



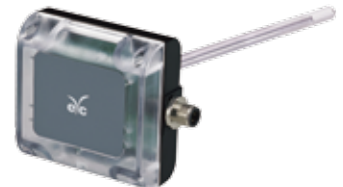
THS80X Series (THS801/802/803/804/805/806) Industry Degree Temperature & Humidity Transmitter



THS801-indoor
0~50°C



THS802-duct
-40~+100°C



THS803-duct
-40~+120°C



THS804- remote
PVC cable
-40~+80°C



THS805-remote
TEFLON cable
-40~+100°C



THS806-remote
TEFLON cable
-40~+200°C

Application

〈 Feature 〉

- Industrial sensor comes with high or low dew point and high accuracy and long-term stability. Acid alkali resistant
- Capable of temperature compensation and linear adjustment. Factory test report.
- Multifunction physical quantities — temperature & humidity/dew point/frost point/wet-bulb temp./vapor pressure/mixture ratio/absolute humidity/specific enthalpy
- Standard 2 analogue output or Modbus RS-485
- Option analogue+RS485
- Probe : PC or S.S. ; Remote type : PVC or TEFLON
- Power supply : 8-35VDC and 12-35VAC
- RS-485 and Modbus RTU
- Free programmable software - physical quantities/output/data logger/charts/calibration
- Option : USB to RS-485 Converter

〈 Application 〉

- Monitoring for high-end HVAC process/ air conditioning/ environmental ventilation control
- Building / factory / hospital/ clean room / Lab. / storeroom
- Cooling tank/crisper/environmental chambers/weather station
- Indoor pool/greenhouse/livestock nursery
- Pharmaceutical/textile/agriculture/food/manufacturing industry /monitoring process/drying facility/chemical industry

Specification

Input

input type	Capacitive Humidity Sensor & PT 100Ω A級
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Working Range Suggestion

temperature	0~50℃ (THS801) ; -40~+100℃ (THS802/805) -40~+120℃ (THS803) ; -40~+80℃ (THS804) -40~+200℃ (THS806)
humidity	0~100%
dew point	-40~+60℃
Frost Point(F) 、Wet-bulb Temperature(W) 、Vapor Pressure(E) 、Mixture Ratio(R) 、 Absolute Humidity(V) 、Specific Enthalpy(S) : please refer to physical quantity measuring range list	

Output

output	standard RS-485 and 2 analogue output 0-20mA/4~20mA/0~1V/0-5V/0-10V
signal Connection	3-wire
modbus	Standard RS-485 (programmable) and 2 analogue output
display type	LCD Module with back light, double line character
display range	upon request, one decimal place
height of character	5.56mm

Linear Accuracy(at 25℃)

temperature	$\pm 0.15^{\circ}\text{C} \pm 0.002^{\circ}\text{C} \times t_{\text{actual}}$
humidity (0~90%)	$\pm 1.5\%\text{RH}$
humidity (90~100%)	$\pm 2\%\text{RH}$
temperature influence of body	(at+25℃) 0.05%RH/℃
load Resistance	current output : max. 500Ω / voltage output : min. 10KΩ
output calibration (ZERO & SPAN)	software
response time t90 (temp. at +25℃)	< 20S (membrane filter / S.S. metal grid filter with mesh) ; < 30S(sintered filter)

Environment

media measured	air
working temp. for housing	-20~+60℃
working humidity for housing	0~95%(non-cond.)
working temp. for housing with display	0~60℃
working temp. for probe	PC probe : max. 120℃ ; S.S. probe : max. 200℃
cable (remote type)	PVC cable : max. 80℃ ; TEFLON cable : max. 200℃
storage temperature	-25~+60℃
proof pressure for S.S. probe	10bar
filter	PC membrane filter (standard : PC probe) Metal grid filter with mesh (standard : S.S. probe)
CE certification	EN 61326-1 : 2006 、EN 61326-2-2 : 2006
Emissions	EN 55011 : 2009/A1 : 2010
Immunity	IEC 61000-4-2 : 2008
	IEC 61000-4-3 : 2006 / A1 : 2007 / A2 : 2010
	IEC 61000-4-8 : 2009

