

Application

The **MOS-E** is a **non-contact** yarn break **opto-electronic sensor**.

MAIN FUNCTION: To control the presence of yarns while linear, to-and-fro or ballooning motion.

(When linear motion, there should have a sufficient vibration of the yarn).

When the yarn breaks or stops, the sensor will indicate a default situation and give the information to the machine or to the operator by the means of a LED. It can activate a yarn cutter or stop the position giving a **15V signal** to an automate.

PRINCIPLE: The **MOS-E** probe will check the tension variations produced by motion of the yarn inside the IR light beam. The **MOS-E** is insensitive to external light interference. Minimum yarn size detected : 0,02mm.

ELECTRICAL PROTECTION: The **MOS-E** is protected against reversed polarity and high level overload on output. It shows a high level of EMC, electromagnetic compatibility : >1 kV.

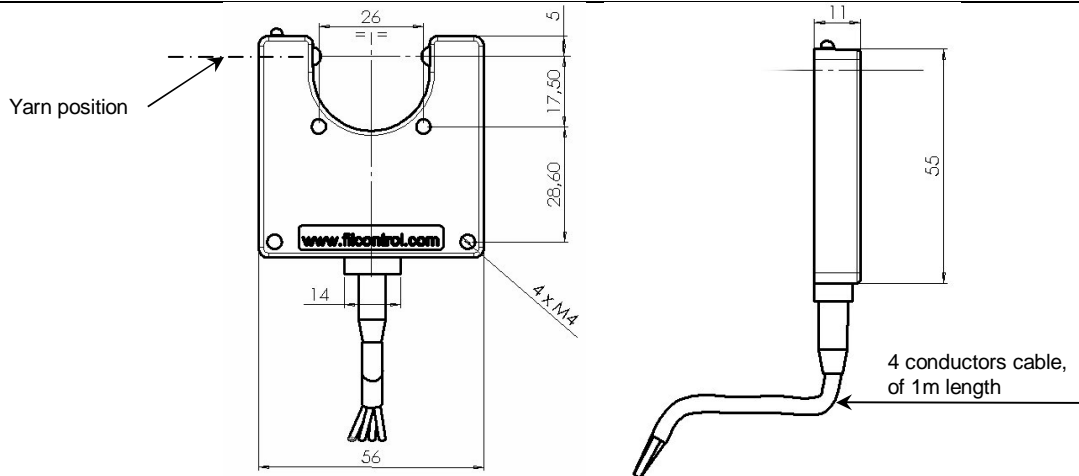


Characteristics:

- Power supply : 20,4 to 28,8 V DC
- 1 permanent or momentary power output, in NPN (low side drive) or PNP (high side drive) version.
- 1 auxiliary low power output, it can send a low or high level information to a PLC or control board.
- Outputs protected against short circuit.
- Visual alarm (red LED)
- Connection through cable with/without any kind of connector on request
- Aluminium shell
- The MOS-E sensitivity is adapted to operator's requirement

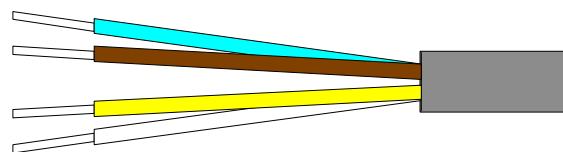
These characteristics are adapted to operator's requirements. (Referenced to the codification board)

Dimensions (mm)



Wiring diagram

- | | |
|-------------------------------|---|
| Blue wire : -- supply | 1 |
| Brown wire : + supply | 2 |
| Yellow wire : Main output | 3 |
| White wire : Auxiliary output | 4 |

