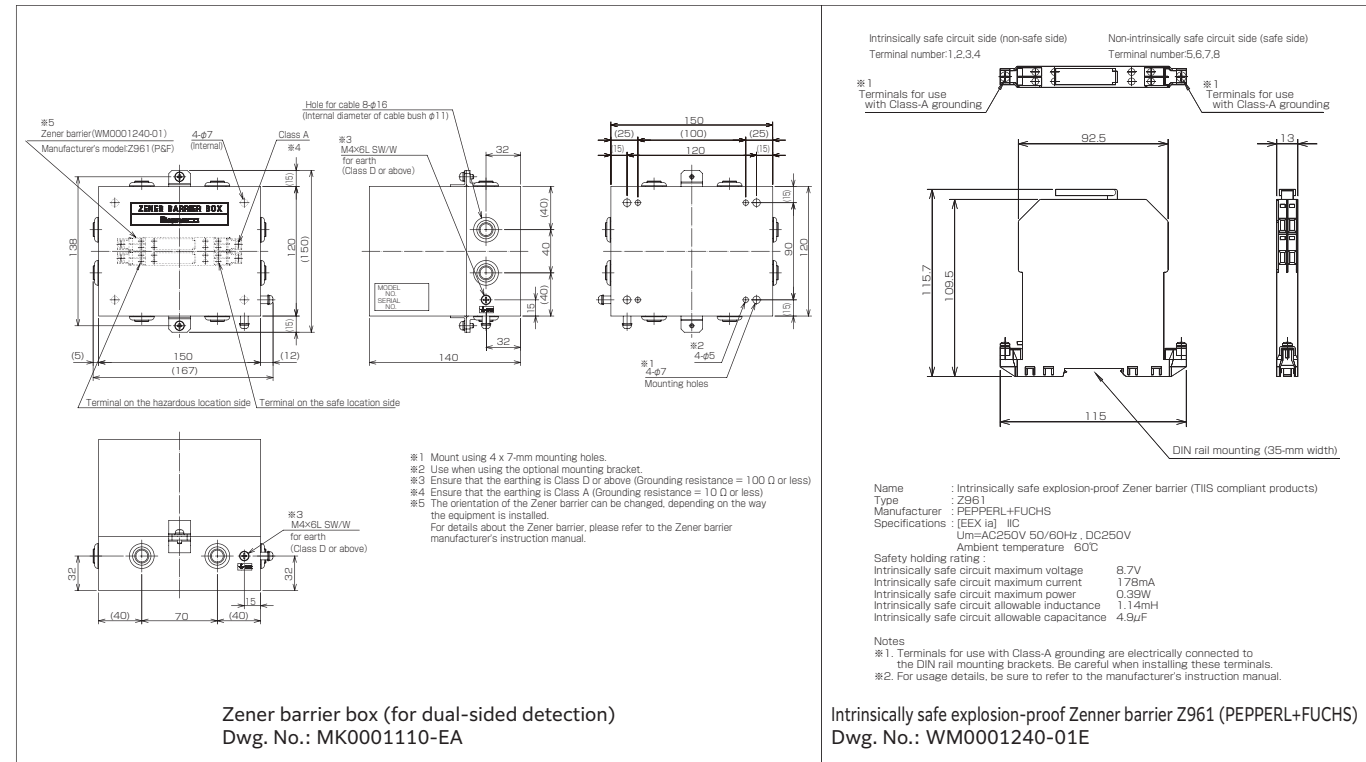
