

OPERATING MANUEL

Model : **E-TILT**
TILT SWITCH

enSim
sensors

Information in this manual is reviewed and completely reliable. Responsibility is not assumed due to any typing error. Products in this manual are available only for information purpose and they may be changed without notice.

Models :

E-TILT 02 - Mini model

E-TILT 05 - Standard model

E-TILT 06 - Hard Condition model



Important Notes:

Used Symbols :



: Caution



: Note



: Disposal










-  Please read this manual carefully before installation of the **tilt switch**. User is responsible for accidents and losses arising from failure to comply with the warnings in this manual.
-  In the event that **tilt switch** is broken, take measures in order to prevent accidents and losses which can occur in its system.
-  There is not any fuse and circuit breaker on the instrument; they should have been added to the system by the user.
-  This manual should be stored in an easily accessible place for subsequent use.
-  The manufacturer's liability cannot exceed the purchase price of the device according to the law.
-  Do not make any modification on the instrument and do not try to repair it. Reparation should be made by authorized service staff.
-  Do not operate the system before making assembly in compliance with the assembly chart related to the instrument.
-  Products which do not contain label and serial number are considered to be excluded from the warranty scope.
-  The instrument's useful life, determined and announced by the ministry, is 10 years.

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1. General Information :

1.1. Material Acceptance

Check that there is no damage on the packages during the transportation immediately after the material acceptance. If packages are damaged, open the packages immediately and check whether products are affected or not, if there is any damage, send your complaint report to the transporter company and its photocopy to the address of our company.

1.2. Information about Areas of Use

E-TILT tilt sensor is produced mercury free switch which offers higher stability and sensitivity. Interior body is filled with epoxy resin which protects electronic part from environmental effects. E-TILT works in vertical axis. A time relay can be implemented if delay is required.

Areas of Application :

Conveyor belts, silos, telescopic arms for ship loading ...

Ambient Conditions: Relative Humidity: 5-95 %RH **Ambient temperature:** 70 °C (It is not used under -5 °C)

1.3. Working Principle

Whenever it leans over left or right in a certain angle, switch will open or close. Tilt sensors are mainly used for conveyor monitoring or silo level controlling.

1.4. Technical Specifications :

Tilt Angle (Vertically left or right)	Max. Contact Current / Voltage
15° ± 3° (Std.)	1,5 A / 120 VAC NC 0.6 A / 240 VAC
25° ± 10°	Opt. 1,5 A / 120 VAC 0.6 A / 240 VAC
35° ± 10°	Opt. 12,5A / 120 VAC 7A / 240 VAC
45° ± 10°	Opt. 1 A / 120 VAC 0.4 A / 240 VAC
Maks. Switch Its capacity	100 - 200 VA
Pipe Material	304 Stainless Steel Opt. 316 Stainless Steel , PVC
Working Temperature	(-) 40 / (+) 100 °C
Cable Length	2 m. (Std) Can be added on request.
Cable Material	PVC (max. 60 °C) Opt: Silicone, Rubber
Protection Class	IP 67

Application Example :



Note: Hanging chains are not included.

