

# 2281 Multipoint Switch



The Multipoint Switch is based on the conductivity principle and can be applied to liquids with conductivity higher than 10  $\mu\text{S}/\text{cm}$ .

The probes have to be placed into the tank for level detection. The probe length should be in accordance with the level to be detected. Filling liquid in the tank will change the electrical conductivity between the reference probe and the outer probes. The established connection will be converted and activate a relay providing the output.

## Features

- Easy on site probe length configuration
- Fast installation due to 2 to 4 individual switching points integrated in one sensor
- Up to 4 relays for pump and valve control
- Adjustable sensitivity
- Adjustable delay time



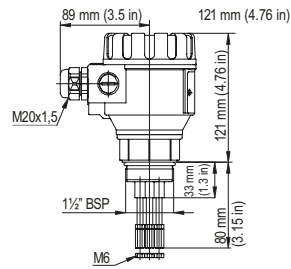
## Applications

- Potable Water
- Cooling Water
- Chemicals
- Pump Control

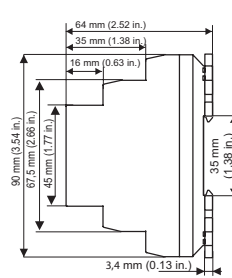


[www.gfps.com/level](http://www.gfps.com/level)

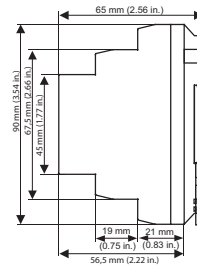
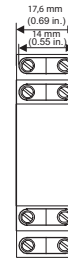
## Dimensions



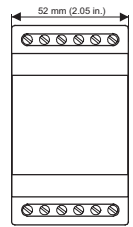
Multiprobe sockets:  
 2281-S-BT-2; 2 electrodes  
 2281-S-BT-3; 3 electrodes  
 2281-S-BT-4; 4 electrodes



Conductive Level Control  
 Switch Type 2281-1-Relay;  
 1 SPDT Relay



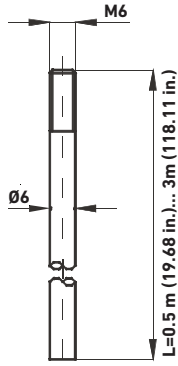
Conductive Level Control  
 Switch Type 2281-2-Relay;  
 2 SPDT Relay



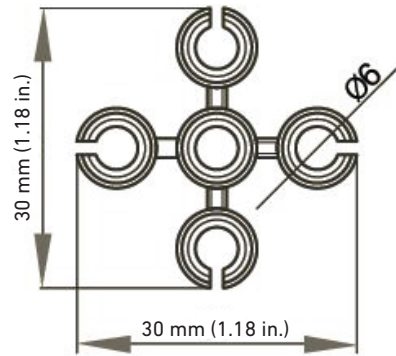
## Specifications

General			
Type	2281-Y-YY-Y	2281-1-Relay	2281-2-Relay
Probes	2, 3, 4		
Environmental			
Process Temperature	max. +80 °C (176 °F)		
Ambient Temperature	-20 °C...+50 °C (-4 °F...+122 °F)		
Process Pressure (absolute)	0.1 MPa (1 bar) 14.5 psi		
Enclosure			
Enclosure Material	PBT		
Process connection material	PP		
Probe socket material	Stainless Steel 1.4571		
Ingress protection	IP65, NEMA 4	IP20, NEMA 1	
Process Connection	1 1/2 in.		
Probes			
Material	Stainless Steel 1.4571		
Standards Lengths Available	0.5 m (19.69 in.), 1.0 m (39.37 in.), 1.5 m (59.06 in.) (72 in., 108 in. on request)		
Please contact GF for special lengths up to 3 m			
Probe separator			
Material	PP		
Electrical			
Probe Voltage		3.5 V AC	5 V AC
Probe Current		< 0.2 mA AC	< 1 mA AC
Response		max. 400 ms	
Delay		Adjustable: 0.5...10 s	
Relay Output		1x SPDT	2x SPDT
Switching Voltage		250 V AC1, 24 V DC	
Switching Current		8 A AC1	16 A AC1
Switching Power		2500 VA AC1, 240 W DC	4000 VA AC1, 384 W DC
Power Supply		24 V...240 V AC / DC	
Mechanical Connection		DIN EN 60715 rail	
Electrical Connection		Class II	Class III
Standards and Approvals			
General Approvals		CE, RoHS	

# Accessories



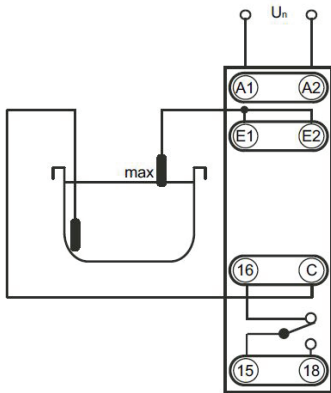
Probe dimension



Probe separator 2281-5 spacer, to be used every 0.5 m (19.69 in.)

