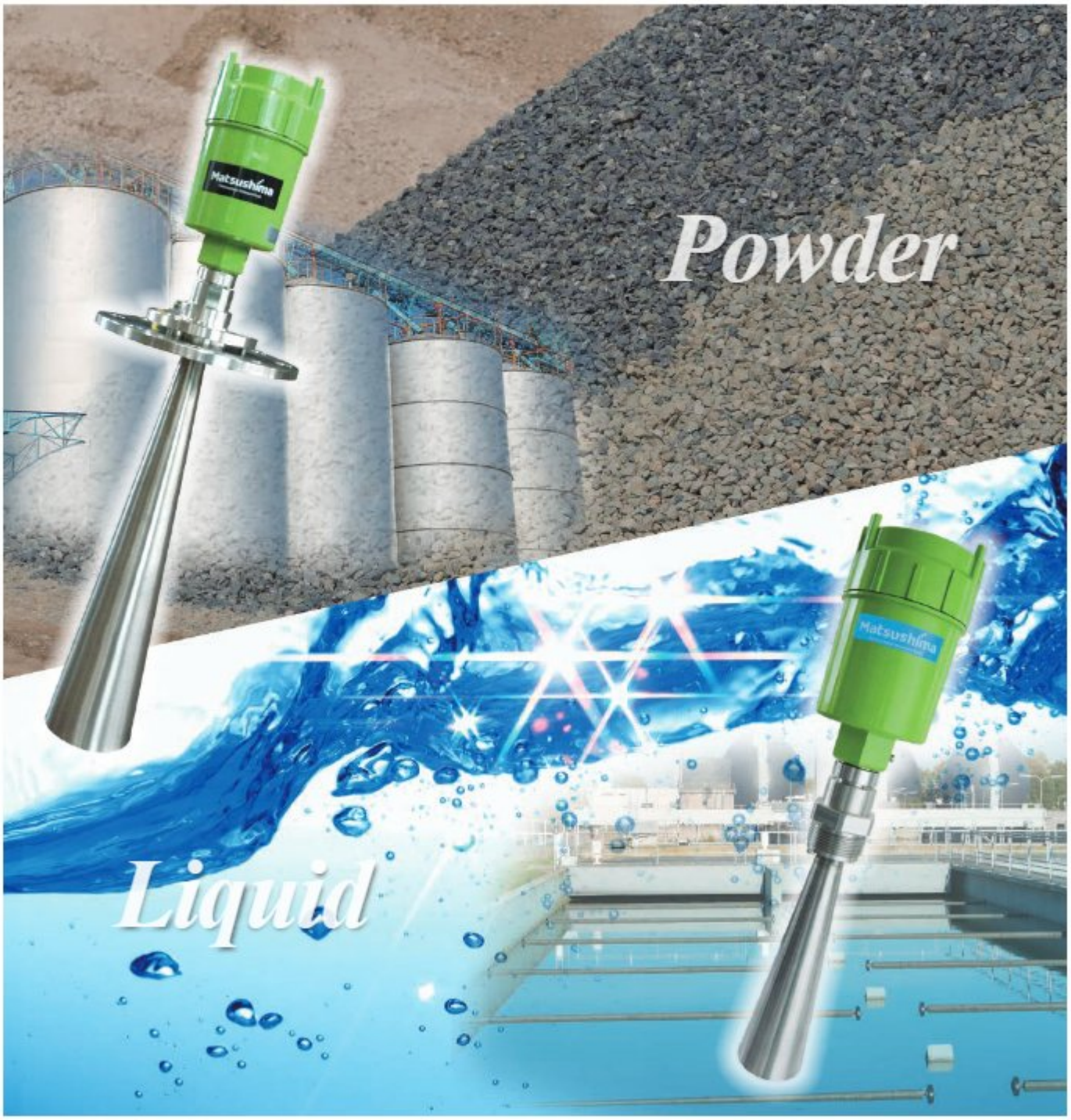
Matsushima
Matsushima Measure Tech

Accuracy and tracking performance extremely improved

Radar Level Transmitter

Version upgrade

MWLM-PR26 Series



Extended the product warr

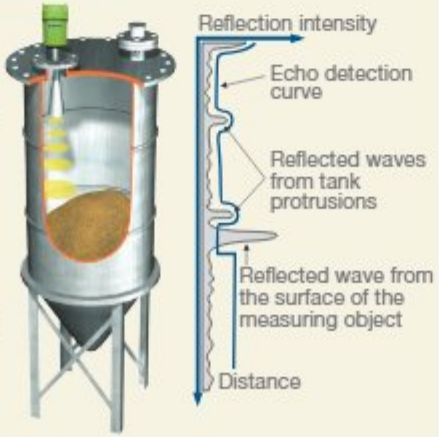
Matsushima's radar level transmitter is manufactured domestically from software to hardware, so it can be delivered quickly with stable supply, and also support our customers with quick maintenance. Since Matshushima has 60 years of experience in measurement control, we are able to meet our customer's requests regarding installation to the facilities.

Customization

Customize the level meter for suitable measuring environments and usage. Able to provide customized level meter in applications that have restrictions under high temperature and high pressure areas.

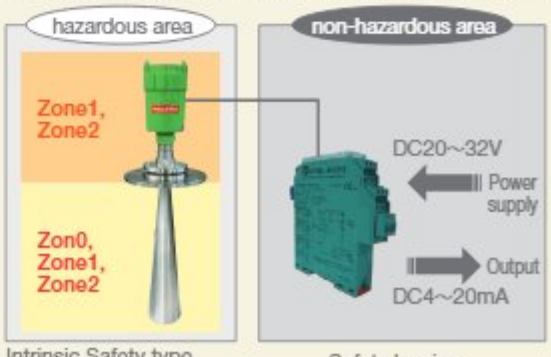
Measuring Principle

The microwave level meter measures the time from when the level meter emits pulse radar waves from the antenna to when the waves (echoes) reflected from the object to be measured return to the meter, which is then calculated into a distance.



Explosion-proof type

Intrinsically safe construction Ex ia ⅡB T4 X (TIIS)



Intrinsic Safety type
Radar Transmitter
MWLM-PR26H7SEx

Safety barrier
KFD2-STC4-Ex1

*Remark: MWLM-PR26C1G cannot be applied in Zon0.

anty period to 2 years.

Flexible customiza capability

Applications

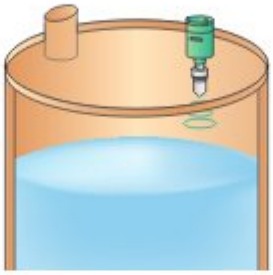
