

### Application

**MCL1** is a yarn break **capacitive sensor**, very versatile, used in winding, doubling, texturing, etc. process.

**MAIN FUNCTION: Control the linear motion of any kind of textile yarns.**

When the yarn breaks or when scrolling stops, **MCL1** 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 / HIGH signal** to an automate.

Any kind of material able to keep electrostatic charge can be checked by **MCL1**.

**A specific version has been developed for Elasthane yarns (low speed).**

**PRINCIPLE: MCL1** probe will check the tension variations produced by the electrical charges into the yarn in motion. **MCL1** is insensitive to dust and vibrations.

**ELECTRICAL PROTECTION: MCL1** is protected against reversed polarity and high level overload on output. It shows a very high level of EMC, electromagnetic compatibility: >4 kV.

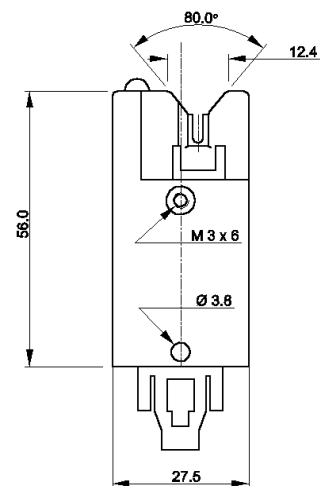
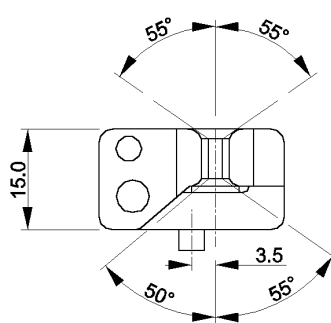
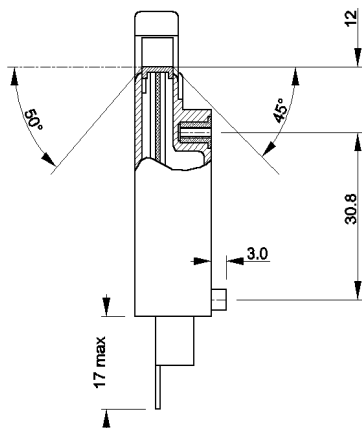


### Characteristics :

- Power supply : 18 to 30 V DC
- NPN or PNP Output
- Inhibition switch
- External inhibition input
- Visual alarm (red LED)
- Connection: through cable, Lumberg 2,5 MSFW 5 connector or any kind of connector on demand
- MCL1 sensitivity could 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 **MCL1** :



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

MCL1-			X	X	X	X	X
<b>Inhibition / Pilot light / Inhibition</b>							
<b>Push button</b>	<b>LED</b>	<b>External input</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

MCL1-80261 :

- 8 : with push-button, LED and external inhibition input
- 0 : without guide
- 2 : with Lumberg 2,5 MSFW 5 connector
- 6 : response time of 900 ms
- 1 : NPN output Normally Open (NO)

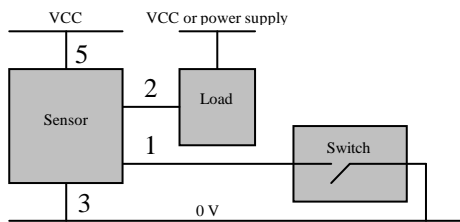
Sensors from the new range can be mounted on the FIL CONTROL standard rail (ref. : 423800), by the mean of bracket (ref. : 423802).

### 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. External inhibition and output not connected	-	22	25
	Indicator light ON		7,5	10,5
	Indicator light OFF			
Ripple voltage at 100 Hz	Supply voltage peaks < 30 V	-	-	80%
Delay between detection and move start (s)	On request	-	3	-
Dropout voltage at the 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 inhibition input (V)	Supply voltage = 24 V			
	High level	10,7	-	
	Low level			3,8
Current in the inhibition input (mA)	Supply voltage = 24 V			
	Low level	-	-	5,3
Immunity to the perturbations (kV)	Positive and negative			
	Injected	4	-	-
	Inducted	4	-	-
	Radiated	4	-	-
Temperature range (°C)				
	For storage	-25	-	85
	For operation	0	-	50
Relative humidity		-	-	80%

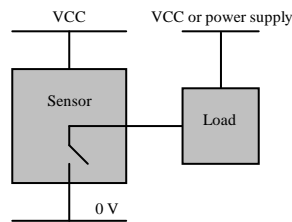
### Setting up procedure

#### Standard connection



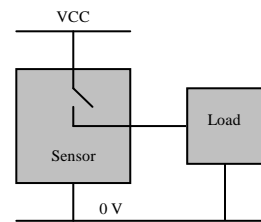
1 : External inhibition input  
2 : NPN output

#### Standard configuration Output NPN-NO



Presence of yarn

#### Other configuration Output PNP-NO



Presence of yarn

#### Global Operations

State	LED	Output	External input
Switch-on	Light-on	Inactive	Active level 0 (0V) Inactive level 1 (24V)
Inhibition	Light-on	Inactive	
Presence of yarn	Light-off	Inactive	
Absence of yarn	Blinking	Active	