CM-2000

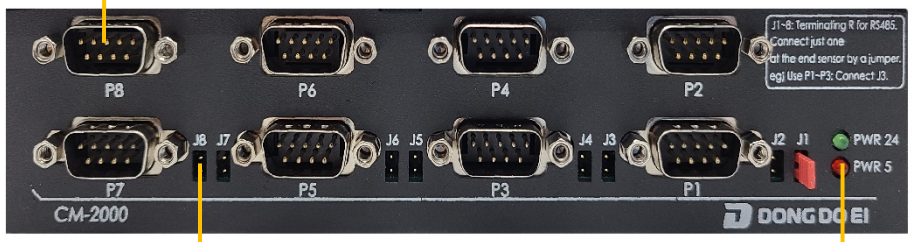
User's Guide

The contents of this manual could be different according to the software version and it can be changed without notice.
Please use this good after reading the manual thoroughly.

1. Feature

〈Front view〉

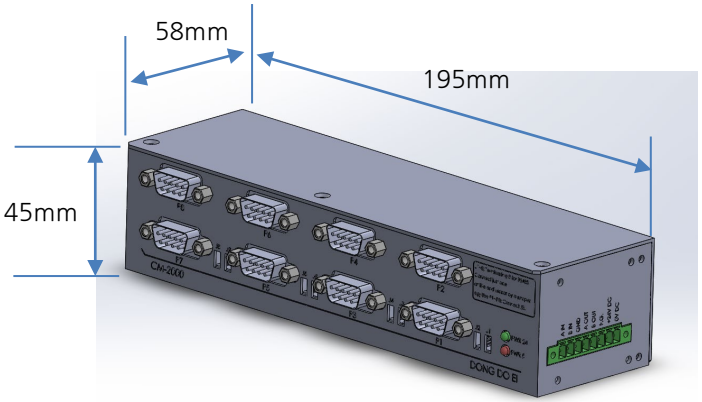
DONG DO EI's DL series probe connection connector



Jumper pins for
the terminating R, 120Ω.
(Connect at the end of the RS485 line)

LED light for power

RS485 wiring /
Power input(24V DC)



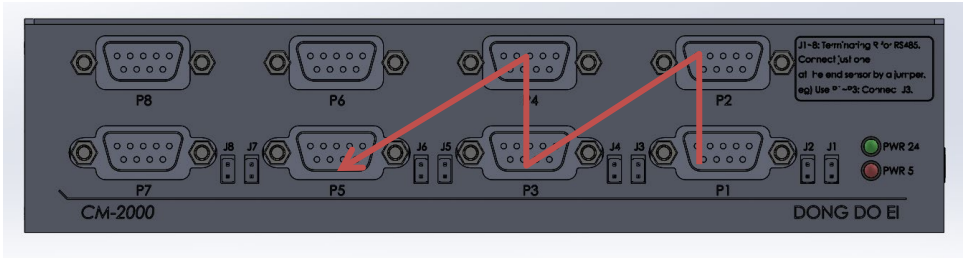
*Must purchase

DL-15S-RS

DLDSC-xx-RS
Sensor cable for CM-2000
xx: length of the cable(02/05/10)

2. Connection Configuration

1) Probe connection

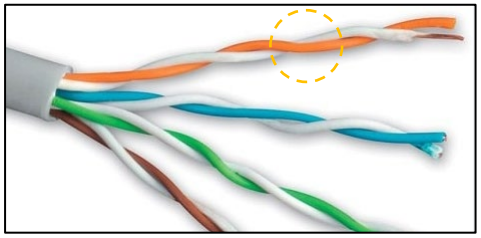


① Connect sensors in the order of the connector's number.
- Sensor's ID should be set by 'DLS communication software'. And the sensor ID shouldn't be same each other.
- Sensor ID and Port number don't have to be the same.
- Default sensor ID : 01
- Default sensor baud rate: 115200 bps.
- Sensor ID can be set from 01 to 32.

