



CM1715-1

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 0.8A at 240 Vac 1.5A at 120 Vac
Switching Capacity	Max. VA 200
Operating Angle	Max. VA 15° ± 3°
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Tin Plated
Cable/Termination	Electrode
Features	2 electrodes

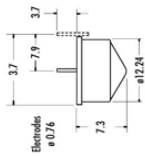


Tip-Over Switches - Metal - Mercury Contacts



CM1725-0
CM1725-1

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 0.8A at 240 Vac 1.5A at 120 Vac
Switching Capacity	Max. VA 100
Operating Angle	Max. VA 25° ± 10°
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Tin Plated
Cable/Termination	Electrode
Features	CM1725-0 (1 Electrode) CM1725-1 (2 Electrodes)



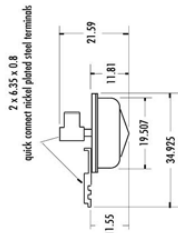
CM1500-0

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 7.0A at 240 Vac 12.5A at 120 Vac
Switching Capacity	Max. VA 1500
Operating Angle	Max. VA 35° ± 10°
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Nickel Plated
Cable/Termination	Electrode
Features	Heavy Duty Switching Safety switch for portable devices



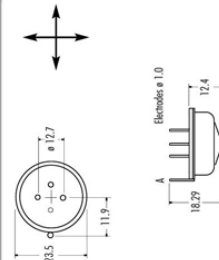
CM1535-5

Contact Form / Style	
Switching Voltage	240
Switching Current	Max. Vac 7.0A at 240Vac 12.5A at 120Vac
Switching Capacity	Max. VA 1500
Operating Angle	Max. VA 35° ± 10°
Contact Resistance	Max. Ω 5
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Nickel Plated
Cable/Termination	Electrode
Features	Heavy Duty Switching safety switch for portable devices



CM4150-1

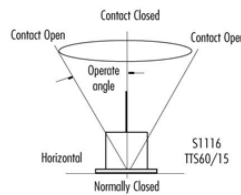
Contact Form / Style	
Switching Voltage	120
Switching Current	Max. Vac 1.0
Switching Capacity	Max. VA 150
Operating Angle	Max. VA 4° ± 1°
Contact Resistance	Max. Ω 3
Operating Temperature	Deg. °C -37° + 100°
Storage Temperature	Deg. °C -40° + 125°
Case Material	Steel Tin Plated
Cable/Termination	Electrode
Features	Joystick Control 4 contacts to sense 4 different planes



Also available with the following operating angles:
CM4151-0 = 1°, CM4154-0 = 2°, CM4153-0 = 16°

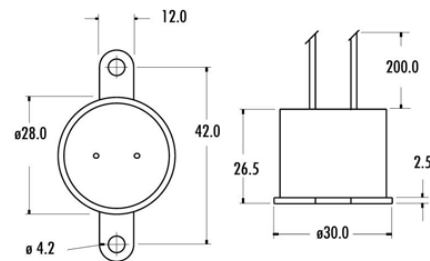
Tip-Over Modules - Mercury Contacts

SWITCH OPERATION



S1116

Contact Form / Style	Normally Closed	
Switching Voltage	Max. Vac RMS	240
Switching Current	Max. A	12.5A at 120 Vac
Switching Capacity	Max. VA	1500W
Operating Angle	Deg°	35° ± 10°
Contact Resistance	Max. Ω	5
Operating Temperature	Deg. °C	-20° +105°
Storage Temperature	Deg. °C	-25° +115°
Case Material	Polypropylene	
Cable/Termination	2 x 17 AWG	
Features	silicone rubber insulated Heavy Duty Switching	

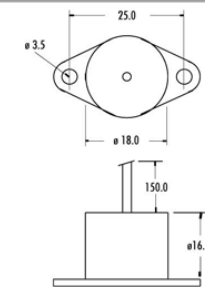


Tip-Over Modules - Non Mercury Contact



TTS60/15

Contact Form / Style	Normally Closed	
Switching Voltage	Max. Vac RMS	60
Switching Current	Max. A	0.25
Switching Capacity	Max. VA	3
Operating Angle	Deg°	40° ± 15°
Contact Resistance	Max. Ω	6
Operating Temperature	Deg. °C	-20° +85°
Storage Temperature	Deg. °C	-25° +105°
Case Material	Polypropylene	
Cable/Termination	2 x 0.14" PVC insulated	
Features	Compact. Easy Fitting	

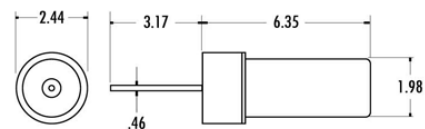


Tilt Switches - Non Mercury Contacts



AU2100-0

Contact Form / Style	See Switch Operation	
Switching Voltage	Max. Vac	50
Switching Current	Max. A	0.15
Switching Capacity	Max. VA	2.0
Differential Angle	Max. Deg°	15
Contact Resistance	Max. Ω	30
Operating Temperature	Deg. °C	-37 +100
Storage Temperature	Deg. °C	-40 +125
Case Material	Steel Gold Plated	
Features	Hermetically sealed and inert gas filled	

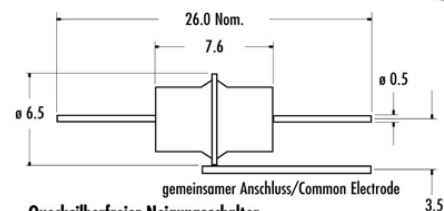


Mikro-Miniatur Neigungsschalter
hermetisch dicht mit goldplattierten
Kontakten 0.15A / 50V, 2VA max.



S1234

Contact Form / Style	Changeover	
Switching Voltage	Max. Vac	60
Switching Current	Max. A	0.2
Switching Capacity	Max. VA	3.0
Switching Angle	Max. Deg°	35
Contact Resistance	Max. Ω	10
Operating Temperature	Deg. °C	-37 +100
Storage Temperature	Deg. °C	-40 +125
Case Material	Steel Gold Plated	
Features	Hermetically sealed and inert gas filled	



Quecksilberfreier Neigungsschalter
mit goldplattiertem Umschaltkontakt
(Form 1C) 60V / 0.2A, 3VA max.

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