Applies to a variety of applications and flexible customization capability based on our long experience and know-how.

Usage in Applications

Material Silo

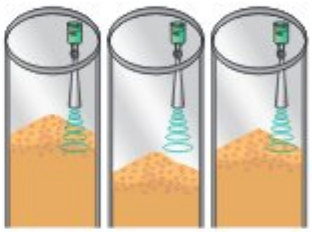
If there's no space to install on top of the silo, it is able to measure from the side of the silo.

Chemical Tank



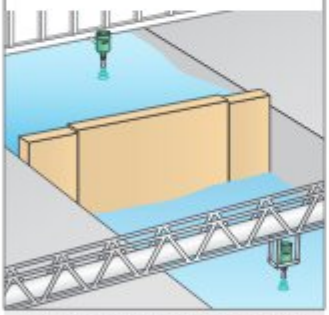
By attaching the PTFE antenna, it is able to measure corrosive chemicals.

Food Silo



Narrow beam angle allows to measure inside a thin, long grain silos.

Water level



Able to continuously measure without being affected by rain, wind, and snow.

Incinerator

Even if antenna is not allowed to be put inside, it can be measured by flat antenna type.

Tripper conveyor

It can follow a sudden level change in bunker. Dust and vapor do not influence level measurement.

Vertical shaft/crusher

It is suitable for vertial shaft or crusher due to high tracking-speed performance.

Guided piping

The liquid level can be measured without foam intrusion into piping.

Material to be eaily built up

PTFE coating antenna prevents the material from being built up on the antenna, and results in stable level measurement.

tion

Well experienced in Application Supports

Displays with 4 languages Outstanding operation

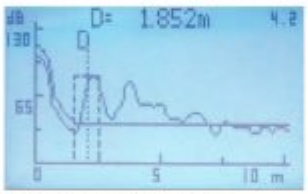
Easy Operation

Simple and precise operation possible. Site maintenance with simple hand communicator "GRAPHIC COM4". Remote operation with customer friendly software.