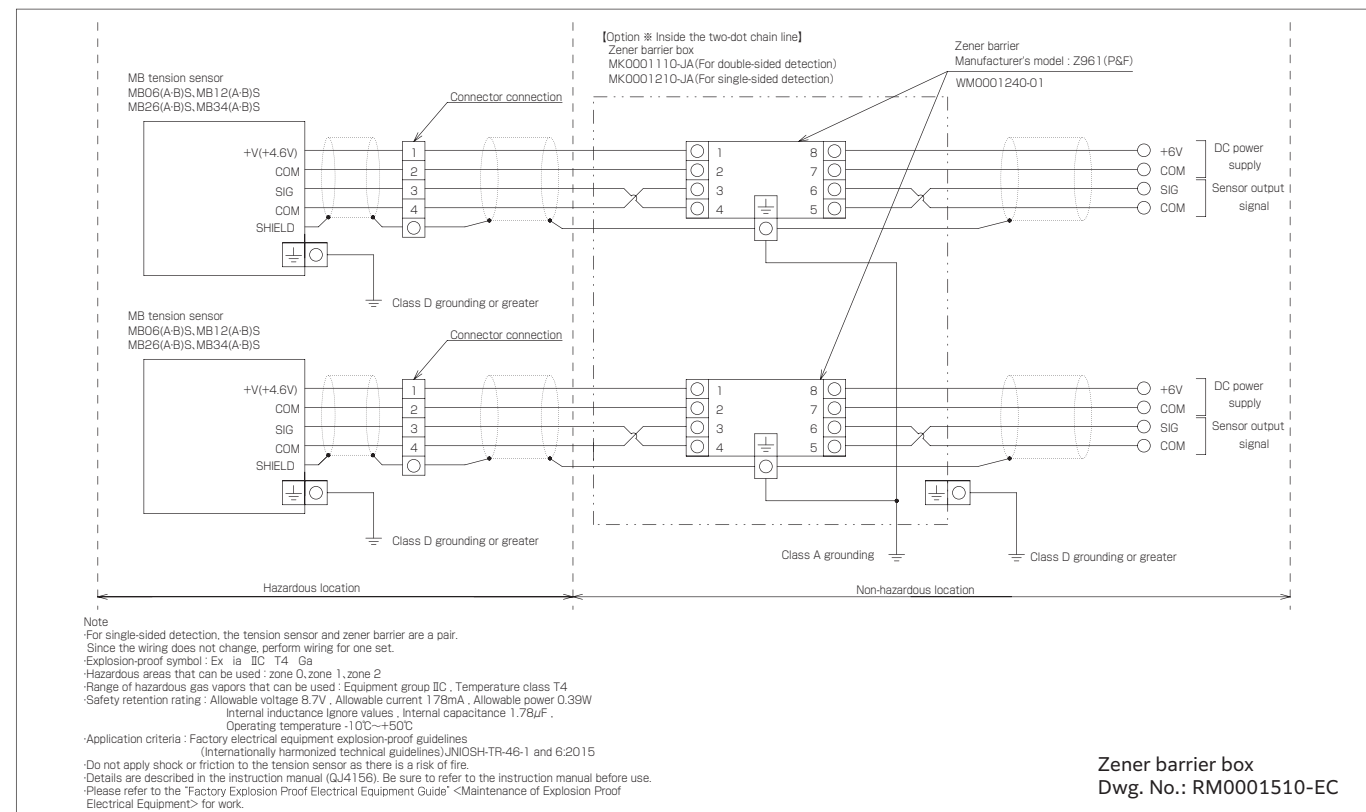


