Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

Technical Information

Analog Transmitter AT500

Alarm Transmitter for Mechanical level Gauges

Application

AT500 analog transmitter is used in combination with the LT11/12/14/16 float tank gauge.

When the float tank gauge indicator reaches the alarm setting point, AT500 transmitter outputs an alarm contact signal by operating a micro switch.

AT500 is a limit contact unit that has six contacts for controlling the level of the tank contents.
The flame proof enclosure allows installation in hazardous areas, such as in the petrochemical industry.

Features and benefits

- Simple, trouble-free operations
- Various types of contact output are available.
- Available as a flameproof type for level control of flammable and explosive liquids
- Limit contact set points can be freely adjusted over a wide measuring range, enabling precise liquid level control.
- Easy-to-control upper and lower alarms, pumps, and valves by using the contact output signal of AT500 transmitter

TI 00032G/08/EN/14.13
71220770

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Table of Contents

Function and System Design

Operating System

AT500 transmitter operates on a simple mechanical basis. The drive shaft of the float tank gauge operates coupling of the transmitter, gear, and preset cam wheels, which, in turn, activate the micro switches to provide the limit contacts. A maximum of six limit contacts are available.

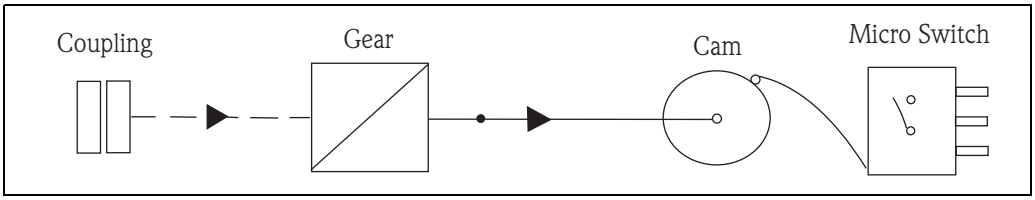


Figure 1: Operation Principle

Measuring System

AT500 transmitters are used in mounting onto the rear cover of the float tank gauge of the LT and LTC series. Wiring and power supply requirements for AT500 are dependent on the type of output signal that is required by each model.
The measuring range and limit contacts are pre-set before delivery and can be adjusted later.