Local Operation

"GRAPHIC COM4", a detachable LCD adjuster, has a liquid crystal display with high-visibility. You can see waveforms in real time while monitoring, and you can adjust settings if needed.

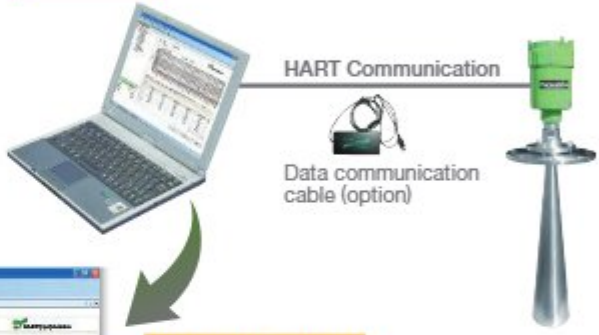
GRAPHIC COM4 on the sensor head

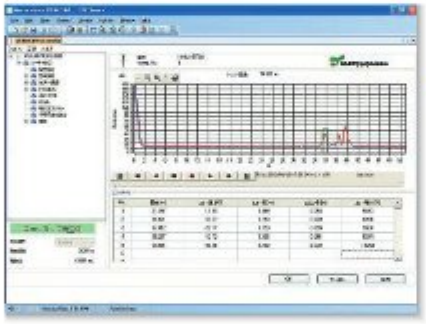


Real time indication for measurement situation

Remote Operation

The PC with adjustment software allows easy operation for complex parameter settings.





Software Features

- Real time indication for measurement situation
- Make adjustment
- Check waveforms while monitoring and store the data
- Record trends
- Languages: Japanese, English, Chinese, and Korean

Version upgrade

High measuring performance under any conditions

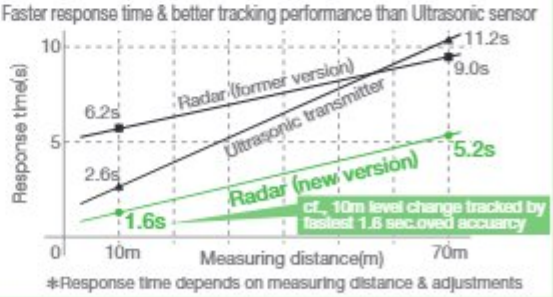
①Improved accuarcy

Double measuring accuracy!

Model	Before	New version
For powder H7、H3	±50mm	≤1.2m : ±20mm >1.2m : ±10mm
For liquid H2、H1、C1	±50mm	≤1.2m : ±30mm >1.2m : ±20mm

②Improved tracking speed

Faster response time & better tracking performance than Ultrasonic sensor



*Response time depends on measuring distance & adjustments

③Expanded allowable power supply

Reliable under unstable power circumstances where voltage fluctuates

LCD display	Before	New version
No LCD	DC20~32V	DC13~36V
With LCD	DC20~32V	DC16~36V

Remark: 20 -32V for Ex-proof type

④Wiring distance increased

Load resistance has improved from 499Ω to 655Ω!!
Max. wiring distance extended.

	Before	New version
Max. wiring distance	4.5km	7.5km

Conditions: Power supply DC24V, Load resistance 250Ω, Cable (AWG#18, dia.0.75mm², Load resistance 26Ω/km)

