

Water Level Controller Relay

CE 7UG0
IEC 60947-5-1



Please read and understand these instructions before installing, operating, or maintaining the equipment.



DANGER

Hazardous voltage can cause death or serious injury. Disconnect power before working on equipment.



CAUTION

Reliable functioning of the equipment is only ensured with certified components. Overvoltage category II (Refer IEC 60947-1)



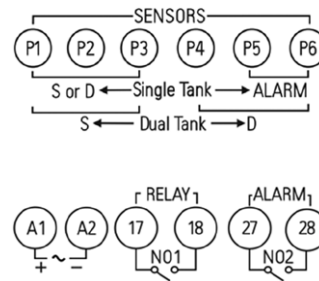
NOTICE

This product has been designed for environment A. Use of this product in environment B may cause unwanted electromagnetic disturbances in which case the user may require to take adequate mitigation measures.

Technical Data

Designation	7UG0885-1JU20
Type	Water Level Controller relay
Control voltage (Uc)	110 - 240V AC/DC
Tolerance on Control supply	0.85x Uc... 1.1x Uc
Frequency	50/60Hz
Operating temperature	0 to 50°C, 95%RH (non-condensing)
Operation / Modes	1. Single tank operation (Delivery or Suction mode) 2. Dual tank operation (Delivery & Suction mode)
Trip Time delay	2 sec (±0.5s)
Max. Power consumption	3.2 VA

Terminal connections



S : Suction mode
D : Delivery mode
P1 : Ref. 1
P4 : Ref. 2

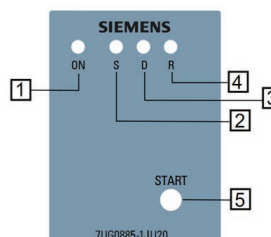
Note: Use Sensor type 7UG0985-0YY00 along with this product.

	7UG0885- 1JU20
	0.5 Nm
	1 x (0.75 to 2.5) mm ² 2 x 0.5 to 2 x 1.5 mm ²
	1 x (0.5 to 2.5) mm ² 2 x (0.5 to 1.5) mm ²

Product Features:

1. Single / Dual tank operation, Suction / Delivery modes.
2. Programmable setting of operation & mode thereby no need to change sensor connections.
3. Pump protection from Dry run and Overflow condition.
4. Provision for Manual Start.
5. Auto liquid sensitivity detection (upto 500k ohms)
6. Water level indication.
7. Alarm function : Alarm relay o/p in Single tank operation (using additional sensors at Lowest & Highest level of liquid)

Front panel functions



Functions	
1	Power ON Indication (Red)
2	Suction mode Indication (Yellow)
3	Delivery mode Indication (Yellow)
4	Relay status Indication (Red)
5	Key for configuration & Manual Start

CONFIGURATION SETTING

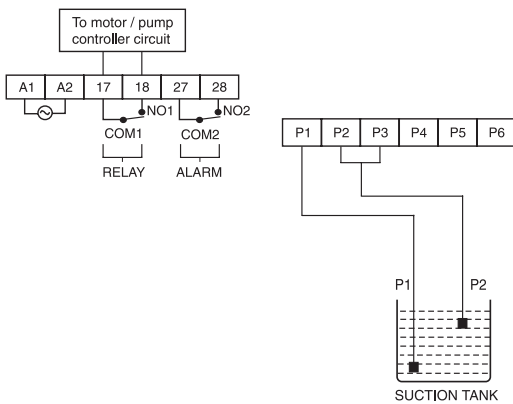
To enter Configuration mode, all the sensors should be disconnected i.e. out of water. Either of the three modes i.e. Single tank (Suction), Single tank (Delivery) & Dual tank (Suction & Delivery) can be selected. Default mode is Dual tank operation.

Programming	START Key	LED Indication				Waiting duration
		ON	S	D	R	
Enter Configuration	Press for 5 sec	ON	Blink	Blink	Blink	3 sec
Mode selection	Press key to switch between modes					10 sec
	1. Dual tank (S&D)	ON	ON	ON	OFF	
	2. Single tank (S)	ON	ON	OFF	OFF	
	3. Single tank (D)	ON	OFF	ON	OFF	
Exit Configuration	---	ON	Blink	Blink	Blink	3 sec

After 10 sec, unit will auto exit programming mode with last set operation mode.

