

User's Manual

Supmea

Optical Dissolved Oxygen Controller

DY2900

Preface

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Note

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Version

STK-K-60-20-01

U-DO2.1-MYEN1

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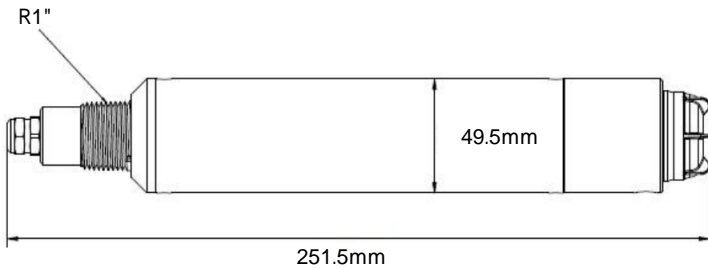
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- 2. _____ 10
 - 2.1 _____ 10
 - 2.2 _____ 12
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- 4. _____ 15
- 5. _____ 20
- _____ 22

1.

1.1

	49.5x 251.1mm(DxL)
	1.4kg
	body : SUS316L (fresh water) / Titanium (Sea wter)
	Cover : PPS + glass fiber
	Cable : PVC
IP	IP68/NEMA6P
	: 0.00~20.00mg/L(DO). 0~200%(SAT) : 0 ~ 45
	: ± 3% FS : ± 0.5
	≤2.5m/s, 8.2ft/s
	≤0.3Mpa
	0 ~ 45°C
	: -15~65
	/
	10m (가)



1.2

	2.8
	: 100 x 100 x 150mm : 92.5 x 92.5mm
	0.65 kg
	(DO) / (SAT) ,
	: 0.00~20.00mg/L(DO). 0~200%(SAT), : 0 ~ 45
	: ± 3% FS : ± 0.5
	4~20mA (750 , ± 0.2%FS)
	MODBUS-RTU RS485
/	/ , 250Vac/3A
	220Vac ± 10%, 50Hz/60Hz
	: 0~50 / : 10~85%RH()
	: -15~65 : 5~95%RH : < 2000m

2.

2.1

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가 60

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가 85%RH

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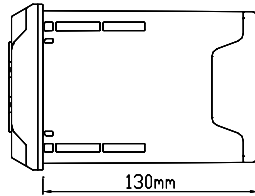
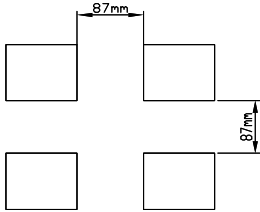
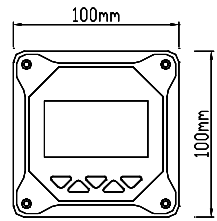
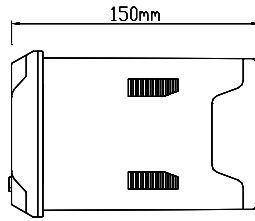
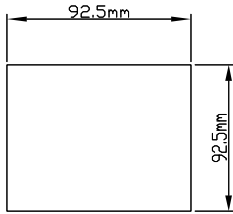
가

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92,5 x 92,5mm

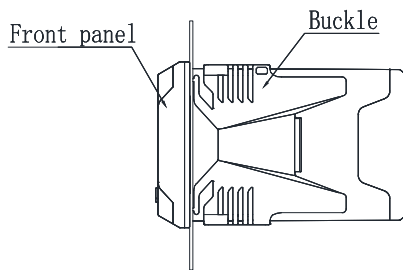
: 1.5mm ~13mm



(1)

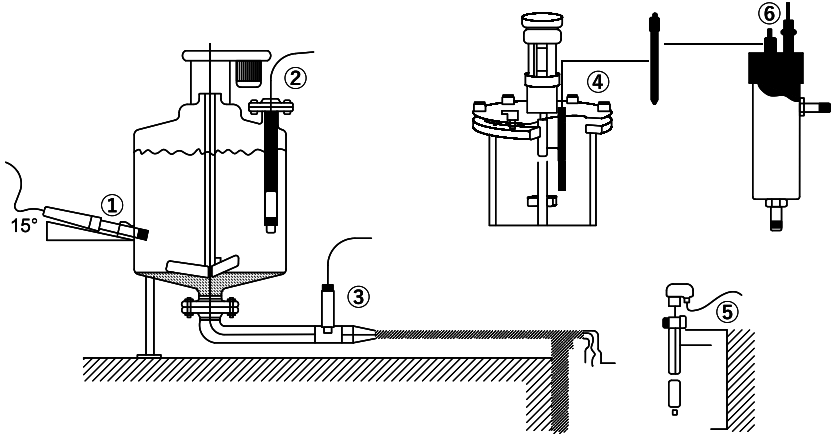
(2)

