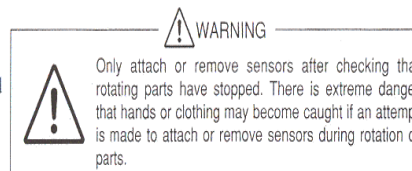


The MP-900 Series are electromagnetic detectors which make use of permanent magnets and detector coils. They are chiefly used in conjunction with a detector gear mounted onto a rotating shaft by bringing the detector into proximity to the gear so that the detector outputs a signal, the frequency of which is proportional to the rpm.

## 2.FEATURES

- (1) Simple construction
- (2) No power supply required
- (3) Compact and lightweight
- (4) Easy to maintain



## 3. SPECIFICATIONS

Characteristics	Model	General use	MP-910 directly attached cord (5m)	Low impedance	For small modules	Oil-proof	Oil/Heat-proof up to 150°C	Heat-proof up to 220°C	Heat-proof (Low impedance)	Long body type	Smaller body than MP-910	Long body type	MP-960 directly attached cord (5m)	For medium modules	Ultra compact
		MP-910	MP-911	MP-912	MP-920	MP-930	MP-935	MP-936	MP-937	MP-940	MP-950	MP-954	MP-962	MP-963	MP-992
DC resistance * 1	(Ω)	850~950	850~950	85~105	850~950	850~950	600~700	800~900	85~105	500~600	2.1 k~2.3 k	2.1 k~2.3 k	1.25 k~1.45 k	3.7 k~4 k	160~190
Inductance	(mH) [1kHz, T.Y.P.]	300	300	30	300	300	270	370	30	270	400	400	210	1800	25
Impedance	(Ω) [1kHz, T.Y.P.]	2 k	2 k	240	2 k	2 k	1.8 k	2.5 k	240	1.8 k	3.5 k	3.5 k	2.1 k	16 k	250
Output voltage * 2	(Vp-p) [1kHz, T.Y.P.]	2.0 or greater	2.0 or greater	2.0 or greater	1.5 or greater (M=0.75)	2.0 or greater	2.0 or greater	2.0 or greater	2.0 or greater	2.0 or greater	2.0 or greater	2.0 or greater	1.5 or greater	2.5 or greater	0.5 or greater
Detectable range * 3 * 4	(Hz)	200~35,000	200~35,000	200~80,000	300~35,000	200~35,000	300~35,000	300~35,000	200~80,000	300~35,000	300~35,000	300~35,000	400~35,000	45~15,000	400~100,000
Detector gear modules		1~3	1~3	1~3	0.3~1	1~3	1~3	1~3	1~3	1~3	1~3	1~3	1~3	3~10	1~3
Operating temperature	(°C)	-10~+90	-10~+90	-10~+90	-10~+90	-10~+90	-10~+150	-10~+220	-10~+125	-10~+90	-10~+90	-10~+90	-10~+90	-10~+90	-10~+120
Maximum vibration * 5	(m/s <sup>2</sup> )	196	196	196	196	196	196	196	196	196	196	196	196	147	196
Maximum shock * 6	(m/s <sup>2</sup> )	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960
Mass	(g)	90	300 including cord	90	90	100 including cord	100	100	250	90	70	90	50	200	3
Surrounding magnetic field	(10 <sup>-4</sup> T)	300 or less	300 or less	300 or less	50 or less	300 or less	200 or less	200 or less	300 or less	100 or less	100 or less	100 or less	50 or less	300 or less	10 or less

\* 1 : Temperature coefficient for DC resistance is 0.4 % / degree.

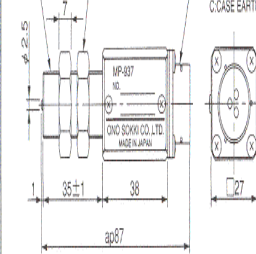
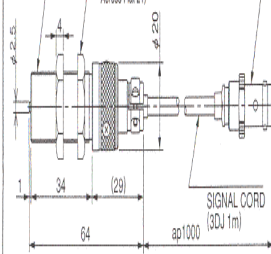
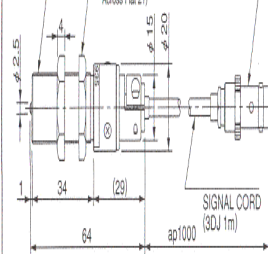
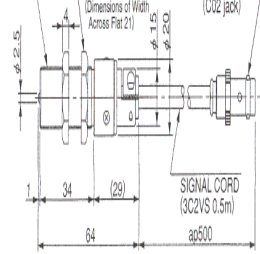
\* 2 : Load resistance 100 kΩ, module = 1 and gap = 0.5mm

\* 3 : The indicated value of frequency (Hz) corresponds to that of revolution speed (r/min) when a detection gear with 60P/R is used.  
[Frequency Hz] = [Revolution speed r/min] ÷ 60 × [Number of teeth]

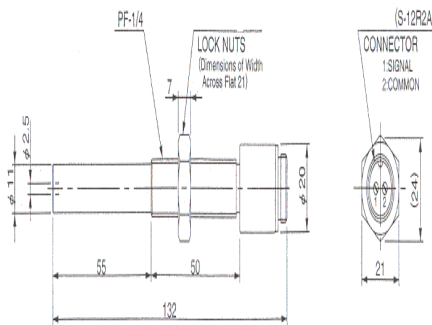
\* 4 : When using the Ono Sokki MP-001 (60P/R).