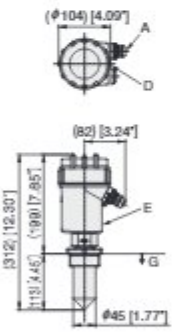
For Liquid		Specifications			
Model		MWLM-PR26C*	MWLM-PR26H*		
Product Code		MWLM-PR26C1G*	MWLM-PR26H1G	MWLM-PR26H2G*	MWLM-PR26H2F*
Antenna		Cone	Horn		
Power Supply		Standard: DC13 - 36V ※1 DC16V or more is required for LCD unit. Ex-proof: DC20 - 32V※2 Power supplied by safety barrier KFD2-STC4-Ex1			
Power Consumption		Standard type: Approx. 704mW, Explosion-proof: Approx. 540mW			
Mounting		G2 Thread	G1 Thread	G1 1/2 Thread	JIS5K50A Flange
Dead Zone		0.5m (1.64ft) below the antenna			
Max Measurable Distance		10.0 (33ft) from measuring reference zero point		20.0 (66ft) from measuring reference zero point	
Transmitting Frequency		Approx. 26GHz			
Transmitting Cycle		Every 83ms			
Beam Angle		Approx. 24 (approx. 48deg. including side beam)		Approx. 18 (approx. 36deg. including side beam)	
Resolution		1mm			
Allowable Fluctuation Rate		10cm/s			
Accuracy	Repeatability	Within 1.2m (3.94ft) or less: ±30mm (1.18in), Over 1.2m (3.94ft) or more: ±20mm (0.78in) or ±0.04% of measurement range (Whichever is greater)			
	Temp. Error	Standard: ±0.03 /10K, Ex-proof: 0.06%/6K			
Ambient Temperature	Housing	Standard: -40 +80 (-40 +176), With LCD: -20 +60 (-4 +140), Ex-proof: -20 +50 (-4 +122) 1 hour is required to warm up the device if the temperature is lower than -20 (-4).			
	Antenna	Standard: -40 +150 (-40 +302), Ex-proof: -40 +100 (-40 +212)			
Allowable Pressure		500kPa	1MPa		490kPa
Material	Housing	ADC			
	Antenna	PTFE	SUS304	SUS316L	
Protection		IP67 (Housing cover and lead outlet must be closed)			
Lead Outlet		1-G1/2 (Applicable cable size: ϕ8 to 12mm (0.31 to 0.47in)			
Output Signal		DC4 20mA×1 (Load resistance when 24VDC power supply is used: 499 Ω max), HART communication			
Integral Time		0 999s			
Mass		Approx. 1.9kg	Approx. 1.6kg	Approx. 1.9kg	Approx. 2.2kg
Explosion-proof construction		Intrinsically safe construction Ex ia B T4 X (TIIS)		Intrinsically safe construction Ex ia B T4 X (TIIS)	
Division of hazadous section	Housing	Zone1, Zone2		Zone1, Zone2	
	Antenna	Zone1, Zone2		Zone0, Zone1, Zone2	
Accessories (option)		LCD adjustment unit (GRAPHIC COM4) Data Communication cable (MHM-01) PC adjustment software (M-DTM) Safety barrier (KFD2-STC4-Ex1) is needed to use the explosion proof type. LCD display can't be used since it's a non explosion proof parts.			

※: Explosion Proof model has Ex written at the end of each model. Explosion proof structure is Ex ia B T4 (TIIS).

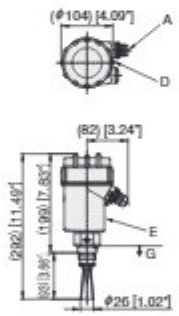
●Dimension mm [in]