Applications

Single Tank Single Level_Suction Logic

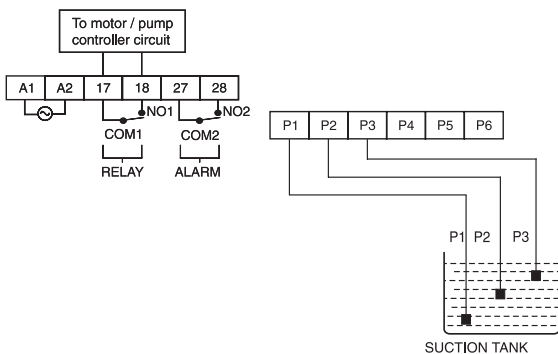


- NOTE :
- P4, P5 & P6 are not connected
 - Sensor P3 is shorted with sensor P2, to act as single level measurement sensor.

Testing Chart

Sr. No.	P1	P2=P2+P3	Relay Status	ALARM Status	LED1	LED2	LED3	LED4
					Power ON	Suction	Delivery	Relay
1	IN	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF
2	IN	IN	ON	ON	ON	ON	OFF	ON

Single Tank Two Level Controller_Suction Logic



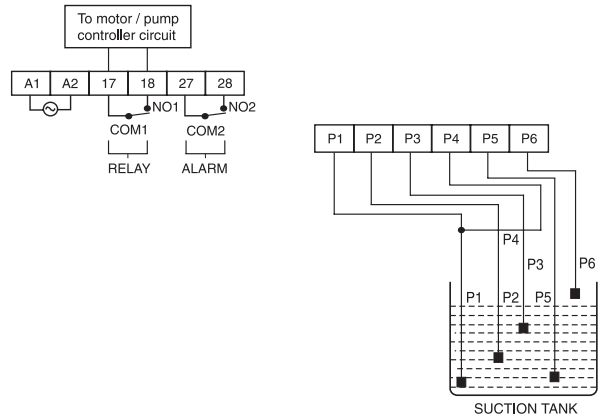
- NOTE :
- P4, P5 & P6 are not connected
 - Measurement is done with sensor P2 & P3 for different liquid levels, considering P1 as reference.

Testing Chart

Sr.No.	P1	SENSOR CONDITION		Relay Status	ALARM Status	LED1	LED2	LED3	LED4
		P2	P3			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF
2	IN	IN	OUT	OFF	ON	ON	Slow Blinking	OFF	OFF
3	IN	IN	IN	ON	ON	ON	ON	OFF	ON
4	IN	IN	OUT	ON	ON	ON	Slow Blinking	OFF	ON
5	IN	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF

Applications

Single Tank Two Level With Alarm_Suction Logic

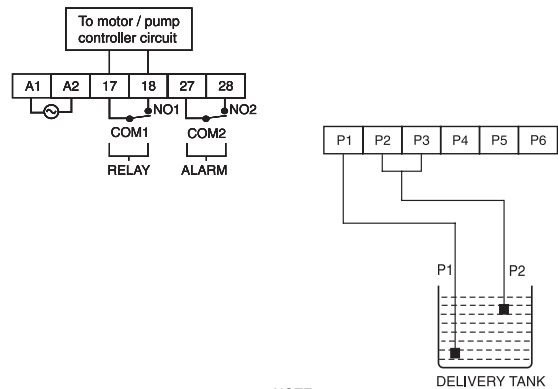


- NOTE :
- Sensor P1+P4 are shorted so as to act as single reference.
 - Sensor P5 & P6 are used for Alarm feature.
 - Measurement is done with sensor P2 & P3 for different level indication.

Testing Chart

Sr.no.	P1=P1+P4	SENSOR CONDITION				Relay Status	ALARM Status	LED1	LED2	LED3	LED4
		P2	P3	P5	P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	OUT	OUT	OFF	ON	Fast Blinking	OFF	OFF	
2	IN	OUT	OUT	IN	OUT	OFF	OFF	Fast Blinking	OFF	OFF	
3	IN	IN	OUT	IN	OUT	OFF	OFF	Slow Blinking	OFF	OFF	
4	IN	IN	IN	IN	OUT	ON	OFF	ON	OFF	ON	
5	IN	IN	IN	IN	IN	ON	ON	ON	OFF	ON	
6	IN	IN	IN	IN	OUT	ON	OFF	ON	OFF	ON	
7	IN	IN	OUT	IN	OUT	ON	OFF	ON	Slow Blinking	OFF	
8	IN	OUT	OUT	IN	OUT	OFF	OFF	ON	Fast Blinking	OFF	
9	IN	OUT	OUT	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	