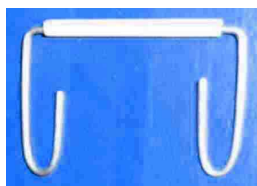


Technical characteristics

Parameters	Conditions	Min	Typ	Max
Power supply voltage (V)		20,4	24	28,8
Sensor consumption (mA)	Own current consumption at 24 V DC and at 25°C. Outputs not connected.	-	12	48
In detection mode → LED light OFF Detection beam blocked → LED light ON			45	
Peak-to-peak ripple voltage at 100 Hz (V)	20,4 < Supply voltage peaks < 28,8 V	-	-	4
Detection delay at thread start-up (s)	During this time outputs are inactive	-	6	-
Response time when yarn stop or break (ms)	4 th number of article codification			
	MOS-E xxx1x	-	25	-
	MOS-E xxx2x	-	50	-
	MOS-E xxx3x	-	100	-
	MOS-E xxx4x	-	200	-
	MOS-E xxx5x	-	500	-
	MOS-E xxx6x MOS-E xxx7x	-	700 1500	- -
Dropout voltage at the main output (V)	Output current < 0,15 A	-	1,6	-
Permanent current driven by main output (A)	Voltage at the output < 28,8 V	0,15	-	-
Current driven by main output during 0.1s (A)	Voltage at the output < 28,8 V	1	-	-
Max. voltage at the main output (V)	Output non-conducting	-	-	40
Output voltage at auxiliary output (V)	Output current	13	13,5	0,8
			High level < 50µA Low level < -50µA	
Output resistance at auxiliary output (KΩ)	Supply voltage = 24 V	-	10	-
Max. voltage at the auxiliary output (V)		-	-	15
Immunity to the perturbations (kV)	Positive and negative Injected/ Inducted Radiated	1	-	-
		4		
Ambient light immunity (m / ft)	Minimum distance to a stroboscopic lamp without false thread detection	0,35 / 1	-	-
Temperature range (°C)	For storage	-25	-	85
	For operation	0	-	50
Relative humidity		-	-	95%
Yarn diameter to check (mm)		0,02	-	-

Optional guide

This guide is used to reliable the coverage yarn absence detection when the central yarn stays alone (avoiding the vibration).



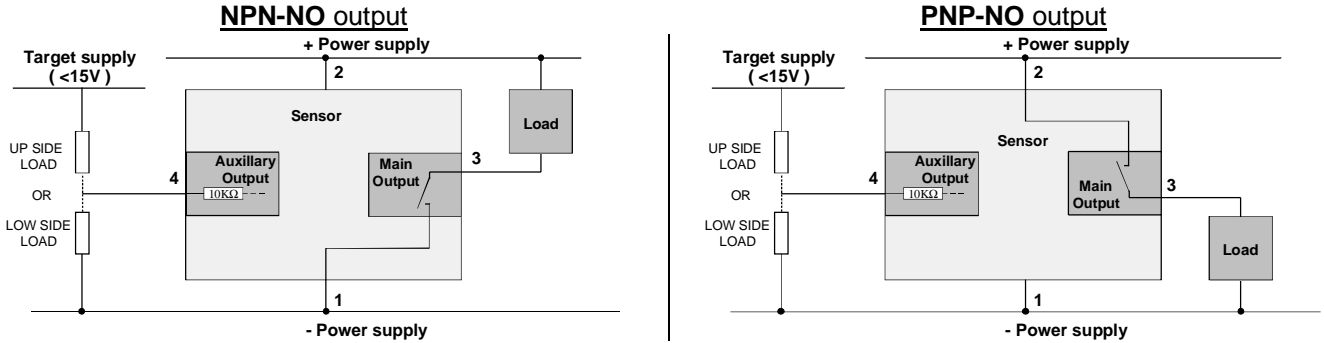
CA9-TS018



Assembling/Regulation with 2 M4x10 screws

Setting up procedure

Electrical diagram



Global Operations

State	LED	Main Output				Auxiliary output
		NPN-NO	PNP-NO	Momentary NPN	Momentary PNP	
Switch-on	Light Off	Inactive = Open	Inactive = Open	Inactive = Open	Inactive = Open	Inactive = Low level
Presence of yarn	Light Off	Inactive = Open	Inactive = Open	Inactive = Open	Inactive = Open	Inactive = Low level
Absence of yarn	Light On	Active = 0V	Active = 24V	Momentary active = 0V*70ms	Momentary active = +24V*70ms	Active = High level

Codification board

MOS-E	X	X	X	X	X
LED position					
On end	3				
Front side	9				
Guides					
Without guide		0			
With CA9-TS018 guide		1			
Connections					
By cable			1		
By cable and 4 prong plug			4		
Response time (ms)					
25				1	
50				2	
100				3	
200				4	
500				5	
700				6	
1500				7	
2000				8	
Output					
NPN Normally open (NO)					1
PNP Normally open (NO)					2
Momentary NPN Normally open (NO)					5
Momentary PNP Normally open (NO)					6