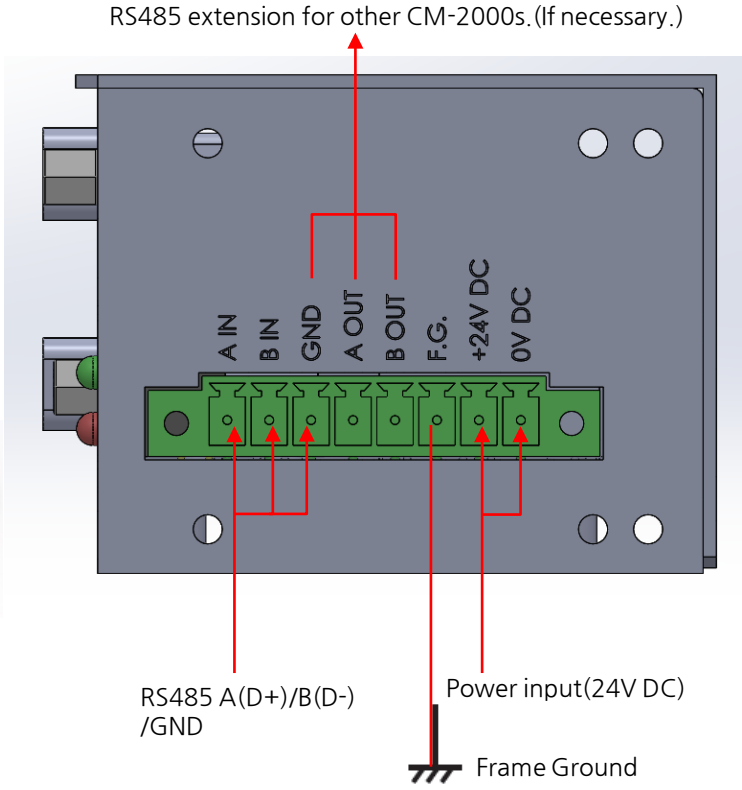
② Put in a jumper on J1 to J8 for the last connected sensor.
It's for the terminating R on RS485 communication.

Eg) if P1~P5 are used : Connect at J5 only.

③ Twisted pair cable should be used for A(D+), B(D-) connection.



〈Twisted pair cable for A/B signals〉



* A private RS485 line should be used for CM-2000.
DO NOT mix with other RS485 lines.

2. Connection Configuration

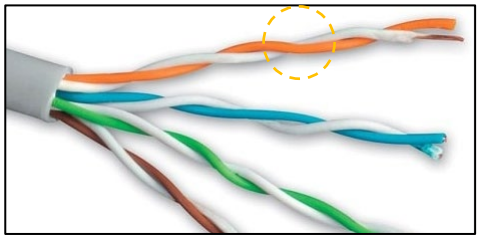
2) CM-2000 extension

① Additional CM-2000 can be used if over 8 sensors are needed to connect.
*8 sensors should be fully connected to previous CM-2000.
**Terminate R should be connected at the last sensor.
Eg) if P1~P10 are used : Connect at J2 on the second CM-2000 unit only.

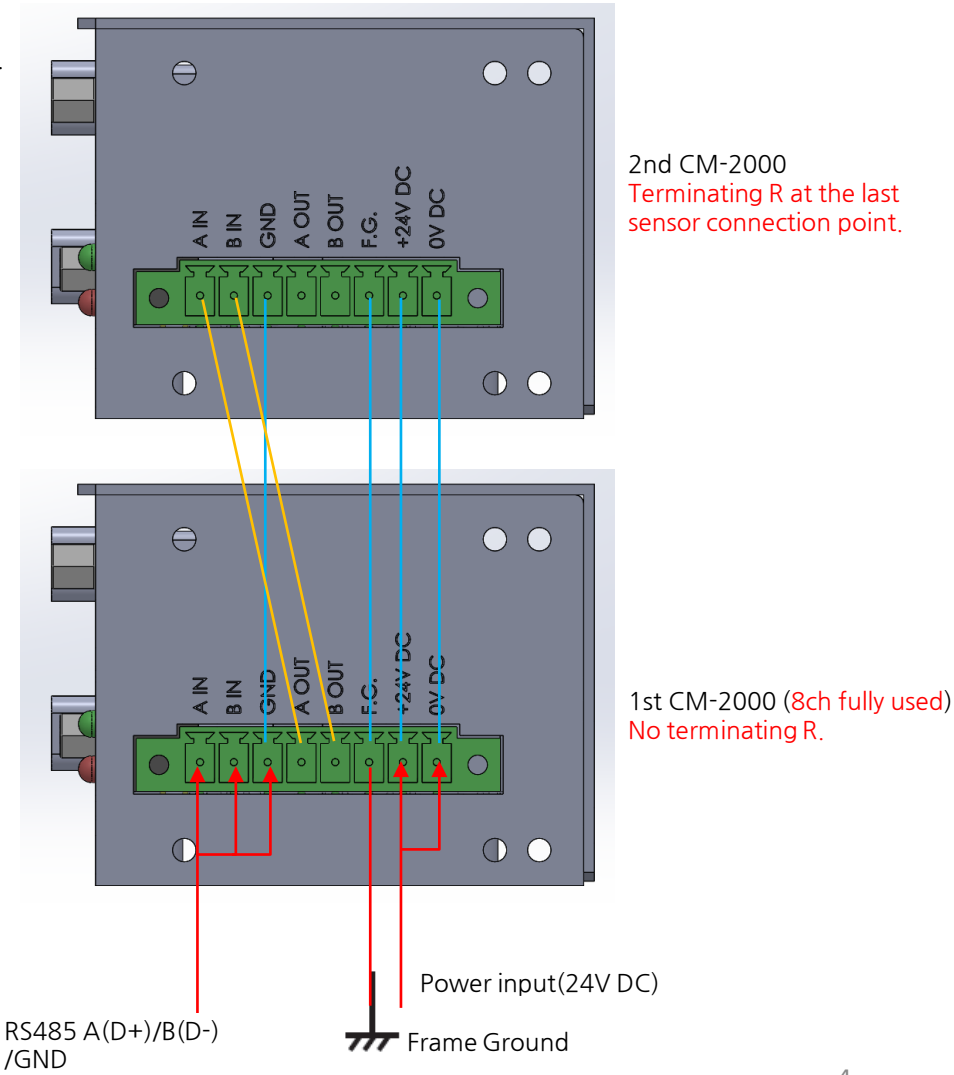
② Max 32ch(CM-2000: 4 units) can be extended.