3



(3)

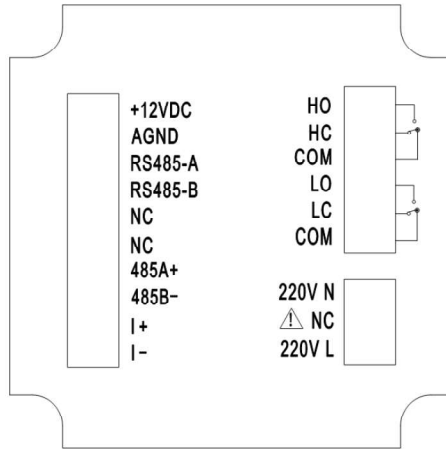
2.2



(4)

(15 °)

2.3



(5)

- | | | | |
|-----------------------|---|---------------------------|-----|
| ● +12VDC : | + | ● HO : | |
| ● AGND: | - | ● HC : | |
| ● RS485-A: | + | ● COM : | COM |
| ● RS485-B: | - | ● LO : | |
| ● NC : | | ● LC : | |
| ● RS485A+ : RS485 A+ | | ● COM : | COM |
| ● RS485B - : RS485 B- | | ● 220V L : 220Vac Live | |
| ● I + : 4~20mA + | | ● NC : | |
| ● I - : 4~20mA - | | ● 220V N : 220Vac Neutral | |

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● +12VDC AGND

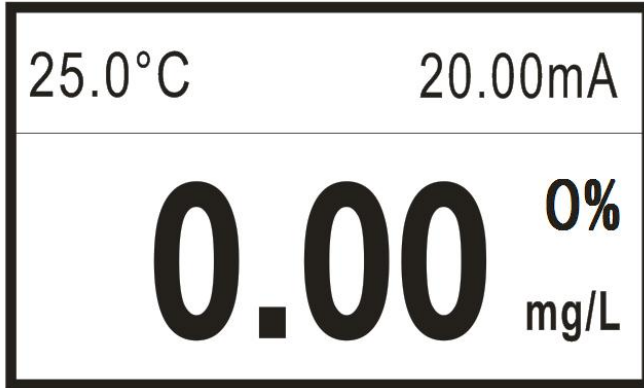
3.



(6)

Sign	Name of the key	Function description
	MENU	- MENU
	EXIT	-
	RIGHT	-
	DOWN	-
	ENTER	-

4.



(8)



"ESC"

가



-----User Password-----

Password: 0000

(9)

"0000"

----- Main Menu -----

- ➡ 1.System Setting
- 2.Signal Setting
- 3.Online Calibrtion
- 4.Remote Setting
- 5.Alarm Setting
- 6.Version Query

(10)

- System Setting : , ,
- Signal Setting : /MLSS
- Online Calibration : MLSS/
- Remote Setting : 4~20mA RS485
- Alarm Setting : /
- Version Query :

System Setting

- System Setting -----
- ➡ 1. Language (11)
 - 2. Buzzer
 - 3. Backlight Setting
 - 4. Change Password
 - 5. Factory Setting

- Language : (/)
- Buzzer : (On/Off)
- Backlight setting : (On/Off)
- Change Password :
- Factory setting :

Signal Setting

- Signal Setting -----
- ➡ 1. DO Correction (12)
 - 2. Slope Setting
 - 3. Air Pressure Setting
 - 4. Salt content setting
 - 5. Response Time

- DO Correction : (-9.99~+9.99mg/L)
- Slope Setting : (가)
- Air Pressure Setting : (760mmg)
- Salt Content Setting : (0.00g/kg)
- Response Time : (60)

Online Calibration

----- Online Calibration -----
 ▶ 1.Air Calibration

(13)

- Air Calibration :

("Enter" 가)

Remote Setting

----- Remote Setting -----
 ▶ 1.RS485 Setting
 2.Current Transmission

(14)

- RS485 Setting : RS485

- Current Transmission : 4~20mA (4mA) / (20mA)

Alarm Setting

-----Alarm Setting-----

➡ 1.DO High Alarm

2.DO Low Alarm

(15)

- DO High Alarm : 가 가 . 가
- DO Low Alarm : 가 가 . 가

Version Query

-----Version Query-----

(16)

- Version Query :

5.