External dimensions



Wiring diagram



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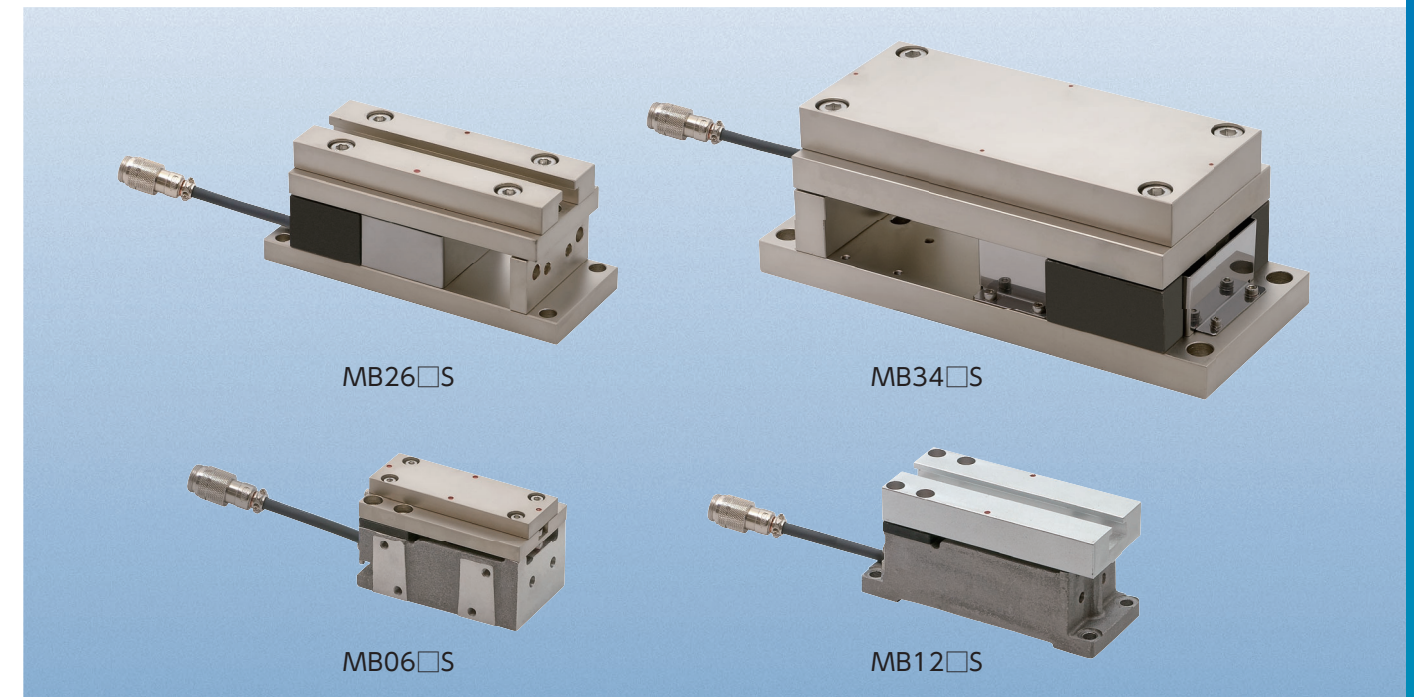
NIRECO

Intrinsically Safe Explosion-Proof MB Tension Sensors

Models
MB06□S / MB12□S /
MB26□S / MB34□S

Used in tension controllers and tension meters.

We offer a line of tension sensors whose rated tensions range from 100 N to 5000 N.



Features

- Intrinsically safe explosion-proof design (can be installed in hazardous locations where there is a risk of steam of flammable or explosive gas)
- CE mark (EU directive) certified
- MB tension sensors offer performance and reliability
- Can be used over a wide range of tensions, from low to high
- A wide angle of resultant tension force makes these sensors easy to install
- MB tension sensors are strain-gauge types with high sensitivity and good responsiveness

Specifications

Model	MB06BS	MB06AS	MB12BS	MB12AS	MB26BS	MB26AS	MB34BS	MB34AS	
Rated tension (N)	100	200	100	200	500	1000	3000	5000	
Roller displacement (μm/N)	2.42	1.20	2.80	1.38	0.47	0.22	0.086	0.057	
Allowable roller weight (kg)	10	20	10	20	50	100	300	350	
Mass (kg)	1.5		0.8		3.4		16.1		
Tension force direction	Detection in the forward/reverse directions is possible							Only detection in the forward direction is possible. Detection in the reverse direction is not possible	
Ambient operating temperature: -10 to +50°C Power supply voltage: +6 VDC/20 mA									

Note 1. Roller displacement indicates the displacement of the roller per load of 1 N.

Note 2. Allowable roller weight for rated tension indicates the permissible roller weight in double-sided detection.

Note 3. If the MB06□S, MB12□S or MB26□S is supplied with a wall mounting bracket (optional), the suffix (-W) will be added to their model names. (Example: MB12BS-W)

External dimensions

※1
The cable between the sensor and the Zener barrier
A) Use the supplied connector and crimp terminal.
B) Use a 4-core shielded cable of AWG22 or higher and connect the connector referring to the figure below.
C) Be sure to connect the shielded wire to the connector body.
D) The internal inductance of the sensor is negligible.
The internal capacitance is 1.78μF.
Select the Zener barrier within the above values.
E) Refer to the instruction manual for details.

connector Pin number	Application
1	+6VDC
2	COM
3	SIG
4	COM

Specifications
Rated tension: A:200N B:100N
(when both sides are detected)
Roll allowable mass: A:20kg B:10kg
(when both sides are detected)
Operating temperature range: -10℃ ~ +50℃
Weight: 1.5 kg
Detection range:
The resultant direction of tension is the hatched area in the figure below.