Single Tank Single Level_Delivery Logic

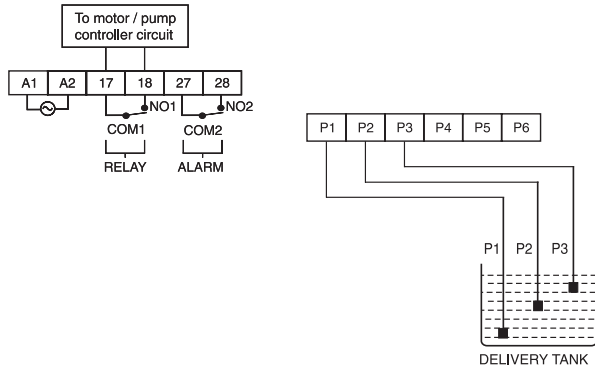


- NOTE :
- Sensors P4, P5 & P6 are not connected / kept open.
 - Sensor P3 is shorted with sensor P2, to act as single level measurement sensor.

Testing Chart

Sr. No.	P1	P2=P2+P3	Relay Status	ALARM Status	LED1	LED2	LED3	LED4
					Power ON	Suction	Delivery	Relay
1	IN	OUT	ON	ON	ON	OFF	Fast Blinking	ON
2	IN	IN	OFF	ON	ON	OFF	ON	OFF

Single Tank Two Level Controller_Delivery Logic



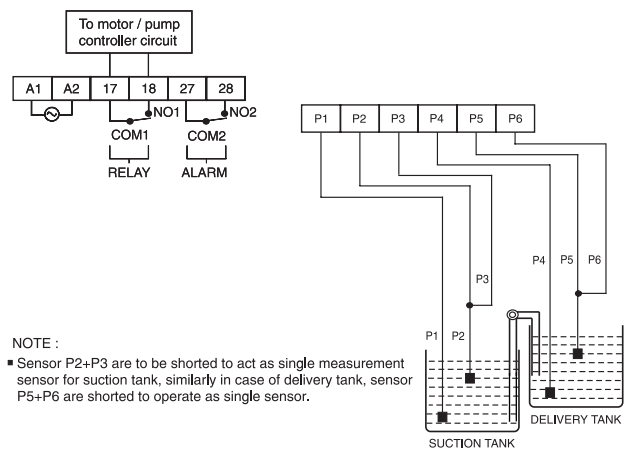
NOTE :

- P4, P5 & P6 are not connected
- Measurement is done with sensor P2 & P3 for different liquid levels, considering P1 as reference.

Testing Chart

Sr.No.	P1	SENSOR CONDITION		Relay Status	ALARM Status	LED1	LED2	LED3	LED4
		P2	P3			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON
2	IN	IN	OUT	ON	ON	ON	OFF	Slow Blinking	ON
3	IN	IN	IN	OFF	ON	ON	OFF	ON	OFF
4	IN	IN	OUT	OFF	ON	ON	OFF	Slow Blinking	OFF
5	IN	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON

Two Tank Single Level



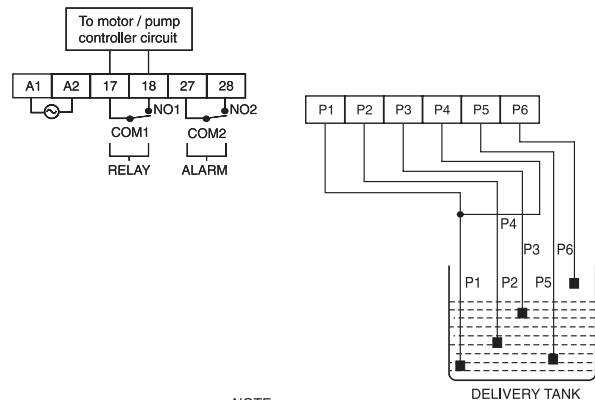
NOTE :

- Sensor P2+P3 are to be shorted to act as single measurement sensor for suction tank, similarly in case of delivery tank, sensor P5+P6 are shorted to operate as single sensor.