RS485

MODBUS-RTU

. (No.03)

MODBUS standard format (read and hold command from Register 03)**Command format:**

(6) Command format

Definition	Address	Function code	Register address	Data number	CRC check
Data	ADDR	0x03	M	N	CRC 16
Number of bytes	1	1	2	2	2

Return format:

(7) Return format

Definition	Address	Function code	Data size	Data	CRC check
Data	ADDR	0x03	2*N	Data	CRC 16
Number of bytes	1	1	1	2*N	2

Descriptions of register address:

Address	Data type	Data size	Function code	Description	Access authority
0x0000	short	2 bytes	0x03	DO value (unit:mg/L, to be divided by 100)	Read only
0x0001	short	2 bytes	0x03	Temperature value (unit: °C, to be divided by 10)	Read only
0x0002	short	2 bytes	0x03	Saturation value (unit: %, to be divided by 10)	Read only

(DO))

- "00 03 00 00 01 85 DB" .

- "00 03 02 00 00 85 84" .

- 00 : Slave address
- 03 : function code, reading and holding register
- 02 : (2)
- 00 00 : (0.00mg/L)
(100 , 0.00~20.00mg/L)
- 85 84 : CRC 16

)

- "00 03 00 01 00 01 D4 1B" .

- "00 03 02 00 FA 05 C7" .

- 00 : Slave address
- 03 : function code, reading and holding register
- 02 : (2)
- 00 FA : (25)
(10 , -10.0~60.0)
- 05 C7 : CRC 16

Temperature / ℃	(101.325kPa) (mg/L)	가 DO (mg/L / g/kg)	1g/kg	Temperature / ℃	(101.325kPa) (mg/L)	가 DO (mg/L / g/kg)	1g/kg
0	14.62	0.0875		21	8.91	0.0464	
1	14.22	0.0843		22	8.74	0.0453	
2	13.83	0.0818		23	8.58	0.0443	
3	13.46	0.0789		24	8.42	0.0432	
4	13.11	0.0760		25	8.26	0.0421	
5	12.77	0.0739		26	8.11	0.0407	
6	12.45	0.0714		27	7.97	0.0400	
7	12.14	0.0693		28	7.83	0.0389	
8	11.84	0.0671		29	7.69	0.0382	
9	11.56	0.0650		30	7.56	0.0371	
10	11.29	0.0632		31	7.43	0.0364	
11	11.03	0.0614		32	7.30	0.0354	
12	10.78	0.0593		33	7.18	0.0348	
13	10.54	0.0582		34	7.07	0.0338	
14	10.31	0.0561		35	6.95	0.0332	
15	10.08	0.0545		36	6.84	0.0322	
16	9.87	0.0532		37	6.73	0.0316	
17	9.66	0.0514		38	6.63	0.0306	
18	9.47	0.0500		39	6.53	0.0300	
19	9.28	0.0489		40	6.43	0.0291	
20	9.09	0.0475					

(mS/cm)	(g/Kg)	(mS/cm)	(g/Kg)	(mS/cm)	(g/Kg)
5	3	20	13	35	25
6	4	21	14	36	25
7	4	22	15	37	26
8	5	23	15	38	27
9	6	24	16	39	28
10	6	25	17	40	29
11	7	26	18	42	30
12	8	27	18	44	32
13	8	28	19	46	33
14	9	29	20	48	35
15	10	30	21	50	37
16	10	31	22	52	38
17	11	32	22	54	40
18	12	33	23		
19	13	34	24		

Temperature/ °C	Pressure of saturated water steam/ hPa	Temperature/ °C	Pressure of saturated water steam/ hPa	Temperature/ °C	Pressure of saturated water steam/ hPa
0	6.1	15	17.1	30	50.2
1	6.6	16	18.1	31	53.2
2	7.1	17	19.3	32	56.2
3	7.6	18	20.7	33	59.4
4	8.1	19	22.0	34	62.8
5	8.7	20	28.1	35	66.2
6	9.3	21	29.9	36	69.8
7	10.0	22	31.7	37	73.4
8	10.7	23	33.6	38	77.2
9	11.5	24	35.6	39	81.0
10	12.3	25	37.7	40	85.0
11	13.1	26	40.0		
12	14.0	27	42.4		
13	14.9	28	44.9		
14	16.0	29	47.6		

Altitude h / m	Average atmospheric pressure p/ hPa	Altitude h / m	Average atmospheric pressure p/ hPa	Altitude h / m	Average atmospheric pressure p/ hPa
0	1013	1900	799	3800	630
100	1001	2000	789	3900	622
200	988	2100	779	4000	614
300	976	2200	769	4100	607
400	964	2300	760	4200	599
500	952	2400	750	4300	592
600	940	2500	741	4400	584
700	928	2600	732	4500	577
800	917	2700	723	4600	570
900	905	2800	714	4700	563
1000	894	2900	705	4800	556
1100	883	3000	696	4900	549
1200	872	3100	687	5000	542
1300	861	3200	679	5100	535
1400	850	3300	670	5200	529
1500	840	3400	662	5300	522
1600	829	3500	654	5400	516
1700	819	3600	646	5500	509
1800	809	3700	638		

Supmea

Supmea Automation Co.,Ltd.