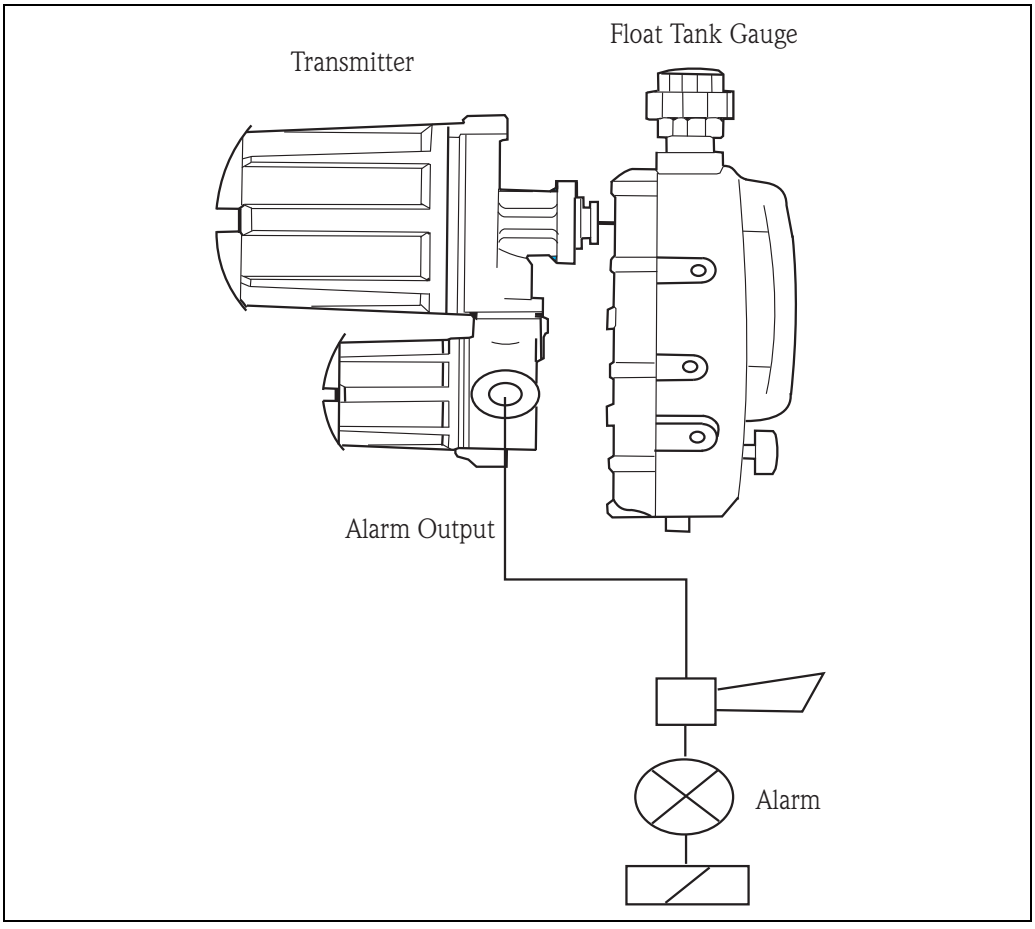
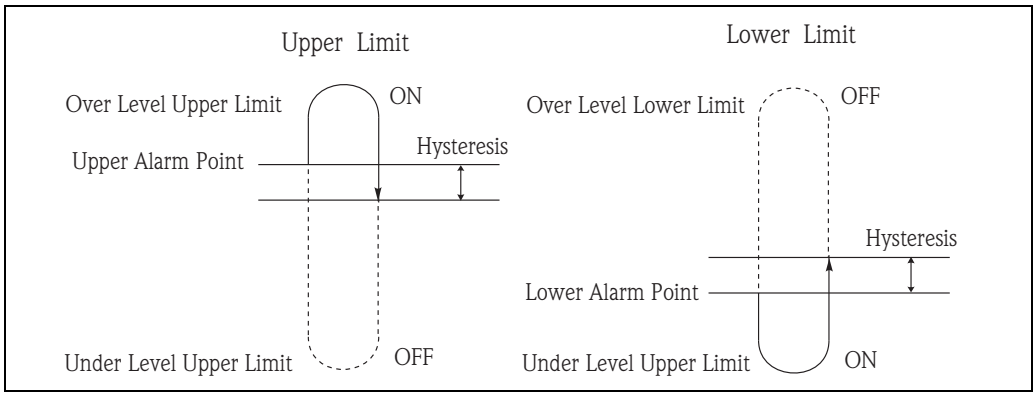


Figure 2: Measuring System

Technical Data

Contact Rating	Alarm 2 points: AC max. 220V, max. 4.2A, AC max. 1050VA, DC max. 180W Alarm 4 points: AC max. 220V, max. 2.8A, AC max. 700VA, DC max. 120W Alarm 6 points: AC max. 220V, max. 2.8A, AC max. 700VA, DC max. 120W (A, B contact) AC max. 220V, max. 2.2A, AC max. 550VA, DC max. 94W (C contact)
Accuracy	±0.5% (for full span)
Measuring Range	2.5m, 5m, 10m, 20m, 30m
Hysteresis	Within 2% of measuring range
Cable Entry	Flameproof with cable gland (B): G1 TF22-13, G1 TF22-15, G1-1/4 TF22-13 Flameproof (E): G3/4 , G1-1/2 Weather proof (W): G3/4 , G1-1/2, NPT3/4, NPT1, M25
Switch Operation	 Figure 3: Switching Operation in A Contact
Transmission Line (per one contact)	A contact (normal open), B contact (normal close): two lines C contact (transfer): two or three lines
Alarm Contact	2, 4, 6 points, Micro switch (SPDT) Select any of the following contact: A contact (normal open) B contact (normal close) C contact (transfer)
Ambient Temperature	Weather proof: -20 to +60°C Flame proof: -10 to +40°C
Storage Temperature	-20 to +60°C
Protection	Weather proof : IP65 Flame proof : d2G4
Color	Silver
Weight	Weather proof: approx. 7kg Flame proof: approx. 13kg