E-GSM Alarm Device - Double Entry

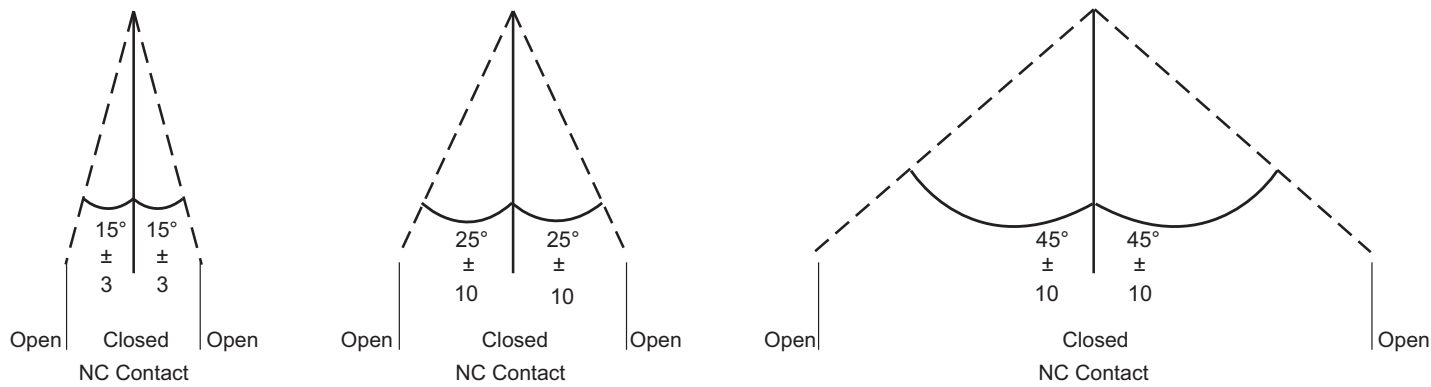
Battery or and Supply

2 Pcs. lithium battery, 12V adapter included

Excluded phone card

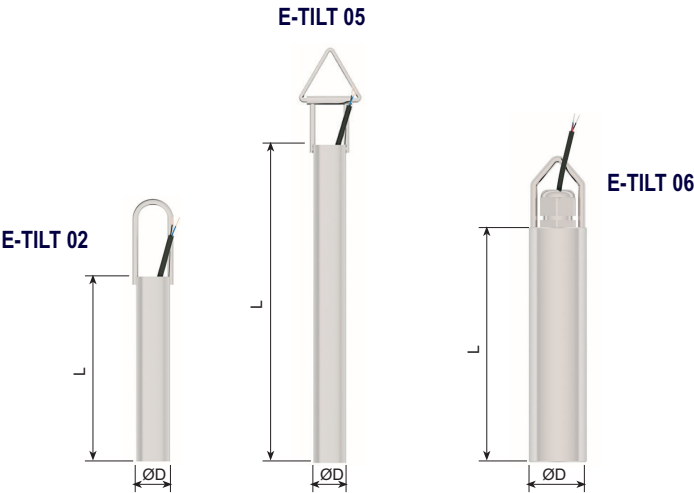


Working Angles :



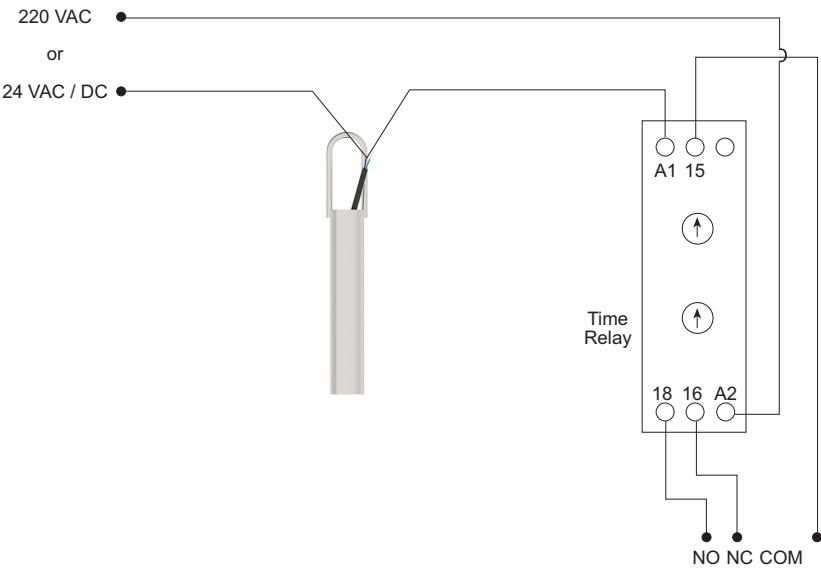
Technical Picture:

