ELMARK
The Brand of Electricity
www.elmarkholding.eu

(BG) Инструкция за монтаж и експлоатация
(ENG) Instruction for installation and use
(RO) Instrucțiune de instalare și utilizare
(SRB) Uputstvo za ugradnju i upotrebu
(HR) Uputstvo za ugradnju i upotrebu
(BIH) Uputstvo za ugradnju i upotrebu
(HU) Szerelési és kezelési utasítás
(SLO) Navodilo za vgradnjo in uporabo
(GR) Οδηγιεσ για την εγκατασταση και τη χρηση
(MK) Упатство за вградување и употреба
(SK) Návod na montáž a používanie
(PL) Instrukcja instalacji i użytkowania
(P) Instrução para instalação e uso
(IT) Istruzioni per l'installazione e l'uso

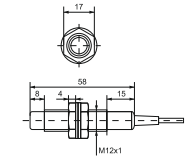
(BG) Капацитивен датчик
(ENG) Capacitive sensors
(RO) Senzori capacitivi
(SRB) Kapacitivni senzor
(HR) Kapacitivni senzor
(BIH) Kapacitivni senzor
(HU) Kapacitív érzékelő
(SLO) Kapacitivni senzor
(GR) Χωρητικοί αισθητήρες
(MK) Капацитивни сензори
(SK) Kapacitný senzor
(PL) Czujniki pojemnościowe
(P) Sensores capacitivos
(IT) Sensori capacitivi

ELMARK
The Brand of Electricity

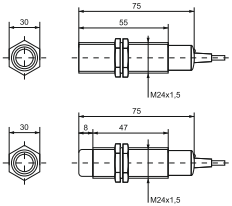
ИНСТРУКЦИЯ ЗА ЕКСПЛОАТАЦИЯ
Capacitive sensors

www.elmarkholding.eu

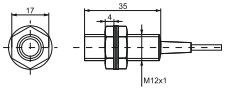
EL-CM18



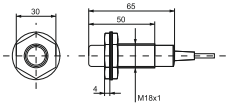
EL-CM24



EL-SM12



EL-XM24



Type	Start distance (mm)	Power supply voltage	Type of transition	Type of contact	Output load
EL-CM12-3004NA	0~4	6~36 VDC	NPN	NO	200 mA
EL-CM12-3004NB	0~4	6~36 VDC	NPN	NC	200 mA
EL-CM12-3004PA	0~4	6~36 VDC	PNP	NO	200 mA
EL-CM12-3004PB	0~4	6~36 VDC	PNP	NC	200 mA
EL-CM18-3008NA	0~8	6~36 VDC	NPN	NO	200 mA
EL-CM18-3008NB	0~8	6~36 VDC	NPN	NC	200 mA
EL-CM18-3008PA	0~8	6~36 VDC	PNP	NO	200 mA
EL-CM18-3008PB	0~8	6~36 VDC	PNP	NC	200 mA
EL-CM18-2008A	0~8	6~36 VDC	SCR	NO	300 mA
EL-CM24-3012NA	8	6~36 VDC	NPN	NO	200 mA
EL-CM24-3012NB	8	6~36 VDC	NPN	NC	200 mA
EL-CM24-3012PA	8	6~36 VDC	PNP	NO	200 mA
EL-CM24-3012PB	8	6~36 VDC	PNP	NC	200 mA
EL-CM24-2012A	8	90~250 VAC	SCR	NO	300 mA
EL-SM12-3110NA	10	6~36 VDC	NPN	NO	200 mA
EL-SM12-3110NB	10	6~36 VDC	NPN	NC	200 mA
EL-SM18-3110PA	10	6~36 VDC	PNP	NO	200 mA
EL-SM18-3110PB	10	6~36 VDC	PNP	NC	200 mA
EL-XM18-305PMI	5	6~36 VDC	inductive	NO	100 mA
EL-XM18-305PMU	5	6~36 VDC	inductive	NC	100 mA
Note: Sensor of Hall					
EL-XM24-308PMI	8	6~36 VDC	inductive	NO	300 mA
EL-XM24-308PMU	8	6~36 VDC	inductive	NC	300 mA