Mechanical Condition

Flame Proof

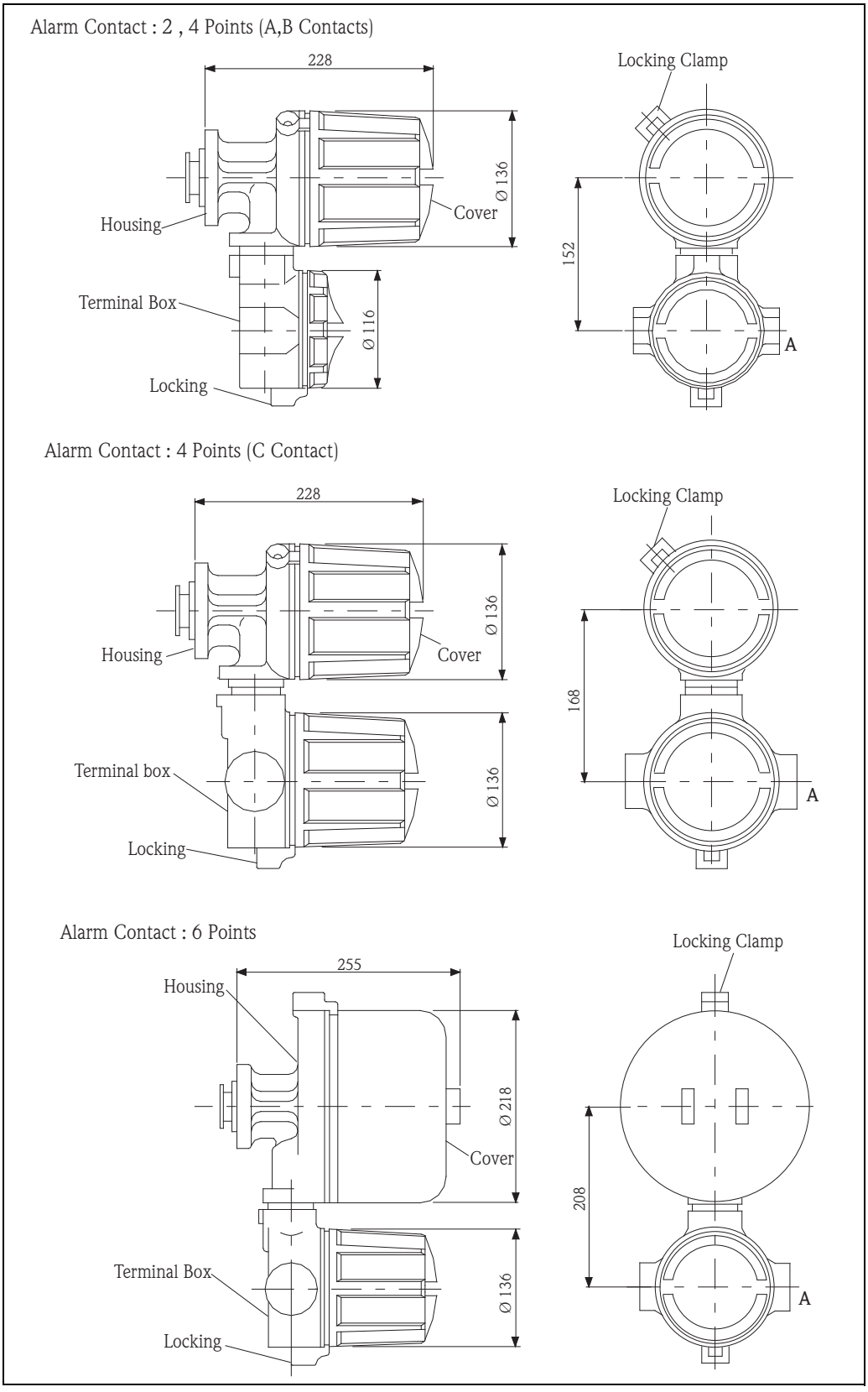


Figure 4: Flam Proof Specification

Weather Proof

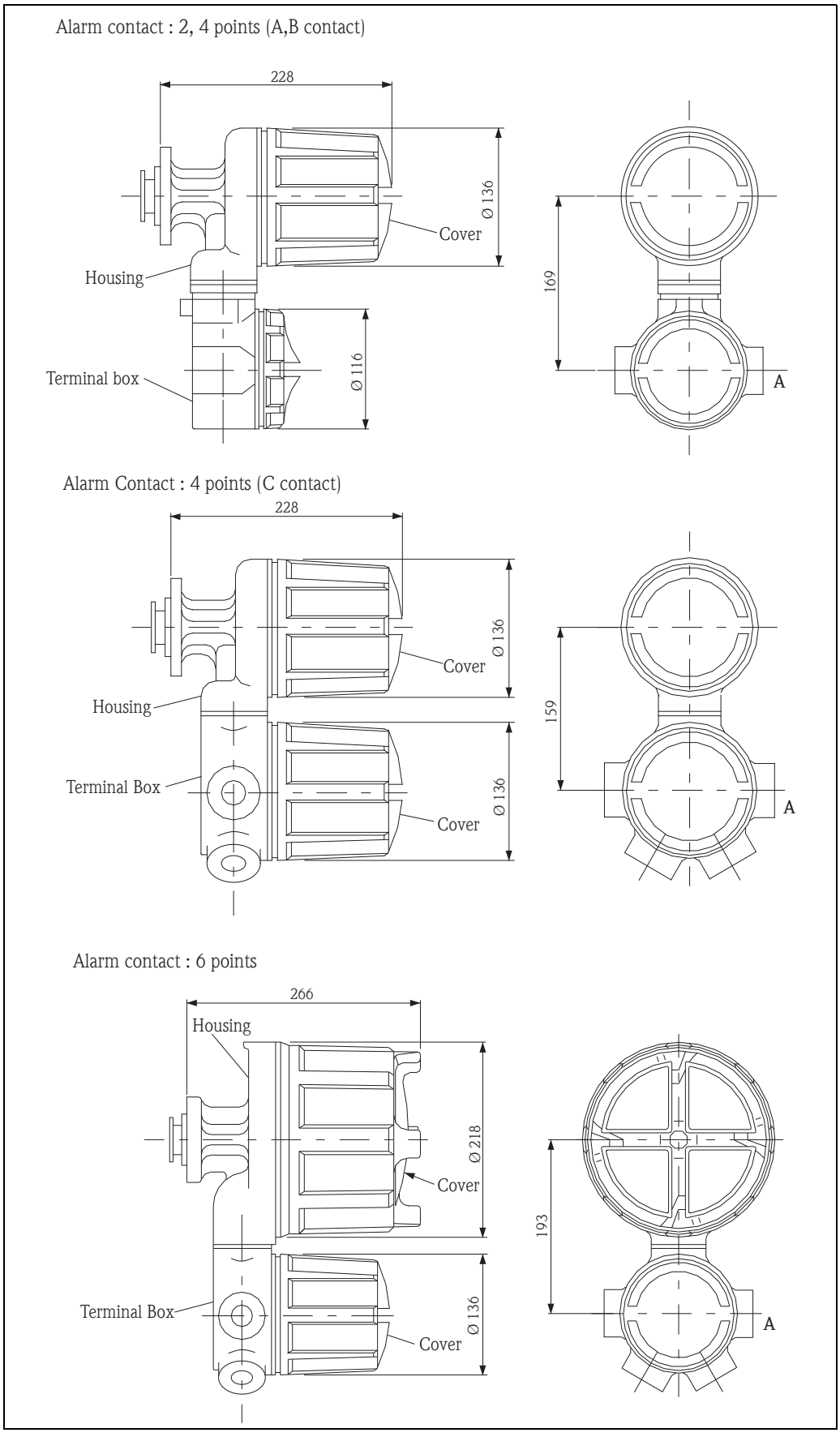


Figure 5: Water Proof Specification

Cable Entry

070:Cable Entry	A	B
A	Thread G 3/4	
B	Thread G 3/4	Thread G 3/4
C	Thread G 1-1/2	
D	Thread G 1-1/2	Thread G 3/4
E	Gland G 3/4 TF16-11	
F	Gland G 3/4 TF16-11	Gland G 3/4 TF16-11
G	Gland G1 TF 22-15	
H	Thread NPT1	
K	Thread M25	
M	Gland G1-1/4 TF28-20	Gland G 3/4 TF16-11
Q	Thread NPT3/4	
R	Thread NPT 3/4	Thread NPT 3/4