③ Twisted pair cable should be used for A(D+), B(D-) connection.

④ Power consumption per one CM-2000 is 3W max. So, depends on the number of units, choose right 24V DC power source.



〈Twisted pair cable for A/B signals〉



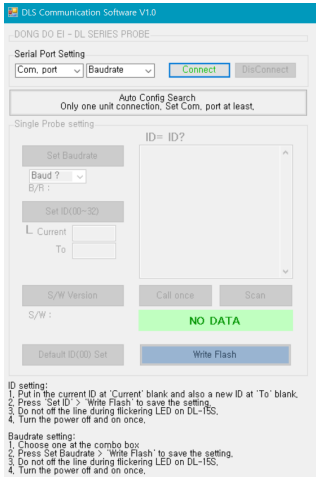
3. Serial Communication

- Serial Communication Specification

1) Sensor ID: 01 to 32 (Default ID: 01)
- If there are same sensor IDs in the same RS485 line, return data should be crushed & damaged.
  So, please set all different IDs for the connected sensors.

2) Baud rate: 38400, 57600, 115200, 230400bps (Default baud rate: 115200bps)

3) ID & Baud rate for sensor is set by 'DLS communication software'



〈DLS communication software〉

4) Data call method
① Give a command to sensor : P, A, C commands.
② Get return data one by one for all sensors.
Please check page 6, 7 for the commands and return format.

5) Data call & return speed : 20ms per sensor.(Recommended)

3. Serial Communication

- ASCII Format

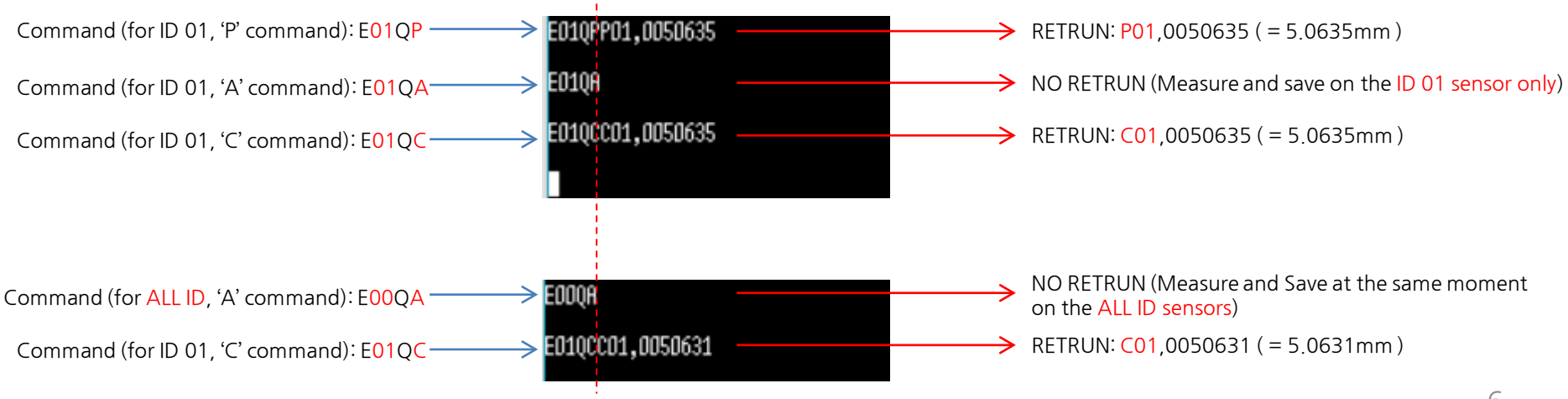
COMMNAND : 'E' + ID(0) + ID(1) + 'Q' + 'P'

