

RADAR TYPE LEVEL METER
(Time Domain Reflectometry)

REFLEX RADAR TDR-VF7



SOLUTION NOW COMES TRUE!!

Micro pulses are sent toward a product to be measured via a probe, and it can reliably measure the interface of liquids as well as levels without being affected by dusts, paper, or obstacles!!

Micro-impulse Level Meter

VF7 SERIES OF TDR RADAR SYSTEM

MICRO PULSES ARE SENT TOWARD A PRODUCT TO BE MEASURED ALONG A CABLE CONDUCTOR OR A ROD, FROM WHICH THEY ARE REFLECTED BACK. IT MEASURES THE TIME BETWEEN EMISSION AND RECEPTION WHICH IS PROPORTIONAL TO THE DISTANCE. THIS TECHNOLOGY HAS THE ADVANTAGE OF BEING NO LOSS OF MICRO WAVES AND BEING UNINFLUENCED BY THE ENVIRONMENT. IT IS EXTREMELY EFFECTIVE WHEN MEASURING IN A SMALL VESSEL OR ANY VESSELS CONTAINING FOREIGN OBJECTS AND IN OTHER APPLICATIONS WITH DUSTS AND VAPOR.

FEATURES

It can be used for powders, solids, liquids, slurries and so on.
 It can detect interface on liquids.
 It may not easily be affected by fouling.
 It may not be affected by variations of property or process conditions.
 It can measure in a vacuum, or in high temperature and pressure
 Longer measuring range (Max. 35m)
 Conversion of Level, Distance and Volume is easier.
 With HART Protocol options, it is possible to do remote programming with PC.
 Hazardous area ATEX, EExd and EExia.

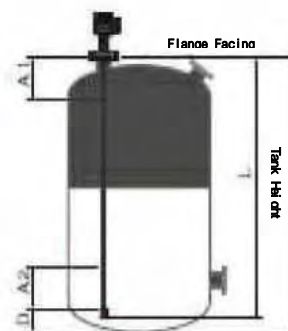
OPERATING PRINCIPLE

The device emits electromagnetic pulses to a sensor probe, which travel at a high speed along a cable conductor toward the product to be measured. Upon reaching its surface, the pulses are reflected back to the sensor. The instrument measures the time between emission and reception which is proportional to the distance.



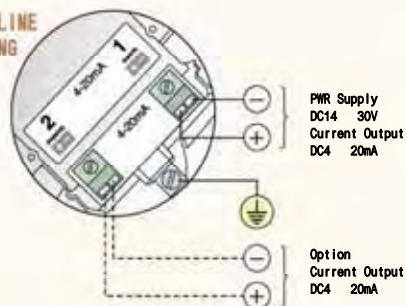
CONDITIONS ON MEASURING RANGE

- A1: TOP BLOCKING DISTANCE (minimum distance from flange to top limit of the measuring range)
 A2: BOTTOM BLOCKING DISTANCE (length at the end of probe where measurement is not possible)
 D: NON-MEASUREMENT ZONE
 Counterweight, Turnbuckle and so on (dependant on the components)
 L: PROBE LENGTH
 The length specified by the customer in the order including the counterweight.

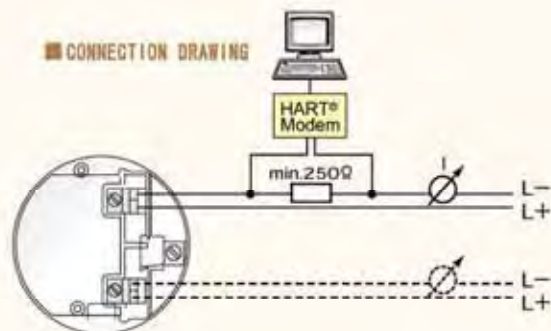


PROBES	MAX MEASURING RANGE L	TOP DEAD A1		BOTTOM DEAD A2	
		Zone r= 80	Zone r= 23	Zone r= 80	Zone r= 23
Single Rod 8	4000	200	250	10	50
Double Rod 8	4000	125	165	10	50
Coaxial Rod 22	6000	10	50	10	50
Single Cable 4	35000	200	250	10	50
Single Cable 8	35000	200	250	10	50
Double Cable 4	35000	125	165	10	50