The installation surface must be flat.
(Flatness 0.05 or less)
Clean the installation surface cleanly on both the sensor and machine sides.
Leave a space of 60mm or more on the cable side.

The sensor mounting direction should be the same with respect to the cable side.

Note
Select the cable so that the total length from the sensor to the controller or meter is 50m or less through the zener barrier.

※1
Accessories for the cables between the sensor and the Zener barrier
-connector
-Crimp terminal (bar x 4, circle x 1)
-Conductive tape 6x15mm

Explosion-proof symbol: Ex ia IIC T4 Ga
+Hazardous areas that can be used: zone 0, zone 1, zone 2
+Range of hazardous gas vapors that can be used: Equipment group IIC, Temperature class T4
+Safety retention rating: Allowable voltage 8.7V, Allowable current 178mA, Allowable power 0.39W
Internal inductance ignore values, Internal capacitance 1.78μF.
Operating temperature -10℃~+50℃

Application criteria: Factory electrical equipment explosion-proof guidelines (Internationally harmonized technical guidelines) JNISOSH-TR-46-1 and 6:2015
Do not apply shock or friction to the tension sensor as there is a risk of fire.
Details are described in the instruction manual (QJ4156). Be sure to refer to the instruction manual before use.
Please refer to the "Factory Explosion Proof Electrical Equipment Guide" <Maintenance of Explosion Proof Electrical Equipment> for work.

Intrinsically safe explosion-proof MB tension sensors
MB06AS Dwg. No.: MD0004860-EA
MB06BS Dwg. No.: MD0004870-EA

※1
The cable between the sensor and the Zener barrier
A) Use the supplied connector and crimp terminal.
B) Use a 4-core shielded cable of AWG22 or higher and connect the connector referring to the figure below.
C) Be sure to connect the shielded wire to the connector body.
D) The internal inductance of the sensor is negligible.
The internal capacitance is 1.78μF.
Select the Zener barrier within the above values.
E) Refer to the instruction manual for details.

connector Pin number	Application
1	+6VDC
2	COM
3	SIG
4	COM

Specifications
Rated tension: A:1000N B:500N
(when both sides are detected)
Roll allowable mass: A:100kg B:50kg
(when both sides are detected)
Operating temperature range: -10℃ ~ +50℃
Weight: 3.4 kg
Detection range:
The resultant direction of tension is the hatched area in the figure below.

The installation surface must be flat.
(Flatness 0.05 or less)
Clean the installation surface cleanly on both the sensor and machine sides.
Leave a space of 60mm or more on the cable side.

The sensor mounting direction should be the same with respect to the cable side.

Note
Select the cable so that the total length from the sensor to the controller or meter is 50m or less through the zener barrier.

※1
Accessories for the cables between the sensor and the Zener barrier
-connector
-Crimp terminal (bar x 4, circle x 1)
-Conductive tape 6x15mm

Explosion-proof symbol: Ex ia IIC T4 Ga
+Hazardous areas that can be used: zone 0, zone 1, zone 2
+Range of hazardous gas vapors that can be used: Equipment group IIC, Temperature class T4
+Safety retention rating: Allowable voltage 8.7V, Allowable current 178mA, Allowable power 0.39W
Internal inductance ignore values, Internal capacitance 1.78μF.
Operating temperature -10℃~+50℃

Application criteria: Factory electrical equipment explosion-proof guidelines (Internationally harmonized technical guidelines) JNISOSH-TR-46-1 and 6:2015
Do not apply shock or friction to the tension sensor as there is a risk of fire.
Details are described in the instruction manual (QJ4156). Be sure to refer to the instruction manual before use.
Please refer to the "Factory Explosion Proof Electrical Equipment Guide" <Maintenance of Explosion Proof Electrical Equipment> for work.

Intrinsically safe explosion-proof MB tension sensors
MB26AS Dwg. No.: MD0004900-EA
MB26BS Dwg. No.: MD0004910-EA

※1
The cable between the sensor and the Zener barrier
A) Use the supplied connector and crimp terminal.
B) Use a 4-core shielded cable of AWG22 or higher and connect the connector referring to the figure below.
C) Be sure to connect the shielded wire to the connector body.
D) The internal inductance of the sensor is negligible.
The internal capacitance is 1.78μF.
Select the Zener barrier within the above values.
E) Refer to the instruction manual for details.

connector Pin number	Application
1	+6VDC
2	COM
3	SIG
4	COM

Specifications
Rated tension: A:200N B:100N
(when both sides are detected)
Roll allowable mass: A:20kg B:10kg
(when both sides are detected)
Operating temperature range: -10℃ ~ +50℃
Weight: 0.8 kg
Detection range:
The resultant direction of tension is the hatched area in the figure below.