MODEL	MEASUREMENT	
	L (mm)	D (mm)
E-TILT 02	100	21
E-TILT 05	200	21
E-TILT 06	175	40

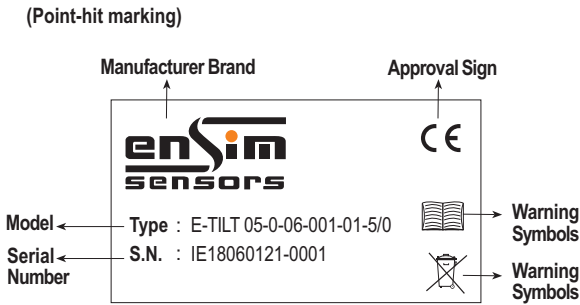


1.5. Electrical Installation

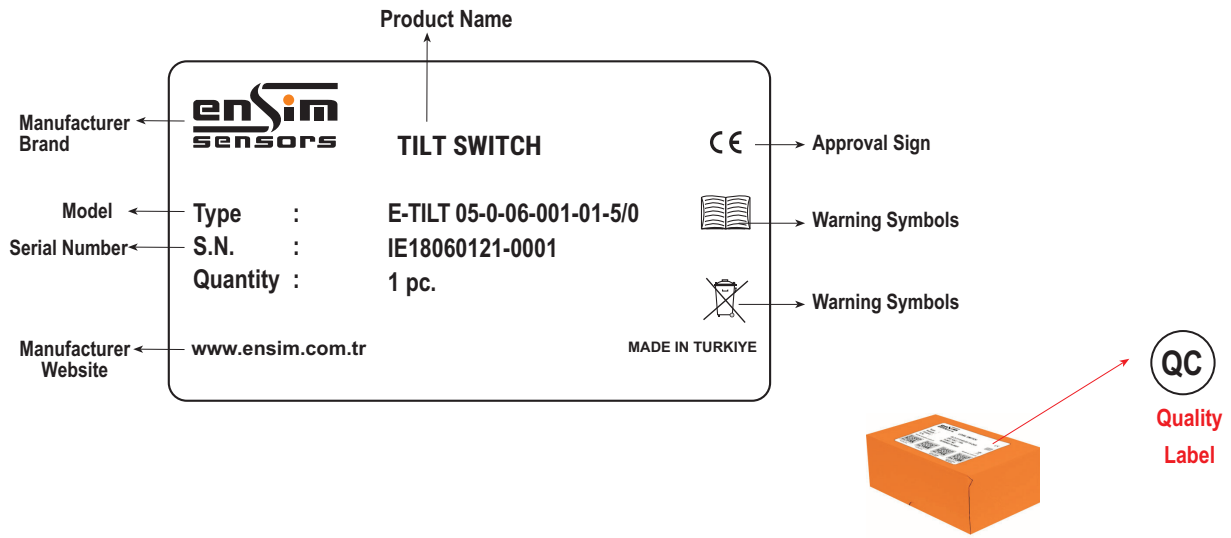
Make the electrical connection of the instrument according to details on its label, table and cable figures in this manual.



1.6. Label Information :



Box
Label



1.7. Content of Package

Please check whether you have taken delivery of below listed content completely or not and check its conformity with criterions in your order:

- *E-Tilt Level switch
- *This operating manual

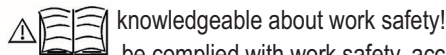
1.8. Target Group

This operating manual has been prepared for qualified technical personnel.

1.9. Security Notes

Following notes should be taken into consideration in order to avoid dangers which can occur on the operator and around the ambient:

Installation, operation and maintenance of this instrument should be made only by people who have read the operating manual and



knowledgeable about work safety!

be complied with work safety, accident prevention regulations and national installation standards.

Product should be used only within the scope of stated specifications!

You can assemble the instrument only when pressure is not available!

2. Installation :

2.1. General Notes

Installation of the instrument should be made only by authorized personnel.

Do not apply force to the instrument during the installation!

Do not use the level indicator with a greater pressure than recommended pressure.

Do not forget that instrument is precise, carry it carefully and prevent to be damaged.

It should be guaranteed that there are not any magnetic particles.

2.2. General Installation Stages

*Remove level indicator from the box carefully

*Check whether gasket is appropriate for fluid or not. If is not appropriate, contact with the producer.

*Then, apply below mentioned explanations according to structure of the design.

2.3. Special Notes

*Please ensure that there is no mechanical stress on the shaft following installation.

Such case will cause slipping in the characteristic curve.

*Level switch should be mounted vertical on tank's plate

*Allocate valve certainly in the process connection while instrument is used.

*Allocate blowdown valve under bottom flange for blowdown.

*If instrument is mounted outside and if there is any danger of lightning or excessive pressure, take preventive measures by taking necessary measures.

2.4. Installation For Mechanical Connections

*Use appropriate O-Ring or gasket for tightness.

*Ensure that its surface is clean and smooth.

*Assemble the instrument manually.

