

### Application

**MCL4** is a yarn break **capacitive sensor**, used for **assembling, and winding** applications.

**MAIN FUNCTION: To control the linear motion of 1 to 4 yarns in assembling operations.**

When a yarn breaks or stops, the **MCL4** will inform the user (flashing LED) that a position is defective. It can also activate a **yarn cutter** or stop the position giving a **LOW or HIGH signal** to an automate. Any kind of material able to keep electrostatic charge can be checked by the **MCL4**.

**PRINCIPLE:** The **MCL4** probe will check the tension variations produced by the electrical charges into the yarn in motion. The **MCL4** is insensitive to dust and vibrations.

**ELECTRICAL PROTECTION:** The **MCL4** is protected against reversed polarity and high level overload on output. It shows a very high level of EMC, electromagnetic compatibility : >4 kV.

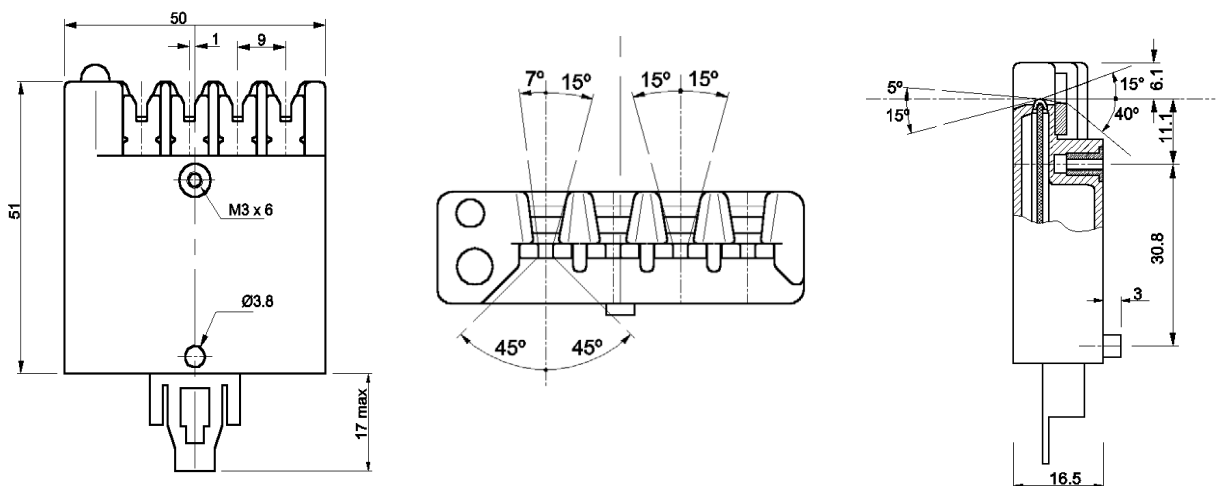


#### Characteristics :

- Power supply : 18 to 30 V DC
- NPN or PNP output
- Inhibition switch
- External programming or inhibition input
- 1 to 4 thread supervising mode can be selected
- Visual alarm (red LED)
- Connection cable or Lumberg 2,5 MSFW 5 connector or any kind of connector on request
- The sensor sensibility can be adapted to operator's requirement

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

### Dimensions (mm)



One of these guides can be adapted on the MCL4 :



CA9-TD011 (Aluminium oxide)  
 CA9-TD016 (Titanium oxide)



CA9-TD003 (Aluminium oxide)  
 CA9-TD013 (Zirconium aluminium)



CA9-TD014 (Zirconium aluminium)  
 CA9-TD015 (Aluminium oxide)

### Characteristic codification

MCL4-			X	X	X	X	X
<b>Inhibition / Pilot light / Programming</b>							
<b>Push button</b>	<b>LED</b>	<b>External inputs</b>					
Without	Without	Without	1				
With	Without	Without	2				
Without	With	Without	3				
With	With	Without	4				
Without	Without	With	5				
With	Without	With	6				
Without	With	With	7				
With	With	With	8				
<b>Guides</b>							
Without guide				0			
CA9-TD011				1			
CA9-TD003				2			
CA9-TD013				3			
CA9-TD014				4			
CA9-TD015				5			
CA9-TD016				6			
<b>Connections</b>							
By cable					1		
By connector					2		
<b>Response time (ms)</b>							
100						3	
200						4	
600						5	
900						6	
<b>Output</b>							
NPN Normally open (NO)							1
PNP Normally open (NO)							2
NPN Normally close (NC)							3
PNP Normally close (NC)							4

### Example

MCL4-84261 :

- 8 : with push-button, LED and external inhibition or programming input
- 4 : with guide CA9-TD014
- 2 : with Lumberg 2,5 MSFW 5 connector
- 6 : response time of 900 ms
- 1 : NPN output Normally Open (NO)

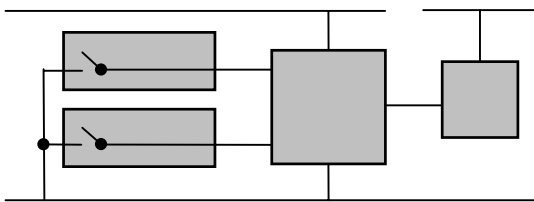
Sensors from the new range can be mounted on the FIL CONTROL standard rail (ref. : 423800), by the mean of bracket (ref. : 423802).

### Technical characteristics

Parameters	Conditions	Min	Typ	Max
Power supply voltage (V)		18	24	30
Sensor consumption (mA)	Own current consumption at 24 V DC and at 25°C. Configuration inputs and output not connected	-	17	30
Indicator light ON			16	19
Indicator light OFF				
Ripple voltage at 100 Hz	Supply voltage peaks < 30 V	-	-	80%
Delay between detection and move start (s)	On request	-	2	-
Dropout voltage at the NPN output (V)	Output current < 1 A	-	0,5	1,1
Dropout voltage at the PNP output (V)	Output current < 1 A	-	1,2	1,6
Min. current driven by the output (A)	Voltage at the output < 32 V	1	-	-
Max. voltage at the output (V)		-	-	50
Logical level on the configuration inputs (V)	Supply voltage = 24 V	10,7	-	3,8
High level				
Low level				
Current in the configuration inputs (mA)	Supply voltage = 24 V	-	-	5,3
Low level				
Immunity to the perturbations (kV)	Positive and negative	4	-	-
Injected				
Inducted				
Radiated				
Temperature range (°C)	For storage	-25	-	85
For operation				
Relative humidity		-	-	80%

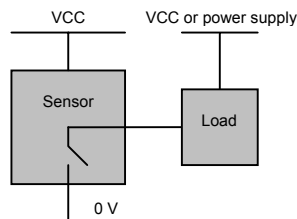
### Setting up procedure

Standard connection



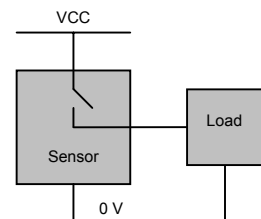
1 & 4 : External programming inputs  
 2 : NPN output

Standard configuration  
 Output NPN-NO



Presence of yarn(s)

Other configuration  
 Output PNP-NO



Presence of yarn(s)

### Global Operations

State	LED	Output	If external inputs : Programmation		
			Input n°1	Input n°2	Yarn count (N)
Switch-on	Light-on	Inactive	Level 1	Level 1	4
Inhibition	Light-on	Inactive	Level 0	Level 1	3
Presence of N yarn(s)	Light-off	Inactive	Level 1	Level 0	2
Absence of a yarn(s)	Blinking	Active	Level 0	Level 0	1