Testing Chart

Sr. No.	SENSOR CONDITION				Relay Status	ALARM Status	LED1	LED2	LED3	LED4
	P1 (Ref1)	P2=P2+P3	P4 (Ref2)	P5=P5+P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	IN	OUT	OFF	OFF	ON	Fast Blinking	Fast Blinking	OFF
2	IN	IN	IN	OUT	ON	OFF	ON	ON	Fast Blinking	ON
3	IN	IN	IN	IN	OFF	OFF	ON	ON	ON	OFF
4	IN	OUT	IN	IN	OFF	OFF	ON	Fast Blinking	ON	OFF

Single Tank Two Level With Alarm_Delivery Logic



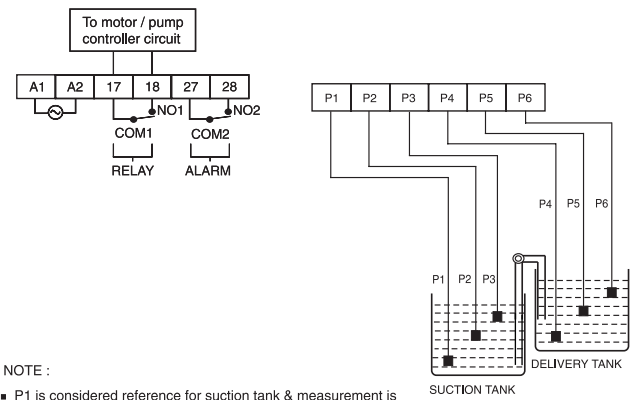
NOTE :

- Sensor P1+P4 are shorted so as to act as single reference.
- Sensor P5 & P6 are used for Alarm feature. Measurement is done with sensor P2 & P3 for different level indication.

Testing Chart

Sr. No.	P1=P1+P4	SENSOR CONDITION				Relay Status	ALARM Status	LED1	LED2	LED3	LED4
		P2	P3	P5	P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON
2	IN	OUT	OUT	IN	OUT	ON	OFF	ON	OFF	Fast Blinking	ON
3	IN	IN	OUT	IN	OUT	ON	OFF	ON	OFF	Slow Blinking	ON
4	IN	IN	IN	IN	OUT	OFF	OFF	ON	OFF	ON	OFF
5	IN	IN	IN	IN	IN	OFF	ON	ON	OFF	ON	OFF
6	IN	IN	IN	IN	OUT	OFF	OFF	ON	OFF	ON	OFF
7	IN	IN	OUT	IN	OUT	OFF	OFF	ON	OFF	Slow Blinking	OFF
8	IN	OUT	OUT	IN	OUT	ON	OFF	ON	OFF	Fast Blinking	ON
9	IN	OUT	OUT	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON

Two Tank Two Level



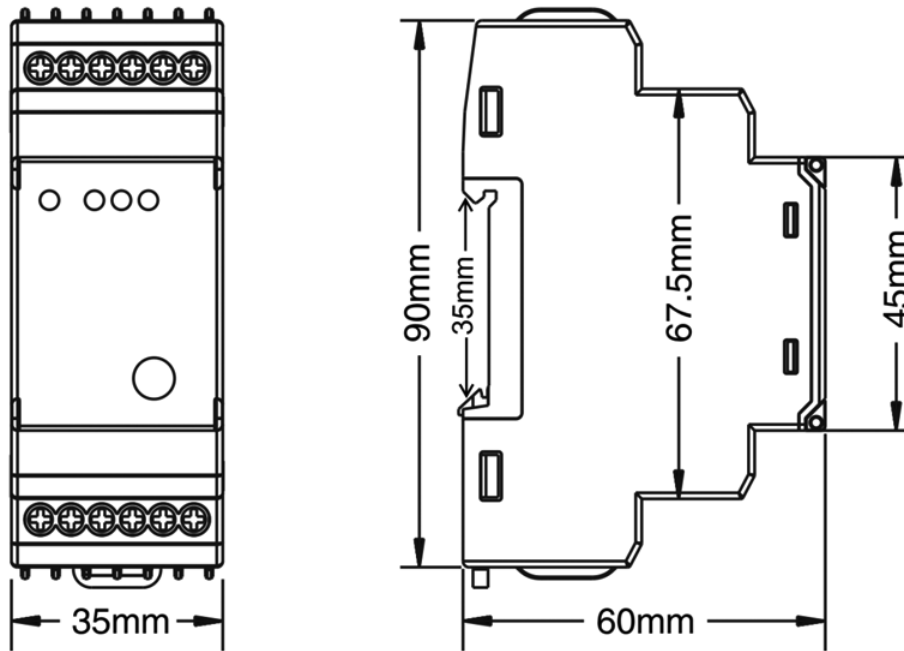
NOTE :

