FIL CONTROL
GROUPE ELSIDEV
ELectronique électromécanique
Service
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AFAQ ISO 9001 VERSION 2000

MPS

Piézoelectric sensor range

Application

The **MPS** is a **piézoelectric sensor** devoted to **assembling and twisting** operations**: high count (400 to 10 000 dTex)** and **high tensioned yarns (100 to 2 700 g)**.

MAIN FUCNTION: Control of the final yarn in order to detect breaking of one of the ends.

When one or two ends break or when scrolling stops, the **MPS** will inform the user that the position is in defect. It can activate a **yarn cutter** or stop the position by giving **LOH information to the automate**.

PRINCIPLE: The **MPS** follows the yarn vibrations on the ceramic. To **get independent positions**, each signal is analysed by the electronics of each **MPS** sensor.
A **4° minimum embarrage** has to be made between ceramic top and linear yarn motion. Yarn speed must be within **20 to 120 m / min.**

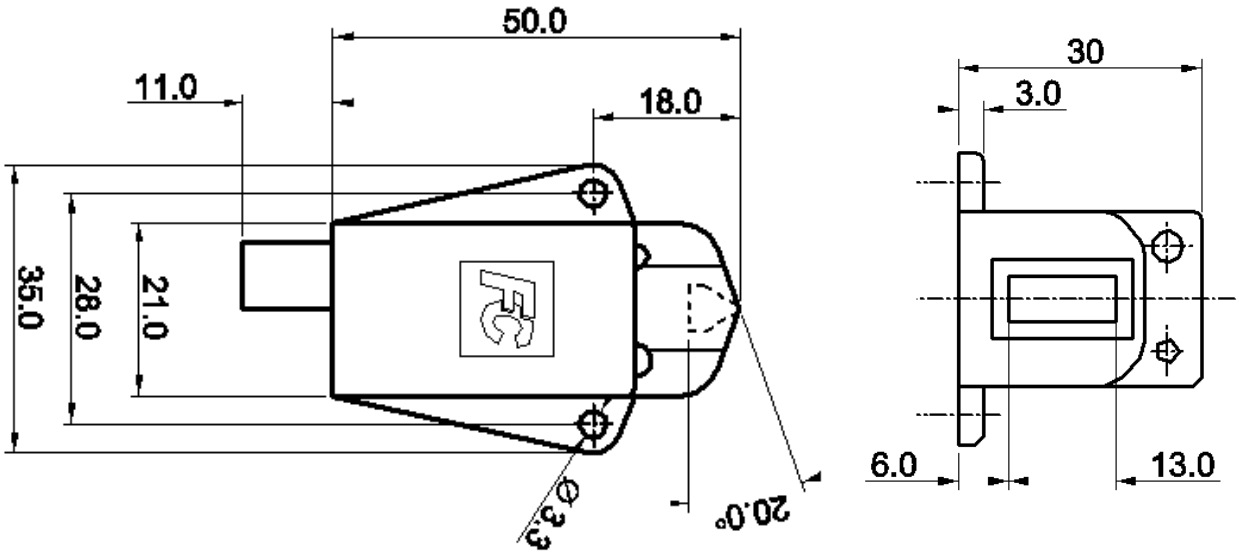
ELECTRICAL PROTECTION: MPS protection against reversed polarity and high level overload on output. It shows a very high level of electromagnetic compatibility (EMC).

Characteristics:

- Power supply : 18 to 30 V DC
- 1 NPN or PNP power output
- An inhibition push button
- An inhibition input
- Visual alarm (LED)
- Connection by cable or connector

These characteristics can be adapted to operator's requirements (see the codification board).

Dimensions (mm)



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Codification board

MPS -	X	0	X	X	X
Inhibition / Pilot light / Inhibition					
Push button / **LED** / **Ext. input**					
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				
Guides					
Without guide		0			
Connections					
By cable			1		
By connector			2		
By direct PCB plug			3		
Response time (s)					
3				9	
Output					
NPN Normally open (NO)					1
PNP Normally open (NO)					2
NPN Normally close (NC)					3
PNP Normally close (NC)					4

Example

MPS-80291 :

- 8 : with push-button, LED and external inhibition input
- 0 : without guide
- 2 : with Lumberg 2,5 MSFW 5 connector
- 9 : response time of 3 s
- 1 : NPN output Normally open (NO)

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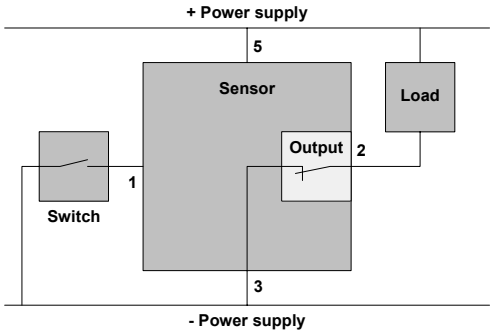
Technical characteristics

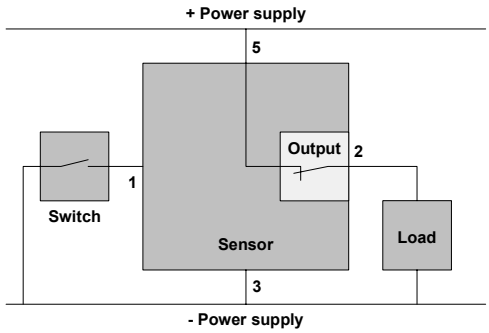
Parameters	Conditions	Min	Typ	Max
Power supply voltage (V)		18	24	30
Sensor consumption (mA) Light ON Light OFF	Own current consumption at 24 V DC and at 25°C. External inhibition and output not connected	-	 22 7,5	 25 10,5
Ripple voltage at 100 Hz	Supply voltage peaks < 30 V	-	-	80%
Delay between detection 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
Level on the inhibition input (V) High level Low level	Supply voltage = 24 V	 10,7	-	 3,8
Current in the inhibition input (mA) Low level	Supply voltage = 24 V	 -	 -	 5,3
Immunity to the perturbations (kV) Injected Inducted Radiated	Positive and negative	 4 4 4	-	-
Temperature range (°C) For storage For operation		 -25 0	-	 85 50
Relative humidity		-	-	80%
Yarn diameter to check (mm)		400	-	10000
Scrolling speed (m/min)		20	-	120
Number of tuning parameters		2000	-	10000
Tension of the yarn (g)		100	-	2700

Setting up procedure

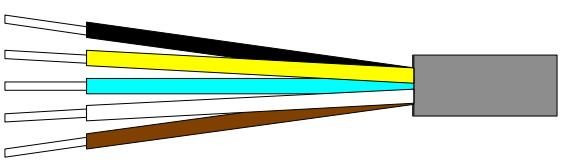
Standard configuration
Output NPN-NO



Standard configuration
Output PNP-NO



Black wire : External input	1
Yellow wire : Output all or nothing	2
Blue wire : - supply	3
White wire : No connected	4
Brown wire : + supply	5



Function diagram