Operating Conditions: Installation

Installation of Transmitter

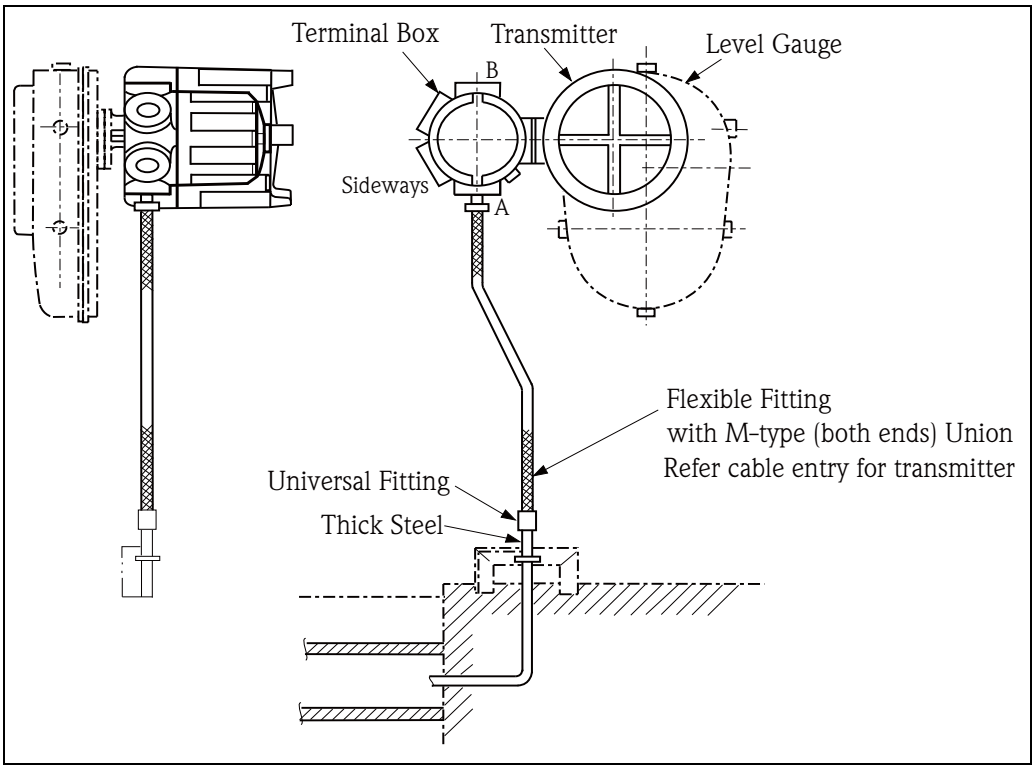


Figure 6: Transmitter and Float Tank Gauge

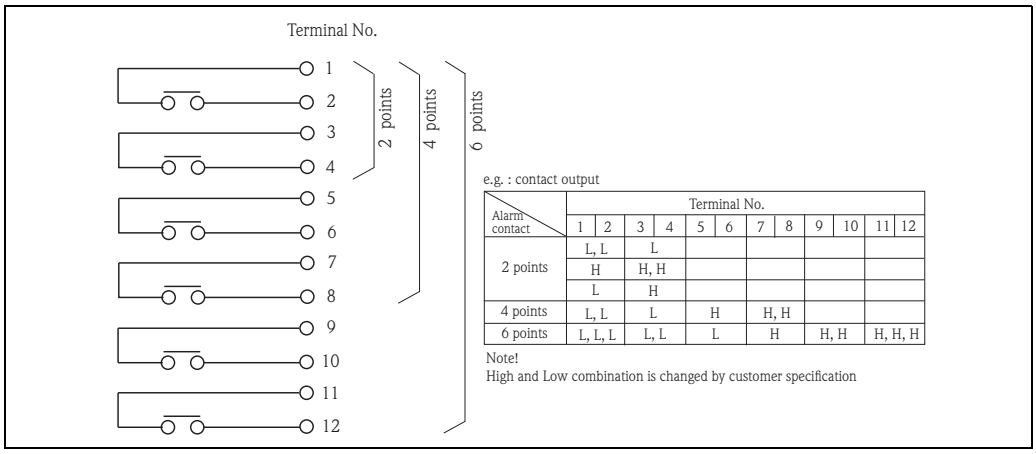
Caution!
When installing the transmitter with cable grands, ensure to use cable glands which are attached to the transmitter. Select an option for cable glands in the feature 070 of the order structure (refer to "2.2 Ordering Information").

Operating Conditions : Wiring

