LT10SR-4700 Intelligent Level Transmitter

Features

- 4mA～20mA DC 2-wire current output;
- Digital temperature compensation and linearity correction;
- RS485 communication interface(Custom protocol) or
  HART®communication protocol(optional);
- Netting application;
- Full stainless steel construction, compact size, light weight;
- Special requirement available;
- RoHS Certificate;
- Intrinsic safe ex-proof version conforming to GB3836.4 Exia Ⅱ BT6
  Ga Regulation; Ex-proof Certificate is issued;
- Marine type products accord with CCS classification of sea-going
  steel ships of the rules "(2015) the requirements, has obtained the type approval.

Introduction

LT10SR-4700 level transmitter is the full stainless steel construction and full-sealed submersible intelligent level transmitter with high accuracy. It uses highly reliable and stable pressure sensor, intelligent processing circuit, precise digital temperature compensation and linearity correction technics for production. The water-proof cable connects with housing sealed, with vented tube putting in, the transmitter could be used in the water or liquid in a long time. Integrated construction and standard output signal could provide easy operation and good automatic control. With 2-wire working, compact size, light weight and easy installation and operation, it is widely used for industry field instead of normal 2-wire 4~20mADC analog output transmitter.

Specifications

Basic range（mH$_2$O）	3.5	7	10	20	35	70	100	200
Overpressure（mH$_2$O）	5	10	15	30	50	100	150	300

Note: The min.shrinked available range is 1/5 of basic range;

　For the other pressure range between min.range and max.range, but not indicated on the above table, we enlarge the above basic pressure range to produce (overpressure unavailable);
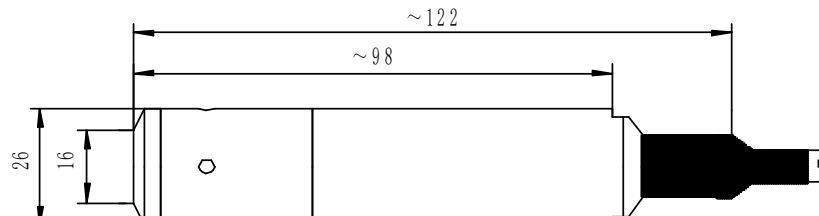
Total accuracy ①③	±0.075%FS（min.）　　±0.1%FS（typ.）　　±0.25%FS（max.）
Power supply	10V～28VDC（RS485）, 12V～30VDC（HART®） 10V～12VDC（The Ann model, the security gate power supply）
Output	4mA～20mADC ·RS485 communication interface(Custom protocol) or HART®communication protocol
Compensation temp. ②	-10℃～70℃
Operation temp.	-10℃～70℃，-20℃~60℃(Intrinsic safe)
Storage temp.	-20℃～85℃
Stability	±0.2%FS/year

Load	4mA～20mADC output,（U-12V）/0.02A（Ω）
	RS485 bus line could connect with 99 transmitter
Insulation	100MΩ/50V
Shock	20g，20Hz～5000Hz
Impact	20g，11ms
Protection	IP68(Transmitter part);IP65(Junction box part)
Media compatibility	Diaphragm: stainless steel 316L
	Housing: stainless steel 1Cr18Ni9Ti
	O-ring: Viton
Weight	~250g

①Total accuracy: including non-linearity, hysteresis, repeatability and thermal error;

②For special temperature requirement, please contact with our company;

③For pressure range 3.5mH$_2$O ad 7mH$_2$O, after shrinking, the total accuracy is±0.5%FS.
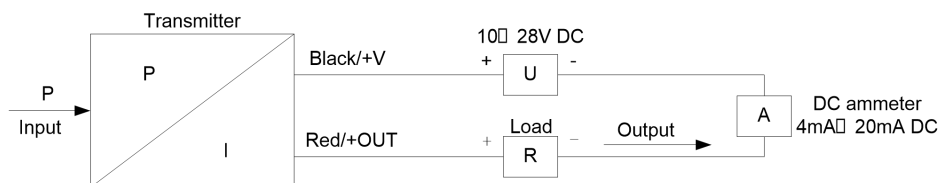
Outline Construction

(Unit: mm)