		ID			Command
COMMAND : 5 Bytes	1	2	3	4	5
'P' COMMAND(Once measure and position data return)	E	0	1	Q	P
'A' COMMAND(Once measure and just save, Allowed broadcasting command by ID 00)	E	0	0	Q	A
'C' COMMAND(Call for the saved position data by 'A' command)	E	0	1	Q	C

DATA RETURN : 'P' + ID(0) + ID(1) + ',' + DATA(0.1um resolution) + CR + LF

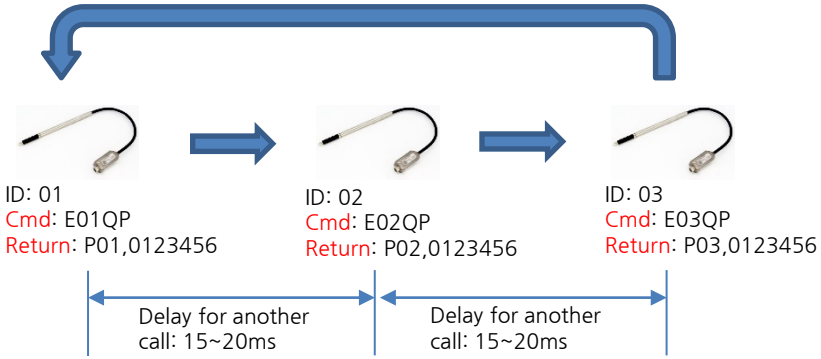
	Command	ID(01 at this chart)			DATA(012.3456mm at this chart)								
RETURN : 13 Bytes	1	2	3	4	5	6	7	8	9	10	11	12	13
'P' COMMAND RETURN	P	0	1	,	0	1	2	3	4	5	6	CR	LF
'A' COMMAND RETURN	None												
'C' COMMAND RETURN	C	0	1	,	0	1	2	3	4	5	6	CR	LF

On a serial communication viewer, the below data will be shown.



3. Serial Communication

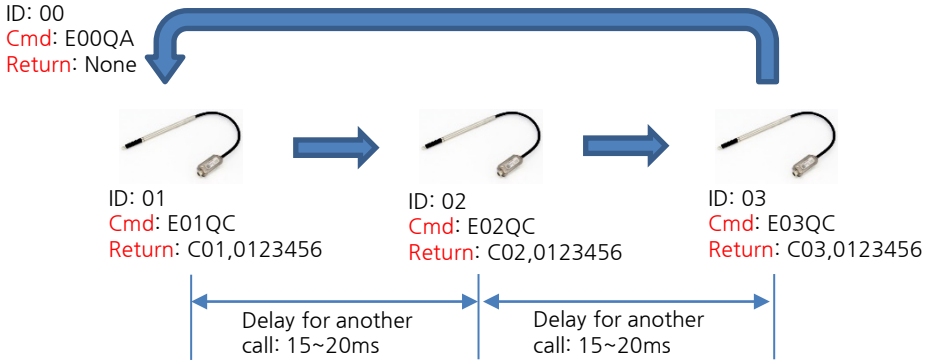
- Data call & return example with command 'P'



- Data call & return example with command 'A' & 'C'

① Give a broadcasting command E00QA → All sensors save measured data once at the same moment.

② Get each sensors' data with C command.