# Wiring

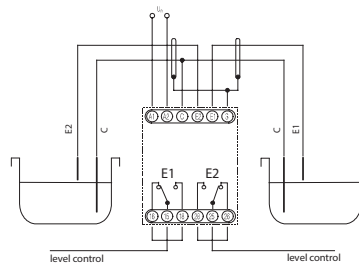
1 SPDT Relay: Type 2281-1-Relay  
Part No.: 159 300 258



- A1, A2 - power supply
- C - reference probe
- E1 - upper level probe
- E2 - bottom level probe
- S - shielding
- 15, 16, 18 - 1. relay output
- 25, 26, 28 - 2. relay output

Single Level Monitoring

2 SPDT Relay: Type 2281-2-Relay  
Part No.: 159 300 259

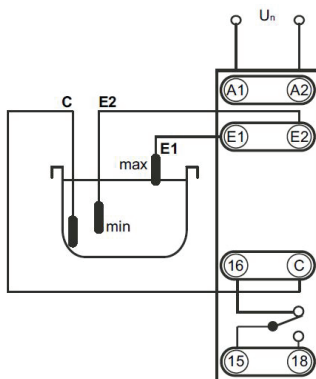


Function	2x	<input type="checkbox"/>	1x
Input inverse	OFF	<input type="checkbox"/>	ON
Delay type E2	ta	<input type="checkbox"/>	tb
Delay type E1	ta	<input type="checkbox"/>	tb

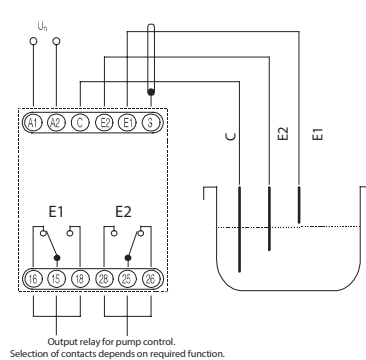
Device Settings

To detect two independent levels in one or two separate tanks

One Tank



Level Control

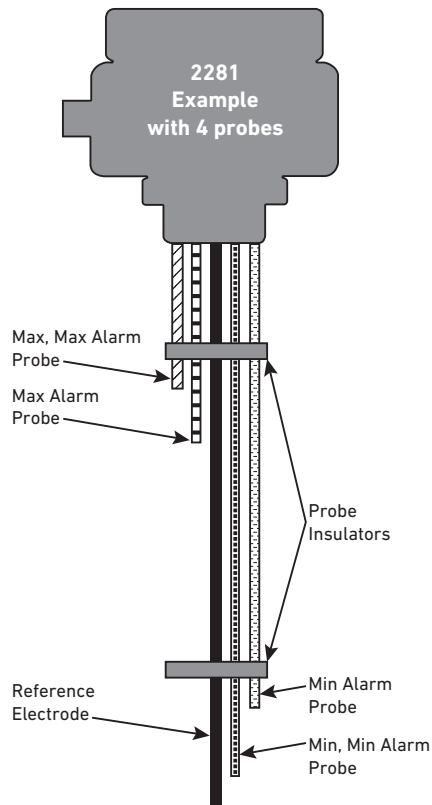


Function	2x	<input type="checkbox"/>	1x
Input inverse	OFF	<input type="checkbox"/>	ON
Delay type E2	ta	<input type="checkbox"/>	tb
Delay type E1	ta	<input type="checkbox"/>	tb

Device Settings

Output relay for pump control.  
Selection of contacts depends on required function.

Level Control - Two levels in one tank



## How to Order

The 2281 can be utilized for alarming 2-4 level set-points, any combination of LO or HI levels. The 2281 housing must always remain out of the fluid being measured.

**Step 1** - Select Multiprobe Enclosure based upon the quantity of desired alarms 2, 3, or 4.

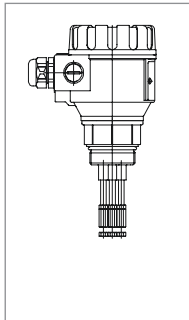
**Step 2** - Select one stainless steel rod to serve as the reference electrodes. Choose either a 19.69 in., 39.37 in., or 59.06 in., the length should be longer than any of the alarm probes. Note: The rod can be cut shorter onsite with a hack saw for a precise fit.

**Step 3** - Select one stainless steel rod for each alarm set-point (up to four rods). For each length choose either a 19.69 in., 39.37 in., or 59.06 in. Note: The rod can be cut shorter onsite with a hack saw for a precise dimension.

**Step 4** - Select probe insulator, a minimum of one is required. It's suggested to add one more for every additional 20 in. of assembly length (maximum 3).

**Step 5** - Select the amount of alarm relays to match the amount of alarm set-points. Choose either 2 or 1 and 2=3, or 2 and 2=4.

## Ordering Information



**Step 1**

Mfr. Part No.	Code	Description
2281-S-BT-2	159 300 250	Multiprobe enclosure, 2 probes + reference probe, PBT enclosure, 1 1/2" BSP thread
2281-S-BT-3	159 300 251	Multiprobe enclosure, 3 probes + reference probe, PBT enclosure, 1 1/2" BSP thread
2281-S-BT-4	159 300 252	Multiprobe enclosure, 4 probes + reference probe, PBT enclosure, 1 1/2" BSP thread

**Step 2 & 3**

2281-E-205	159 300 253	Stainless steel electrode, 0.5 m (19.69 in.)
2281-E-210	159 300 254	Stainless steel electrode, 1.0 m (39.37 in.)
2281-E-215	159 300 255	Stainless steel electrode, 1.5 m (59.06 in.)

**Step 4**

2281-5-Spacer	159 300 257	Probe separator for conductive level switch
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**Step 5**

2281-1-Relay	159 300 258	Conductive level control switch, 1 SPDT relay, 24 - 240 V AC/DC
2281-2-Relay	159 300 259	Conductive level control switch, 2 SPDT relay, 24V AC/DC

**Options**

		Enclosure NEMA 4A, fiberglass with SS hardware, 7.69 in. L x 7.69 in. W x 6.38 in. D
6205-0002	159 000 858	1 meter length DIN Rail
6205-0003	159 000 859	End clip for DIN Rail