- P1 is considered reference for suction tank & measurement is done with sensor P2 & P3 at different liquid levels. Similarly for delivery tank, P4 is considered as reference & measurement is done with sensor P5 & P6 at different liquid levels.

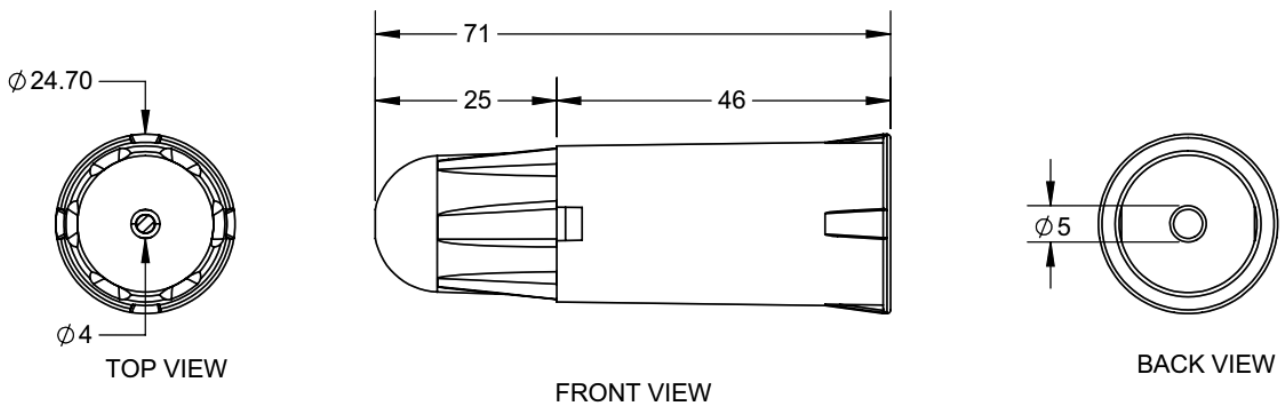
Sr. No.	SENSOR CONDITION						Relay Status	ALARM Status	LED1	LED2	LED3	LED4
	P1(Ref1)	P2	P3	P4 (Ref2)	P5	P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	IN	OUT	OUT	OFF	OFF	ON	Fast Blinking	Fast Blinking	OFF
2	IN	IN	OUT	IN	OUT	OUT	OFF	OFF	ON	Slow Blinking	Fast Blinking	OFF
3	IN	IN	IN	IN	OUT	OUT	ON	OFF	ON	ON	Fast Blinking	ON
4	IN	IN	OUT	IN	IN	OUT	ON	OFF	ON	Slow Blinking	Slow Blinking	ON
5	IN	IN	IN	IN	IN	OUT	ON	OFF	ON	ON	Slow Blinking	ON
6	IN	IN	IN	IN	IN	IN	OFF	OFF	ON	ON	ON	OFF
7	IN	IN	OUT	IN	IN	IN	OFF	OFF	ON	Slow Blinking	ON	OFF
8	IN	OUT	OUT	IN	IN	IN	OFF	OFF	ON	Fast Blinking	ON	OFF
9	IN	OUT	OUT	IN	IN	OUT	OFF	OFF	ON	Fast Blinking	Slow Blinking	OFF

Dimensional drawings

7UG0885-1JU20



7UG0985-0YY00



Disposal

Siemens products are environment friendly, which predominantly consist of recyclable materials.

For disposals we recommend disassembling and separation into following materials:

METALS: Segregate into Ferrous & Non Ferrous types for recycling through authorised dealer.

PLASTICS: Segregate as per material type for recycling through authorised dealer. Because of the long lifetime of Siemens products the disposal guidelines may be replaced by other national regulations when taking the product out of service.

The local customer care service is available at any time to answer disposal-related questions