Model : MWLM-PR26□□□

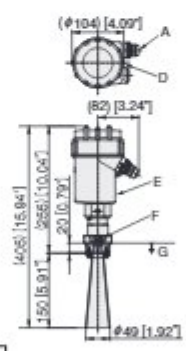
C1G



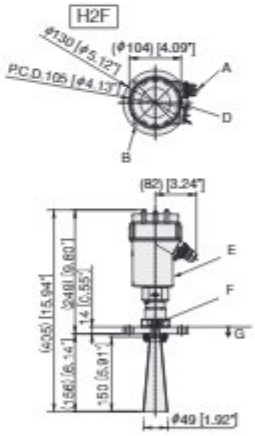
H1G



H2G

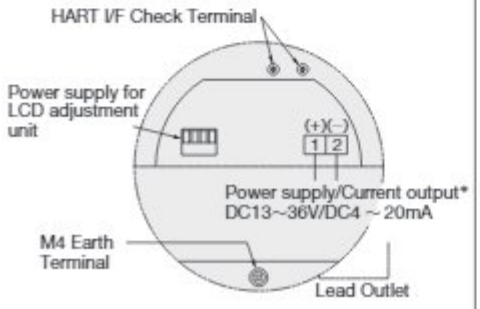


H2F



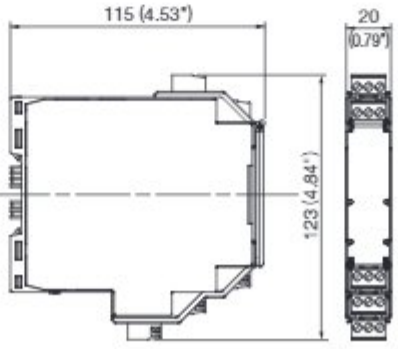
A	Lead outlet: G1/2	Cable: ϕ8-12mm [0.31-0.47"]
B	4×ϕ15 [0.59"] Mounting hole	
C	8×ϕ19 [0.75"] Mounting hole	
D	Earth terminal (M4)	Be sure to ground the earth terminal. (D-class grounding)
E	Housing	Housing rotatable in 310°.
F	Purge nozzle: Rc1/8	
G	Measurement reference zero poin	

Common for Liquid & Powder Terminal Block



※: Two wire shielded cable is recommended.
For explosion-proof type, provide the power through the Safety Barrier.

Specs & Dimensions of the safety barrier



Specifications

Power Specs.
- Power Supply: DC20 ~ 35V
- Power Consumption: 1.9kW

Input Specs.
- Input Signal: 0/4 ~ 20mA
- Available voltage: ≥16V at 20mA terminal 1+,3

Output Specs. (Safety area)
- Output signal: 0/4~20mA ; load 0~500Ω
- Pulsating Current: ≤50μA rms

Mass: 200g (0.44lbs)

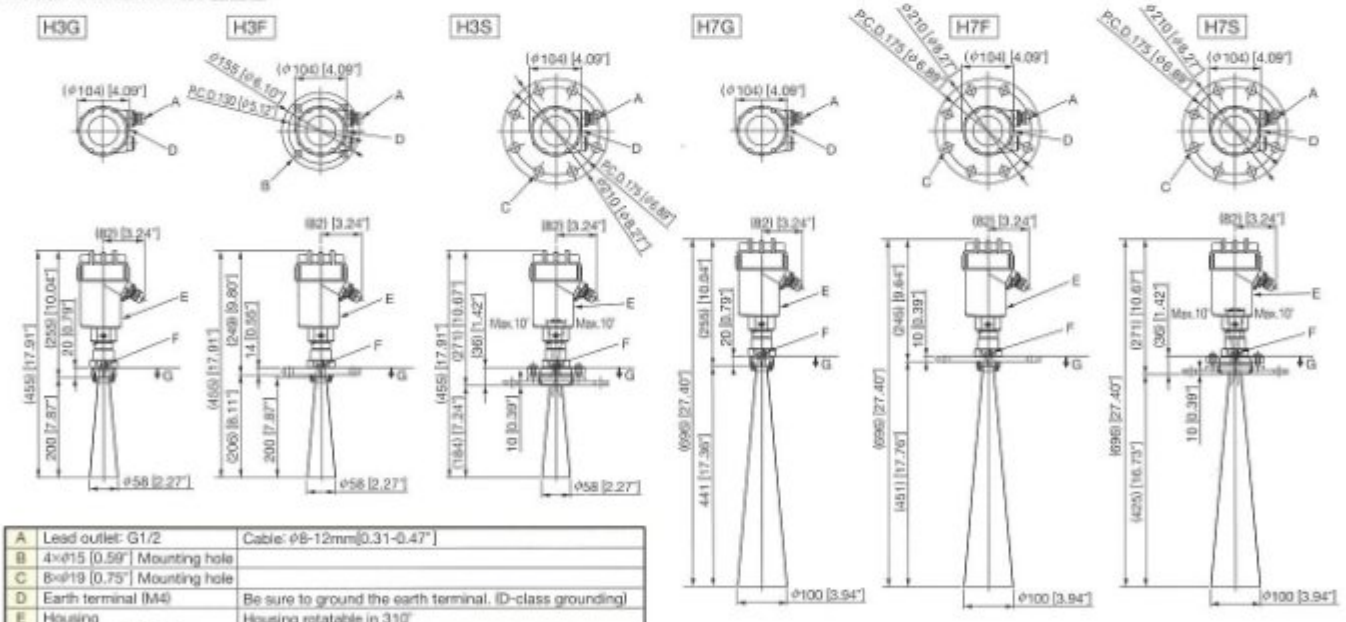
※This product uses a connection to the distributor or isolated interface(HART supported) and a card as a basic connection.
For other connection methods and for any questions, please contact us.