4. Specification

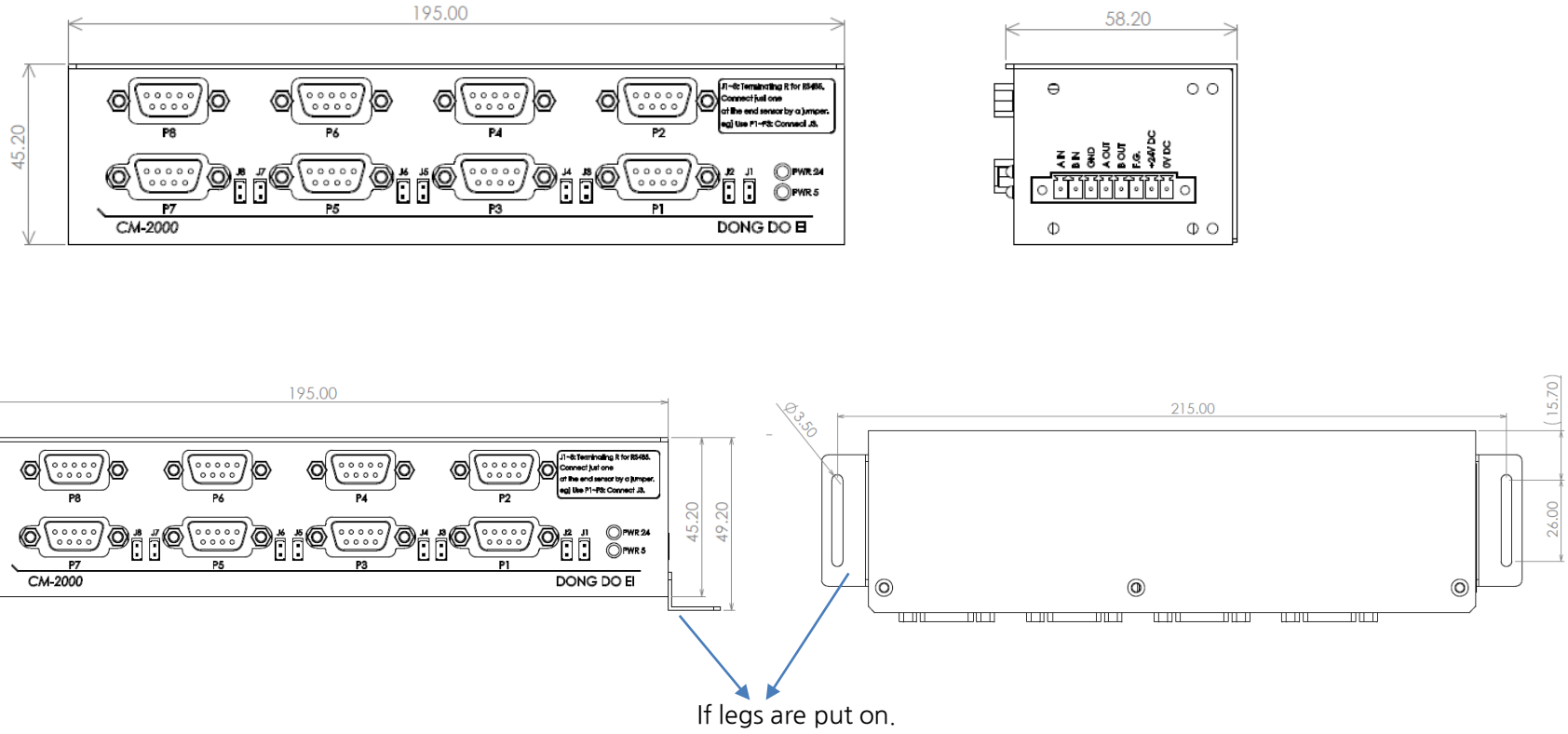
① General Specifications

DIVISION	GENERAL
MAIN SUPPLY(Recommend)	DC24V(0.6A)
POWER CONSUMPTION	3W (Max., on 8 sensors connection)
OPERATING TEMPERATURE	0 ~ 50℃
RELATIVE HUMIDITY	Up To 70%

②Specifications

DIVISION		SPECIFICATION
DIGITAL LINEAR SENSOR	CHANNELS	1~8ch
	RESOLUTION	0.1um
DIMENSION		W195 × D58 x H45(㎜)
WEIGHT		0.5㎏
INTERFACE		RS485, 38400bps ~ 230400bps

5. Dimension


195.00
45.20
58.20
P8
P6
P4
P2
P7
P5
P3
P1
CM-2000
DONG DO EI
PWR 24
PWR 5
A IN
B IN
GND
A OUT
B OUT
F.G.
+24V DC
0V DC
195.00
45.20
49.20
215.00
Ø3.50
(15.70)
26.00
If legs are put on.