Note: MI - current type; MU - voltage type

BG - В интерес на вашата безопасност, монтирането и настройването да се извършват само от специалист! **EN** - For your safety, installation and tuning are performed only by a specialist! **BiH** - Za vašu sigurnost, ugradnju i tuning vrši samo stručnjak! **GR** - Για την ασφάλειά σας, η εγκατάσταση και η τοποθέτηση γίνονται μόνο από ειδικούς! **D** - Zu Ihrer Sicherheit werden Installation und Wartung nur von einem Fachmann durchgeführt! **RO** - Pentru siguranța dvs., instalarea și reglarea sunt efectuate numai de către un specialist! **SK** - Pre vašu bezpečnosť, inštalácia a ladenie vykonáva iba špecialista! **SLO** - Za vašo varnost, namestitev in nastavitev opravlja samo strokovnjak! **SRB** - За вашу сигурност, инсталација и подешавање изводе само специјалиста! **HU** - Az Ön biztonsága érdekében a telepítést és a hangolást csak szakember végezheti! **HR** - Za vašu sigurnost, instalacije i ugađanje izvodi samo stručna osoba!; **MK** - За ваша безбедност, инсталација и подесување се изведува само од специјалист!; **PL** - Ze względów bezpieczeństwa instalację i strojenie wykonuje tylko specjalista!; **P** - Para sua segurança, a instalação e o ajuste são realizados apenas por um especialista!; **IT** - Per la tua sicurezza, l'installazione e la messa a punto vengono eseguite solo da uno specialista!

■About proximity switch

●Honorable consumers, thanks for selecting and using the sensor of our company. When using the products of our company, please refer to the instruction first in order to avoid unnecessary losses caused by misoperation.Bcause

●the product is improved unceasingly, the sensor of you ger may be different from the drawing in the instruction.

Uses:It is suitable for controlling the limit machine tool. detecting. counting ,velocity measurement,liquid level, signal and automatic line for locating sending signal, etc, It is also widely used in machinery,mine metallurgy,plastics,textile,chemicl industry,light industry,tobacco,electric power,railway and war industry and so on departments

Model explanation of proximity swith.

L M 18 - 30 05 N A □

switoh category	
L	inductance type
C	capacitance type
S	Hall type
A	Safety explosion-proof type
X	mimic Linear type
H	reed type
R	ring type

out ward appearance code	
M □	cylinder type
T □	angular column type and plane installation type

working voltage	
30	6–36 VDC
310	5–24 VDC
320	12–60 VDC
20	90–250 VAC
210	24–250 VAC
220	380VAC
4	12–240VDC 24–240VAC

etection distance	
01	1mm
05	5mm
10	10mm

output form	
N	three-wire DC.NPN output
P	three-wire DC.PNP output
L	two-wire DC output
□	AC two-wire output
W	AC three-wire output
J	Relay contact ouput
NP	NPN+PNP doudle ourput

output state	
A	NO
B	NC
C	NO+NC
MU	Mimic voltage
MI	Mimic current

subsidiarv functions	
T	with aviantion socket
Y	water proof oil proof
I	special requirement
H	high temp resistane

For example: LM18-3005NA

The above indicates inductance type proximity switch. M18 indicates cylinder type whose diameter is 18mm.30indicates DC6-36V 05indicates that the detecting distance is 5mm and N indicates NPN negative logic.Ais NO output.

■Setting operating distance(Sn)

●Please set the operating distance of the switch within80%of standard operating distance to protect the switch from being affected by temperature and voltage.

●When detecting other metals, the switch has different operating distances(Diagram1).

●When the switch is used for measuring operating frequency or used in other high-speed places, please set the operating distance of the switch within 1/2of standard operating distance.At this position, the switch can reach max operating frequency.

●please refer to the instruction manual of capacitive proximity switch for setting its operating distance.

Ratio of inducing different materials

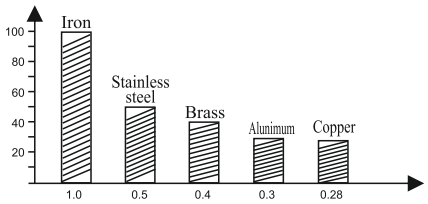
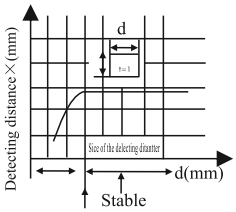


Diagram1

Effect that the size of the detecting object to the detecting distance



Standard detecting objeci Diagram2

■Points for attention when using the switch

●DC power supply must use insulated transformer.Please do not use autotransformer..

●It is strictly forbidden to connect on live line.Wire must be connected strictly according to the color code on the connection diagram.

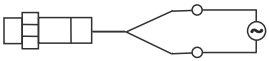
●It there is an electric line of force, and when the power line passes near the switch lead, the metal pipe should be covered on the switch lead and grounded to protect the switch from misoperation and damaging.