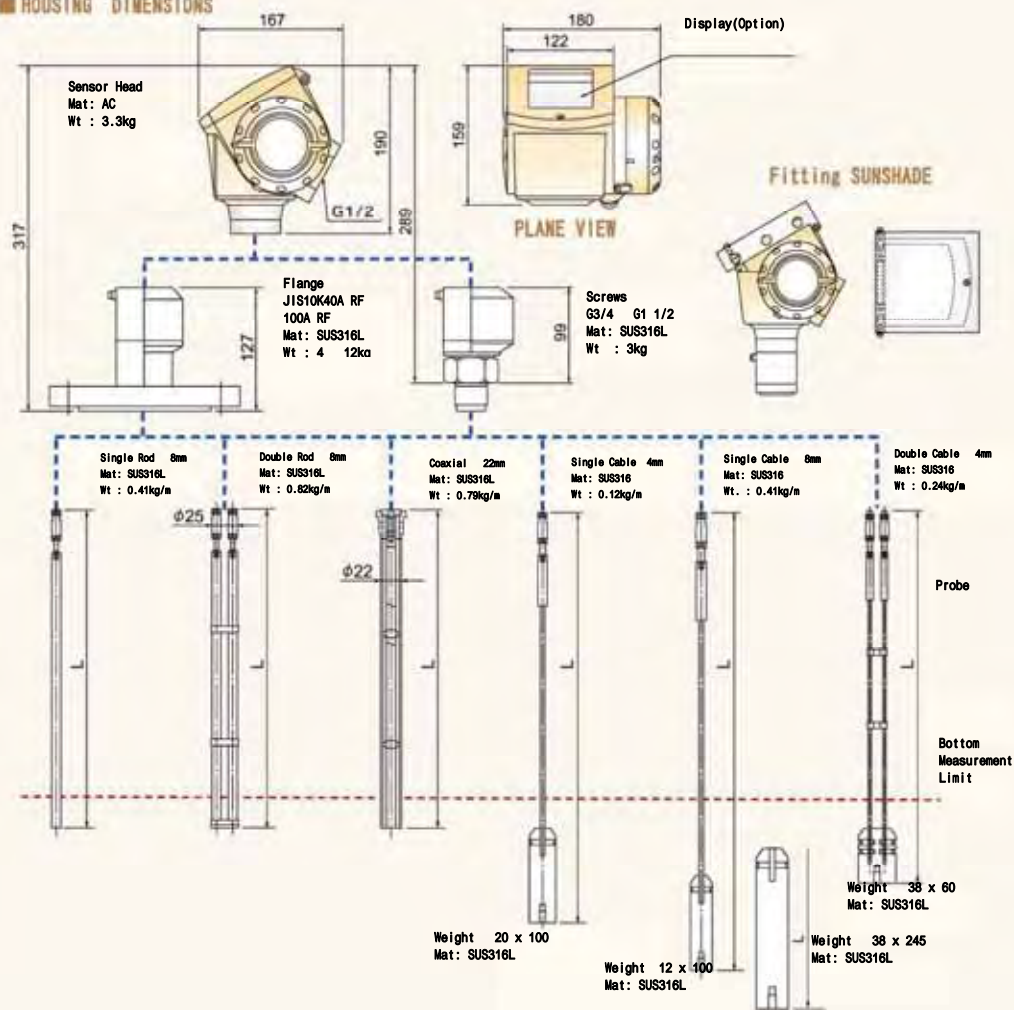
CROSSLINE DRAWING



CONNECTION DRAWING



HOUSING DIMENSIONS



PROGRAMMING

With a setup display on the head and HART Protocol options, it is possible to do remote programming with PC and to monitor.



Sensor-head Display(Optional)



PC Display



STANDARD SPECIFICATIONS

Power Supply (Two Wire)	Non Explosion-proof/ EExi	24VDC (DC14 30V)
	EExd	24VDC (DC20 36V)
Max Measuring Range	Single Rod 8	4m
	Double Rod 8	4m
	Coaxial Rod 22	6m
	Single Cable 4	35m
	Single Cable 8	35m
	Double Cable 4	35m
Output	Output 1 (Max Load Resistance 350)	DC4 20mA HART (Max Load Resistance350)
	Output 2 (Option: EX No)	DC4 20mA (Max Load Resistance350)
	Error Output	DC3.6mA or DC22mA or hold
	Accuracy	0.05%
	Resolution	± 2 μA
Accuracy	Liquids	± 3mm
	Powders	± 20mm
	Interface	± 10mm
	Resolution	± 1mm
Conditions	Ambient Temperature	-40 - +80 (EExi: -40 - +60)
	Storage Temperature for Instruments	-40 - +85
	Flange Temperature	-40 - +200 (EEx: +150)
	Withstanding Pressure	-0.1MPa 4MPa
	Housing	IP66 NEMA6 6X

DESIGNATION OF MODEL

VF7□□□□

Shape of Weight

- 0 No weight
- 1 Weight 12 - 100mm (Single Cable 8)
- 2 Weight 38 - 245mm (Single Cable 8)
- 3 Weight 20 100mm (Single Cable 4)
- 4 Weight 38 60mm (Double Cable 4)

Shape of Probe

- 0 Single Rod 8
- 1 Double Rod 8
- 2 Coaxial Rod 22
- 3 Single Cable 4
- 4 Single Cable 8
- 5 Double Cable 4

Mounting Portion of Probe

- 0 SUS316L(Rod Probe) SUS316 (Cable Probe)
- 1 Hastelloy C (Rod Rope only)

Explosion-proof

- 0 Non Explosion-proof
- 2 ATEX EExia IIC T6

製造元 HYCONTROL

Line of business

- 回転式レベルスイッチ
- 振動式レベルスイッチ
- 振子式レベルスイッチ
- 音波式レベルスイッチ
- 静電容量式レベルスイッチ
- 静電容量式近接センサ
- 静電容量式レベルメータ
- ダイヤフラム式レベルスイッチ
- チルトスイッチ
- リーク式レベルスイッチ
- マイクロウェーブスイッチ
- サウンディング式レベルメータ
- フロースイッチ
- 電極式レベルスイッチ
- フロートスイッチ
- フロート式レベルメータ
- 超音波式レベルメータ
- コンベア周辺機器
- ダストモニタ
- ジルコニア酸素濃度計
- レーザー式レベルメータ
- 電波式レベルメータ
- 液体濃度・濁度計
- 超音波流量計

※ご使用に際しては取扱説明書を必ずお読み下さい。
※予告なく仕様変更することがありますので予めご了承下さい。

Nuclear Power Generation to Rice Milling
All-round Manufacturer of Level Controllers for Powder, Granules and Liquid

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