Electrical

power supply	8~35VDC / 12~30VAC
current consumption	DC 24V : 60mA / DC 12V : 120mA AC 24V : 140mA / AC 12V : 230mA
electrical connection	M12 - 4 PIN metal connector with 2 m cable or terminal (cable gland)
protect degree	body : IP65 ; probe : IP 20
electric protection	◎Polarity protection ◎over-voltage ◎over-voltage
installation	PC probe : Plastic flange (standard)
housing	PC fire-proof class(PC-110)
probe	PC fire-proof class(PC-110) / S.S. (SUS304)

Physical Quantity Measuring Range List

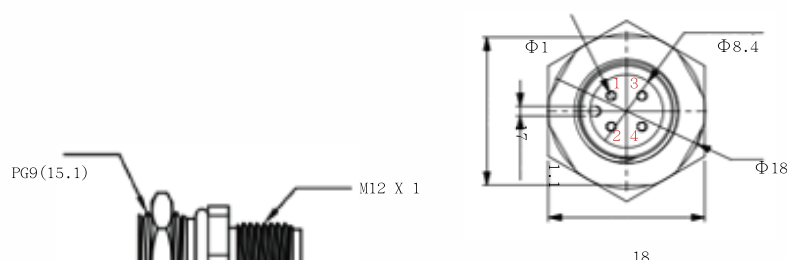
※ Beside temp. & dew point, other physical quantities range as default setting

Physical quantity	THS801 indoor (PC probe)	THS802 duct (PC probe)	THS803 duct (S.S. probe)	THS804 remote (PC probe + PVC cable)	THS805 remote (PC probe+TEFLON cable)	THS806 remote (SS.probe+TEFLON cable)
Temperature (T)	0~50℃	-40~+100℃	-40~+120℃	-40~+80℃	-40~+100℃	-40~+200℃
Humidity (H)	0~100%RH					
Dew Point (D)	-40~+50℃	-40~+60℃				
Frost Point (F)	-40~0℃					
Wet-bulb temp. (W)	0~50℃	0~100℃		0~80℃	0~100℃	
Vapor Pressure (E)	0~150mbar	0~1100mbar		0~500mbar	0~1100mbar	
Mixture Ratio (R)	0~100g/kg	0~999g/kg		0~600g/kg	0~999g/kg	
Absolute Humidity (V)	0~100g/m ³	0~700g/m ³		0~300g/m ³	0~700g/m ³	
Specific Enthalpy (S)	0~300kj/kg	0~2800kj/kg		0~1600kj/kg	0~2800kj/kg	

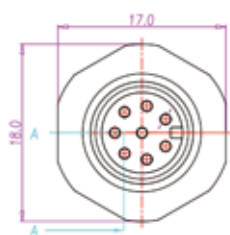
Electric Connector

unit : mm

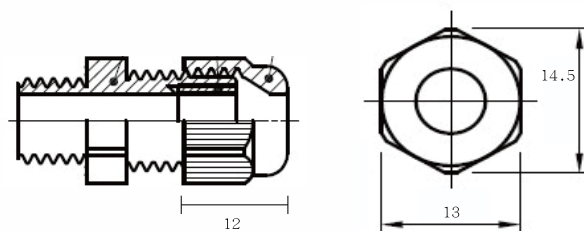
【 M type (M12-4PIN metal connector) 】
RS-485 or analogue



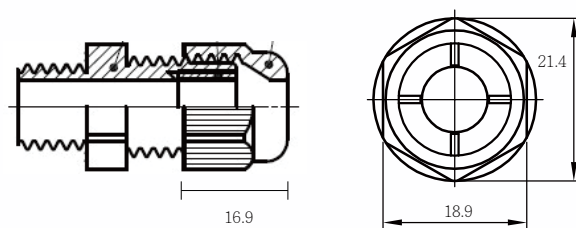
【 M type (M12-8PIN metal connector) 】
RS-485+analogue