For Powder		Specifications					
Model		MWLM-PR26H*					
Product Code		MWLM-PR26H3G*	MWLM-PR26H3F*	MWLM-PR26H3S*	MWLM-PR26H7G*	MWLM-PR26H7F*	MWLM-PR26H7S*
Antenna		Horn					
Power Supply		Standard: DC13 - 36V ※1 DC16V or more is required for LCD unit. Ex-proof: DC20 - 32V※2 Power supplied by safety barrier KFD2-STC4-Ex1					
Power Consumption		Standard type: Approx.704mW, Explosion-proof: Approx.540mW					
Mounting		G1 1/2 Thread	JIS5K65A Flange	Swivelling Flange (Equivalent to JIS10K100A)	G1 1/2 Thread	Equivalent to JIS10K100A	Swivelling Flange (Equivalent to JIS10K100A)
Dead Zone		0.3m (0.98ft) below the antenna					
Max Measurable Distance		35.0m (115ft) from measuring reference zero point			70.0 m (330ft) from measuring reference zero point		
Transmitting Frequency		Approx. 26GHz					
Transmitting Cycle		Every 83ms					
Beam Angle		Approx. 14deg. (approx. 28deg. including side beam)			Approx. 8deg. (approx. 16deg. including side beam)		
Resolution		1mm					
Allowable Fluctuation Rate		10cm/s					
Accuracy	Repeatability	Within 1.2m (3.94ft) or less: ±30mm (1.18in), Over 1.2m (3.94ft) or more: ±20mm (0.78in) or ±0.04% of measurement range (Whichever is greater)					
	Temp. Error	Standard: ±0.03% /10K, Ex-proof: 0.06%/6K					
Ambient Temperature	Housing	Standard: -40 ~ +80℃ (-40 ~ +176℉), With LCD: -20 ~ +60℃ (-4 ~ +140℉), Ex-proof: -20 ~ +50℃ (-4 ~ +122℉) 1 hour is required to warm up the device if the temperature is lower than -20℃ (-4℉).					
	Antenna	Standard: -40 ~ +150℃ (-40 ~ +302℉), Ex-proof: -40 ~ +100℃ (-40 ~ +212℉)					
Allowable Pressure		1MPa	490kPa	500kPa	1MPa	250kPa	500kPa
Material	Housing	ADC					
	Antenna	SUS316L					
Protection		IP67 (Housing cover and lead outlet must be closed)					
Lead Outlet		1-G1/2 (Applicable cable size: ø8 to 12mm (0.31 to 0.47in)					
Output Signal		DC4 ~ 20mA × 1 (Load resistance when 24VDC power supply is used: 499 Ω max), HART communication					
Integral Time		0 ~ 999s					
Mass		Approx. 2.3kg	Approx. 4.4kg	Approx. 6.1kg	Approx. 2.7kg	Approx. 5.3kg	Approx. 6.5kg
Explosion-proof construction		Intrinsically safe construction Ex ia ⅡB T4 X (TIIS)					
Division of hazadous section	Housing	Zone1, Zone2					
	Antenna	Zone0, Zone1, Zone2					
Accessories (option)		· LCD adjustment unit (GRAPHIC COM4) · Data Communication cable (MHM-01) · PC adjustment software (M-DTM) Safety barrier (KFD2-STC4-Ex1) is needed to use the explosion proof type. LCD display can't be used since it's a non explosion proof parts.					

※: Explosion Proof model has Ex written at the end of each model. Explosion proof structure is Ex ia ⅡB T4 (TIIS).

●Dimension mm [in]

Model : MWLM-PR26□□□



A	Lead outlet: G1/2	Cable: ø8-12mm[0.31-0.47"]
B	4×ø15 [0.59"] Mounting hole	
C	8×ø19 [0.75"] Mounting hole	
D	Earth terminal (M4)	Be sure to ground the earth terminal. (D-class grounding)
E	Housing	Housing rotatable in 310°
F	Purge nozzle: Rc1/8	
G	Measurement reference zero poin	

Caution
●Read the instructions to ensure correct and suitable application of products.
●Contact our nearest sales office when using our products for any systems used in situations which may be life threatening.

Distributor

ISO9001 ISO14001
本社（HEAD OFFICE）

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