Alarm Contact

Use IV 1.25^2 wire (JIS600V) or more.

Contact A (Normal Open)



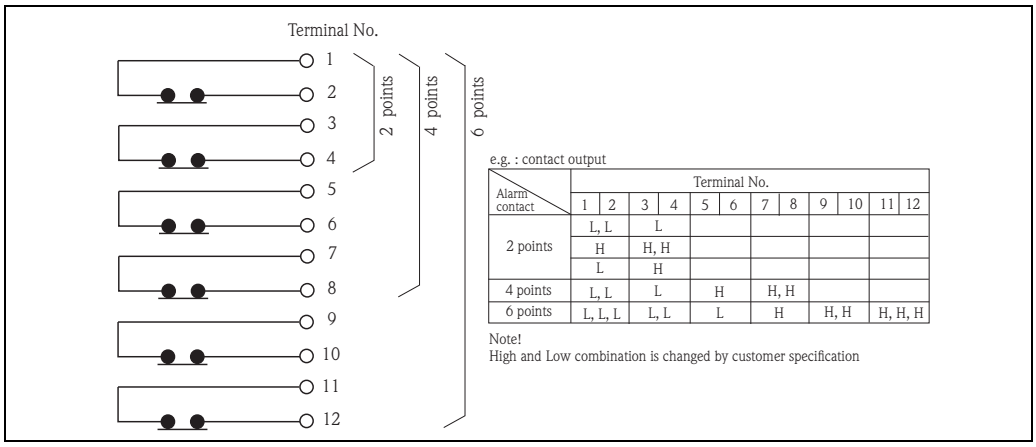
e.g. : contact output

Alarm contact	Terminal No. 1	2	3	4	5	6	7	8	9	10	11	12
2 points	L, L		L									
	H		H, H									
	L		H									
4 points	L, L		L		H		H, H					
6 points	L, L, L		L, L		L		H		H, H		H, H, H	

Note!
High and Low combination is changed by customer specification

Figure 7: Contact A

Contact B (Normal Close)