The installation surface must be flat.
(Flatness 0.05 or less)
Clean the installation surface cleanly on both the sensor and machine sides.
Leave a space of 60mm or more on the cable side.

The sensor mounting direction should be the same with respect to the cable side.

Note
Select the cable so that the total length from the sensor to the controller or meter is 50m or less through the zener barrier.

※1
Accessories for the cables between the sensor and the Zener barrier
-connector
-Crimp terminal (bar x 4, circle x 1)
-Conductive tape 6x15mm

Explosion-proof symbol: Ex ia IIC T4 Ga
+Hazardous areas that can be used: zone 0, zone 1, zone 2
+Range of hazardous gas vapors that can be used: Equipment group IIC, Temperature class T4
+Safety retention rating: Allowable voltage 8.7V, Allowable current 178mA, Allowable power 0.39W
Internal inductance ignore values, Internal capacitance 1.78μF.
Operating temperature -10℃~+50℃

Application criteria: Factory electrical equipment explosion-proof guidelines (Internationally harmonized technical guidelines) JNISOSH-TR-46-1 and 6:2015
Do not apply shock or friction to the tension sensor as there is a risk of fire.
Details are described in the instruction manual (QJ4156). Be sure to refer to the instruction manual before use.
Please refer to the "Factory Explosion Proof Electrical Equipment Guide" <Maintenance of Explosion Proof Electrical Equipment> for work.

Intrinsically safe explosion-proof MB tension sensors
MB12AS Dwg. No.: MD0004880-EA
MB12BS Dwg. No.: MD0004890-EA

※1
The cable between the sensor and the Zener barrier
A) Use the supplied connector and crimp terminal.
B) Use a 4-core shielded cable of AWG22 or higher and connect the connector referring to the figure below.
C) Be sure to connect the shielded wire to the connector body.
D) The internal inductance of the sensor is negligible.
The internal capacitance is 1.78μF.
Select the Zener barrier within the above values.
E) Refer to the instruction manual for details.

connector Pin number	Application
1	+6VDC
2	COM
3	SIG
4	COM

Specifications
Rated tension: A:5000N B:3000N
(when both sides are detected)
Roll allowable mass: A:350kg B:300kg
(when both sides are detected)
Operating temperature range: -10℃ ~ +50℃
Weight: 16.1 kg
Detection range:
The resultant direction of tension is the hatched area in the figure below.

The installation surface must be flat.
(Flatness 0.05 or less)
Clean the installation surface cleanly on both the sensor and machine sides.
Leave a space of 60mm or more on the cable side.

The sensor mounting direction should be the same with respect to the cable side.

Note
Select the cable so that the total length from the sensor to the controller or meter is 50m or less through the zener barrier.

※1
Accessories for the cables between the sensor and the Zener barrier
-connector
-Crimp terminal (bar x 4, circle x 1)
-Conductive tape 6x15mm

Explosion-proof symbol: Ex ia IIC T4 Ga
+Hazardous areas that can be used: zone 0, zone 1, zone 2
+Range of hazardous gas vapors that can be used: Equipment group IIC, Temperature class T4
+Safety retention rating: Allowable voltage 8.7V, Allowable current 178mA, Allowable power 0.39W
Internal inductance ignore values, Internal capacitance 1.78μF.
Operating temperature -10℃~+50℃

Application criteria: Factory electrical equipment explosion-proof guidelines (Internationally harmonized technical guidelines) JNISOSH-TR-46-1 and 6:2015
Do not apply shock or friction to the tension sensor as there is a risk of fire.
Details are described in the instruction manual (QJ4156). Be sure to refer to the instruction manual before use.
Please refer to the "Factory Explosion Proof Electrical Equipment Guide" <Maintenance of Explosion Proof Electrical Equipment> for work.

Intrinsically safe explosion-proof MB tension sensors
MB34AS Dwg. No.: MD0004920-EA
MB34BS Dwg. No.: MD0004930-EA