Error connection

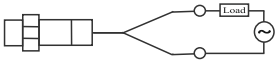
Correct connection

●AC proximity switch generally is not suitable for con ecting inparallel and series We suggest you to use relay in parallel and series.

●AC switch, DC two-line system switch must pass load to connect swith power supply. if directly connect the switch with power supply, the switch will be damaged.



Error connection



Correct connection

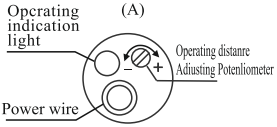
●The length of the leading wire of the proximity switch should be below 200m for fear that voltage drop is too big.

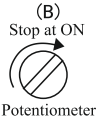
■Instruction for capacitance proximity switch.

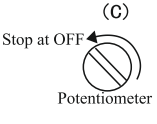
Ihe capacitance proximity switch can be used to check metal, as well as plastics,glass,water, oil and so on subsances.Because the conductivity, water absorption and volume of all kinds of detecting objects are different, the corresponding detectin distances are different, too. The max detecting distance is available to the ground metal.

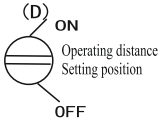
●Different detecting objects and detecting distances

●In order to avoid misoperation, the capacitance proximity switch is not suitable for installing near high freauency electric field, such as near high freauency welder, supersonie generator and so on. .Ten operating distace of the capacitance proximity switch generally can be adjusted to adapt different detecting objects. Therefore, when installing, it should be adjusted. please refer to the following steps for the adjustment method:









A.When the supersonic generator is rotated to the right, the detecting distance will enlarge and when it is rotated to the left,it will lessen.The adjustment revolution is 10circles

B.under without detecting object the potentiometcr should be rotated slowly to the right do not stop until in the positon of ON o f the proximity switch.

C. When colsing to the detecting object， the potentiometer should be rotated to the left;do not stop until in the position of OFF of the proximity switch.

D.Adjust the potentiometer between ONand OFF. At this time,the adjustment of operating distance is end.

■Installation demand

When installing the proximity switch, please install it larger than the diameter in the diagram if there is metal around of when the switch is placed opposite of parallel,so that the reliable operation will not be affected.

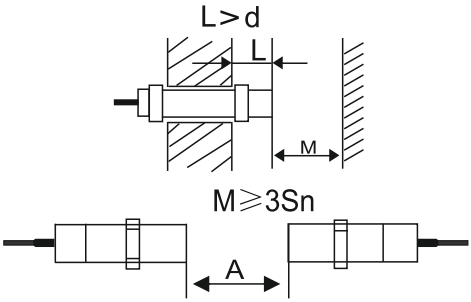
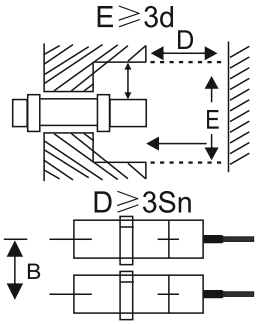


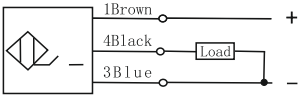
Diagram:Rated operating distance



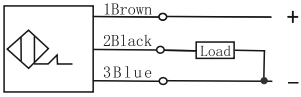
d:Diameter of induction surface

■Digram of connection mode

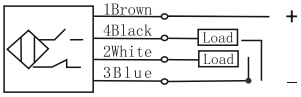
1、PNP NO type



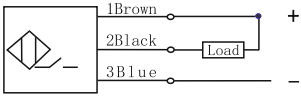
2、PNP NC type



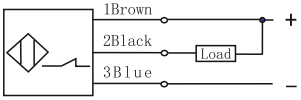
3、PNP NO+NC type



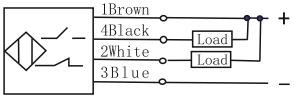
4、NPN NO type



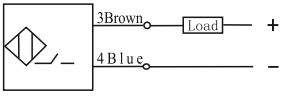
5、NPN NC type



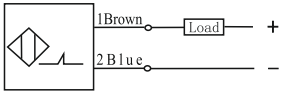
6、NPN NO+NC type



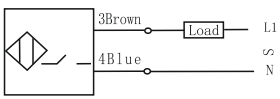
7、DC two-wire NO type



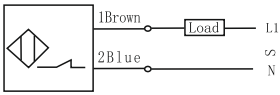
8、DC two-wire NC type



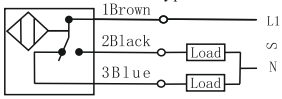
9、AC two-wire NO type



10、DC two-wire NC type



11、AC three-wire type



12、Five-wire relay output type