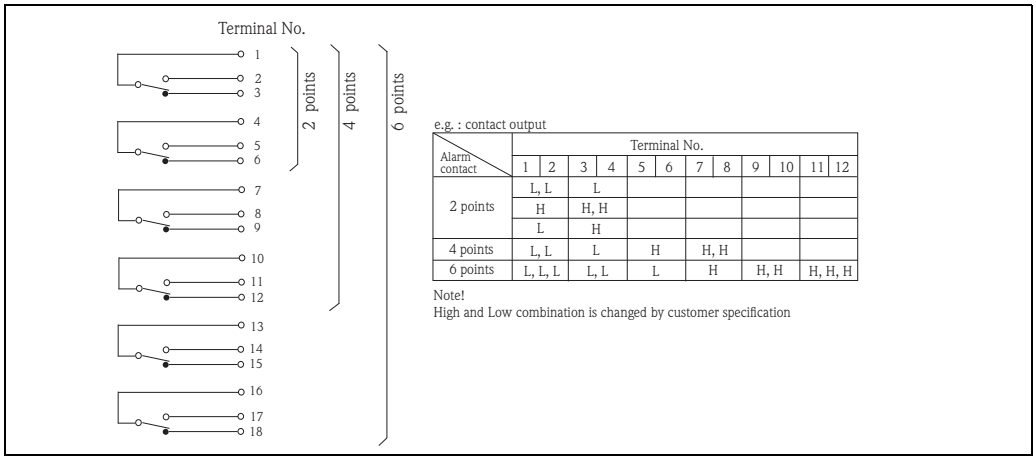
e.g. : contact output

Alarm contact	Terminal No. 1	2	3	4	5	6	7	8	9	10	11	12
2 points	L, L		L									
	H		H, H									
	L		H									
4 points	L, L		L		H		H, H					
6 points	L, L, L		L, L		L		H		H, H		H, H, H	

Note!
High and Low combination is changed by customer specification

Figure 8: Contact B

Contact C (Transfer Contact)



e.g. : contact output

Alarm contact	Terminal No. 1	2	3	4	5	6	7	8	9	10	11	12
2 points	L, L		L									
	H		H, H									
	L		H									
4 points	L, L		L		H		H, H					
6 points	L, L, L		L, L		L		H		H, H		H, H, H	

Note!
High and Low combination is changed by customer specification

Figure 9: Contact C

Certificates and Approval

Ex Approval	**TIIS, with cable gland** TIIS d2G4
	TIIS, Cable entry TIIS d2G4
Protection Class	IP65

Order Information

AT500

010	**Alarm Output:**	
	2	2-point
	4	4-point
	6	6-point
020	**Function:**	
	0	Basic version
	1	Special version, TSP-no. to be spec.
030	**Approval:**	
	B	Flame proof d2G4,cable gland, TIIS
	E	Flame proof d2G4, TIIS
	W	Weather proof IP65
	Y	Special version, TSP-no. to be spec.
040	**Level Gauge Combination:**	
	1	LT1100/1200/3100/3200 R:300mm Low pressure LT version
	2	LT1400/1600/3400/3600 R:300mm High pressure LT version
	3	LTC 2100 L:600mm
	4	LTC 2230/2240 R:600mm
	9	Special version, TSP-no. to be spec.
050	**Measuring Range:**	
	1	2.5m (not available for LTC)
	2	5m
	3	10m
	5	20m
	6	30m
	9	Special version, TSP-no. to be spec.
060	**Alarm Contact:**	
	1	A = normal open
	2	B = normal close
	3	C = transfer contact
070	**Cable Entry:**	
	A	Thread G3/4
	C	Thread G1-1/2
	G	Gland G1, TF22-13
	H	Gland G1, TF22-15
	K	Gland G1-1/4, TF28-21
	R	ThreadNPT3/4
	S	Thread NPT1
	T	Thread M25
	Y	Special version, TSP-no. to be spec.
080	**Color:**	
	0	Sliver
	9	Special version, TSP-no. to be spec.
AT500-		Complete product designation

Documentation

Technical Information	**TI044N** Float Tank Gauge LT1100 series
Operating Instructions	**BA01012G** Analog Transmitter AT5000 AT500

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