Electric Connection

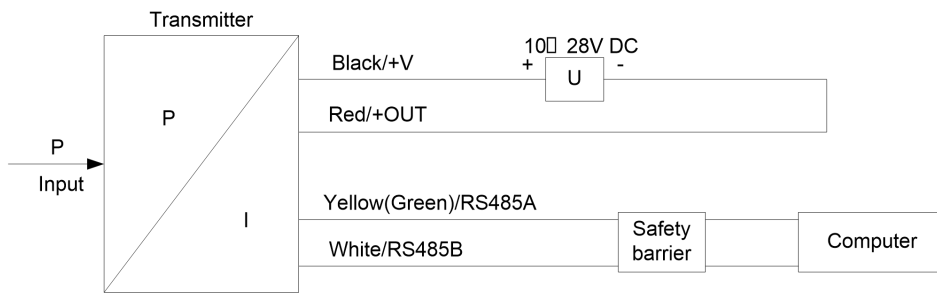Transmitter connecting the outsude by cable or connection box;

Wire color	Terminal	Connection
Black	2	+V
Red	1	OUT/GND
Yellow(Green)	3	RS485A
White	4	RS485B
Blue	-	⏚
Note: conventional products are not grounded, explosion-proof products must be grounded		

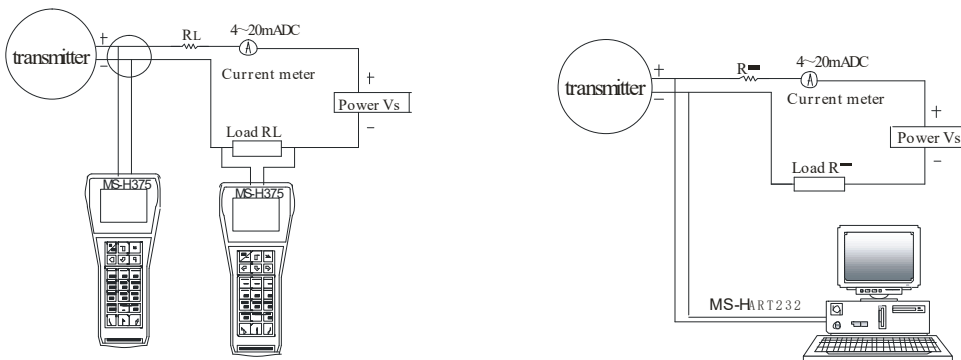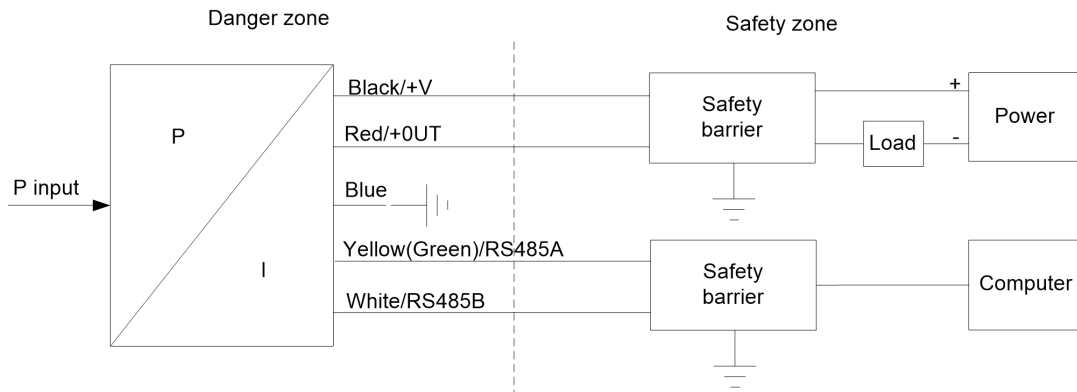a) Electric connection for transmitter with 2-wire 4～20mADC output:

b) Electric connection for transmitter with RS485 interface:

Transmitter

P

P
Input

P

I

Black/+V   10～28V DC   +   U   -

Red/+OUT

Yellow(Green)/RS485A   Safety barrier   Computer

White/RS485B

c) Wiring for HART®transmitter connecting with hand-communicator:

transmitter   RL   4~20mADC
                                Current meter   +
                                Power Vs
                     Load RL   -

MS-H375   MS-H375

transmitter   R   4~20mADC
                                Current meter   +
                                Power Vs
                     Load R   -

MS-HART232

d) This Ann explosion-proof type electrical connection methods are shown below:

Danger zone   Safety zone

P

P input

I

Black/+V   Safety barrier   +   Power
Red/+0UT   Load   -
Blue
Yellow(Green)/RS485A   Safety barrier   Computer
White/RS485B