2.5. Order Form :

Order Form: **Please consider sample models when coding!..**

1 MODEL E-TILT

Mini Type02
Std. Type05
Heavy Type06

2 CERTIFICATE

None..... 0 (EN10204-3-1) Material Certification 1

3 TILT ANGLE (CONTACT CURRENT)

15 ° ± 3 ° (Std) (1,5 A / 120 VAC - 0,6 A / 240 VAC).....05 45 ° ± 10 ° (1,5 A / 120 VAC - 0,6 A / 240 VAC).....10
25 ° ± 10 ° (1,5 A / 120 VAC - 0,6 A / 240 VAC).....06 45 ° ± 10 ° (1 A / 120 VAC - 0,4 A / 240 VAC).....11
35 ° ± 10 ° (12,5 A / 120 VAC - 0,7 A / 240 VAC).....08 Special...../ x

4 BODY MATERIAL

304 Stainless Steel.....001 PVC.....061
316 Stainless Steel.....002 Special...../ x

5 CABLE MATERIAL

PVC Cable (Max. 60 °C).....01 Silicon Cable (Max. 200 °C).....03
PVC Cable (Max. 105 °C).....02 Thick SiliconM1
Special...../ x

6 CABLE LENGHT

2 m. (Std)..... 2 Special...../ x

7 OPTIONAL

None...../ 0 E-GSM device...../ E-GSM
Omron Time Relay (0,1s-1200h/24-240 VAC/DC)...../ R3 Hanging Chain...../ A
Special...../ x

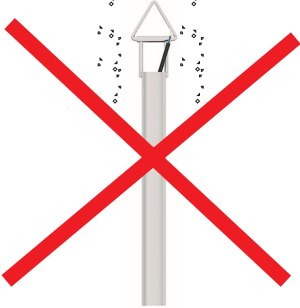
EXAMPLE

E-TILT 05 - 0 - 06 - 0 01 - 01 - 5 / 0

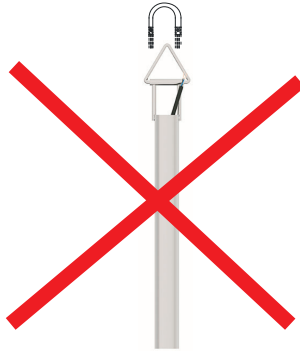
E-TILT 05 , 5 m. With PVC Cable , 15 ° angled , 1,5 A / 120 VAC - 0,6 A / 240 VAC



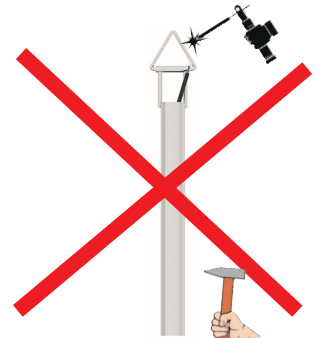
Please pay attention to following matters in order to operate your flow switch properly.



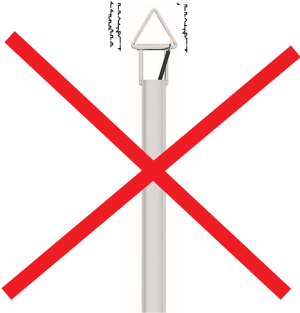
Please do not dip cables potting into liquids, otherwise insulation problem may cause.



Do not fasten switch reversely, otherwise its characteristics might be changed.



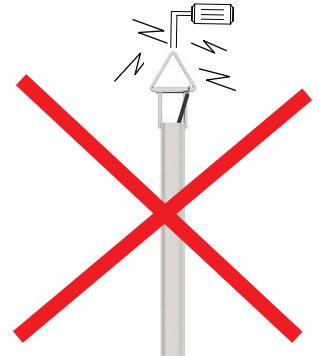
Please do not drop, otherwise the characteristics might be changed.



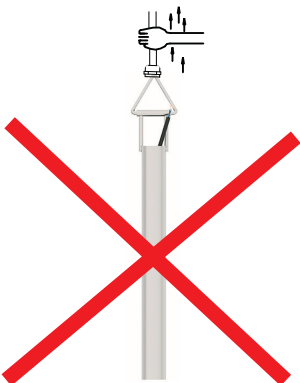
Vibration might be caused instability.