\* 5 : 2 hours at 40 Hz in X and Y directions, 4 hours at 40 Hz in Z direction.

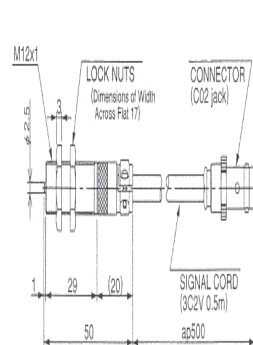
\* 6 : 3 times in X, Y and Z directions.



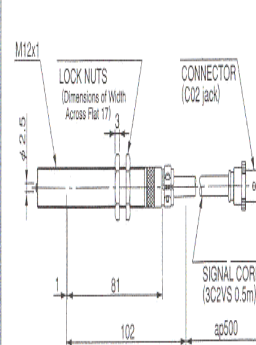
MP-940



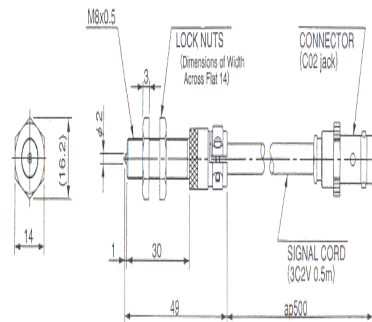
MP-950



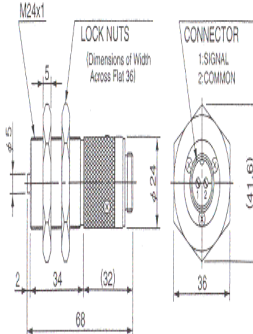
MP-954



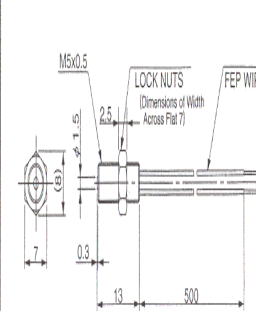
MP-962



MP-963



MP-992



MP-911	200	500	50	300	30	100	35000
MP-912	200	500	50	300	30	100	80000
MP-930	200	500	50	300	30	100	35000
MP-935	300	1200	75	300	40	100	35000
MP-936	300	1000	75	300	40	100	35000
MP-937	200	500	50	300	30	100	80000
MP-940	300	1200	80	300	50	130	35000
MP-950	300	1000	100	300	60	150	35000
MP-954	300	1200	100	300	60	150	35000
MP-962	400	1500	140	420	80	200	35000

RL:10 kΩ

RL:10 kΩ

Model	Gear modules		The lower limit of rpm						The max. rpm
			M=3		M=5		M=7.5		
	Gap mm		1	2	1	2	1	2	
MP-963			45	90	25	50	20	45	15000

RL:10 kΩ

Model	Gear modules		The lower limit of rpm						The max. rpm
			M=0.5		M=0.75		—		
	Gap mm		0.2	0.5	0.2	0.5	—		
MP-920			2000	—	300	1000	—		35000

RL:10 kΩ

The table above gives the approximate values for 60-tooth gear, the detector output being approximately 0.5 Vp-p for the above conditions.

For low-speed rpm detector about the 0 r/min point, the MP-981 detector is recommended.

## 6.FABRICATION SPECIFICATIONS FOR THE DETECTION GEAR

When fabricating or purchasing the detection gear, the following conditions must be satisfied.

Material : Magnetic (e.g., S45C)

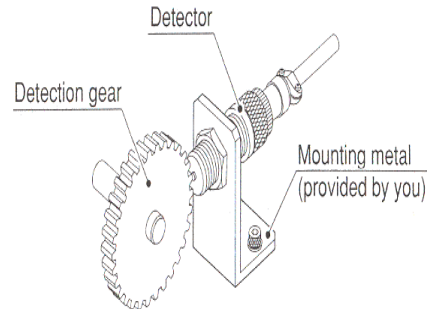
Tooth width : 5 mm or greater

Tooth shape : Involute

## 7.MOUNTING

When mounting the detector, care must be taken that the detector's pickup end and the detection gear teeth are kept free from magnetic or other metallic debris.

The mounting material should be not magnetized and installed securely at the place.



CONNECTOR

CABLE

P2

12P28



NA-505 : 5m

NA-510 : 10m

NA-515 : 15m

NA-520 : 20m

NA-503 (0.3m)

For the counter with TB Terminals, use NA-503 joint cord (3m) together with above.