ExiaIIBT6 Ga   ExiaIIC
Transmitter Ex-proof parameter: Safe barrier's ex-proof parameter:
Ui：12.4VDC   Ii：140mADC   Uo：12.4VDC   Io：140mADC   Po：0.43W
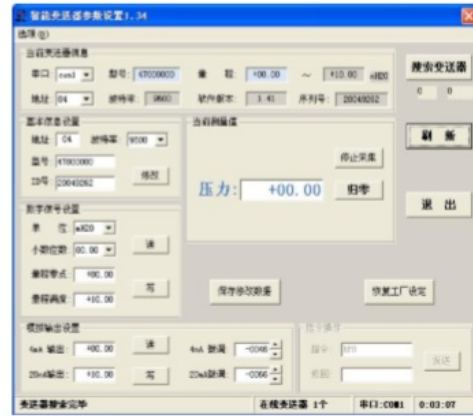Li：0mH   Ci：1.049μF   Pi：0.43W

Assistant Software

a) Transmitter Software (RS485 Interface type)

MS Setonline Software

Through RS232/485 conversation module, the user could read inner basic information for RS485 interface transmitter (including level range,compensated temp.range, version code, etc.) and display actual level, set new zero, analog output and deivce

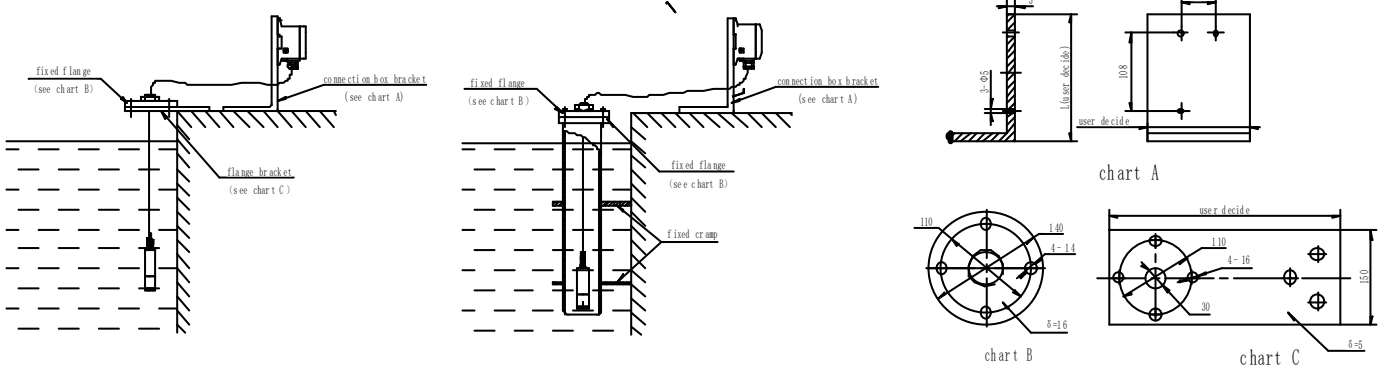**Note:** Software "MS Setonline" could be downloaded from our website www.microsensor.cn

b) Transmitter Software (HART®protocol)

MS-C100ASoftwareThrough MS-HART 357 conversion module, the user could calibrate and adjust HART ® transmitter.

Application Example

chart A

chart B

chart C

Order Guide

LT10SR-4700	Intelligent Level Transmitter					
	Range	Pressure range：0m～3.5m…200mH2O				
	[0m～XmH$_2$O]L	X=actual pressure range, L=cable length , suggested L-X=（1～2）m				
		Code	Output signal			
		E	4mA～20mADC			
		R$_4$	RS485 communication interface, Custom protocol			
		R$_8$	RS485 interface, MODBUS communication protocol			
		H	HART$^®$ communication protocol (No explosion proof)			
			Code	Construction material		
				Diaphragm	Interface	Housing
			22	SS 316L	SS	SS
			24	SS 316L	SS 316L	SS 316L
				Code	Others	
				C$_1$	M20×1.5 male, face type seal	
				C$_5$	M20×1.5 male, waterline seal	
				Yb	Aluminum connection box without display	
				Yc	MS200 water-proof connection box（default）	
				Yd	PD140 lightening-proof protection device	
				Ye	connection box(with display or without	
				F$_1$	Fixed flange	
				i	Intrinsic safe version ExiaⅡBT6 Ga	
				T	Ship-use	
LT10SR-4700 [0m～10mH$_2$O]12	ER$_4$	22	Yc	the whole spec		

Notes

1. If the user has no special requirement for cable, we provide default PVC cable;
2. If the user has special requirement, please feel free to contact our company.