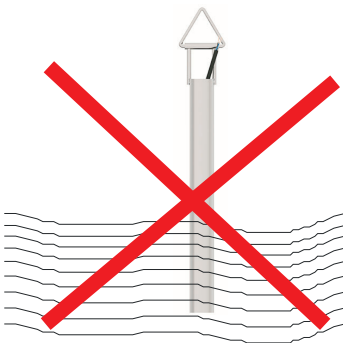
In case vapour splash cable potting points, insulation problem may cause.



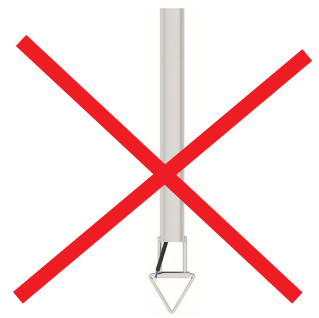
Excess current, to be drawn as a result of direct connection to motor, may burn relay of switch



Do not pull the cable strongly, otherwise the characteristics might be changed.



Please avoid using with liquids which damage materials of parts, otherwise quality can not be maintained accurately.



Do not remove the float from connection part. Because its pin might be damaged.

3. Failure Delection

Breakdown	Probable cause	Failure detection\correction
No relay output / Continous relay output	-Connection angle is different than (vertical) -Applied values are higher than the suggested application current or voltage. -The product cable might be damaged.	-Set the connection angle to vertical position. -Notify the authorized service. -Notify the authorized service.
Unstable Switch	-Falling or being hit from outside -The product is exposed to vibration. -The appropriate angle has not been selected. -The product cable is pulled and the strength is applied	-Notify the authorized service. -It should be prevented from vibration affecting the product or connected to a place where vibration will not occur. -Notify the authorized service. -Notify the authorized service
Broken or dissolved housing	-Being subjected to a big impact in the work area -Being exposed to chemical effects that may damage the body	-The product should be protected, if necessary, it should be replaced. -Check the conditions and contact the manufacturer for the selection of the body from a durable material.

If you find an error, try to eliminate it by using this table or send the instrument to our service address for repair.



The instrument should be repaired only by authorized service!

4. Disassembly of Instrument

Instrument should be disassembled while feeding and pressure is not available!

5. Service

The instrument does not require maintenance. If it is desired, residue accumulated inside should be blown according to kind of fluid and instrument can be cleaned with soft cleaning solutions. Measures should be taken during the disassembly.

6. Recalibration

Calibration is not required during long period useful life of a level switch.

7. Repair – Manufacturer Address

If irreparable breakdowns occur, the instrument should be sent to us for repair purpose. Before this, the instrument should be cleaned carefully and packaged so as not to be broken. Furthermore, you should also add a detailed explanation which describes the breakdown while instrument is sent. If your instrument contacts with harmful substances, decontamination report should be also sent additionally. In the event that instrument does not have any decontamination report or our service department has doubts about instrument, repair process will not start until an acceptable report is sent.



If the instrument contacts with hazardous substances, necessary measures should be taken for decontamination!
Service -Manufacturer Company Name and Address:

LONCA MAK. SAN. TİC. A.Ş.Ferhatpaşa Mahallesi Gazipaşa Caddesi No:104 A 34888 Ataşehir / İSTANBUL - TÜRKİYE

Tel:+90 216 505 05 55 Faks:+90 216 515 45 84 E-Mail: lonca@ensim.com.tr Web: www.ensim.com.tr

8. Disposal

The instrument should be disposed according to 2002/96/EC and 2003/108/EC European Directives (waste electrical and electronic instruments). Waste electrical and electronic equipment should not be mixed with domestic wastes!



If the instrument has contacted with harmful substances, special attention should be paid for its disposal!

9. Terms of Warranty

The instrument has warranty legally for 24 months after delivery date. Warranty demands are not accepted in case of inappropriate operation, damage on the instrument or any modification on the instrument.

10. Terms of Return

In the return of materials, user should send an open list related to damage or problem, malfunction of the material to be returned or its operation in the different modification, with the instrument. If it is required to return the material, used in the dangerous, corrosive or toxic fluid, in this case, used part should be cleaned very carefully. Security of personnel should be ensured. All products to be returned should be sent to our company address, which we have stated.