【 N type (M12 cable gland) 】 RS-485 or analogue

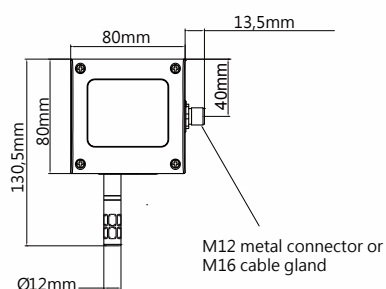


【 N type (M16 cable gland) 】 RS-485+analogue

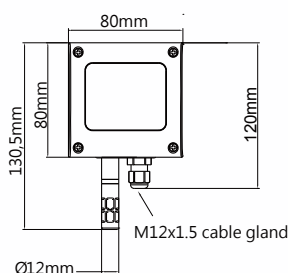


Dimension

【 THS801(indoor) — PC probe 】

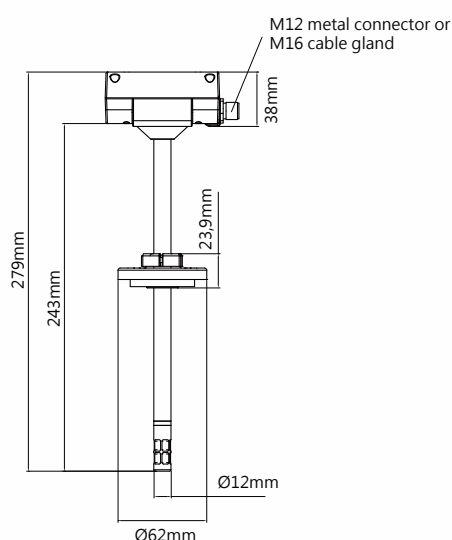


M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485 + analogue

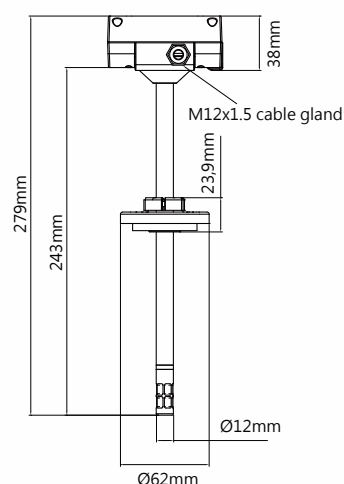


N type : RS-485 or analogue

【 THS802(duct) — PC probe 、 standard plastic flange 】



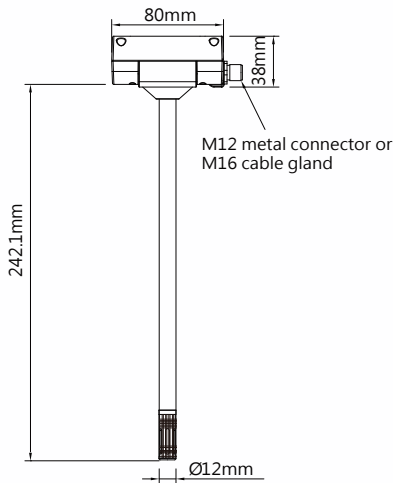
M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485+analogue



N type : RS-485 or analogue

Dimension

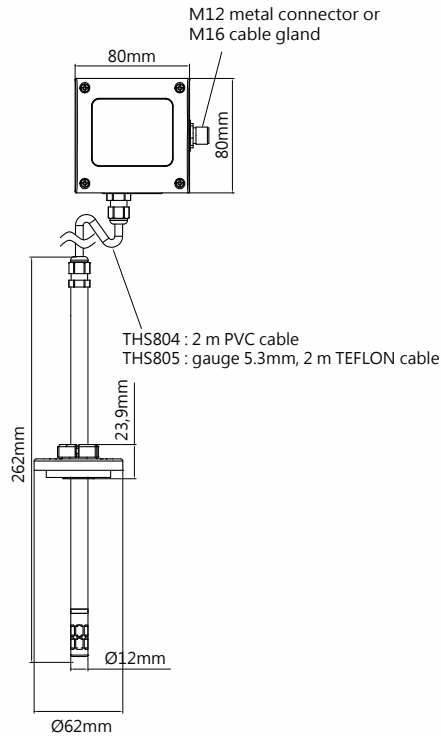
【THS803 duct — S.S. probe】



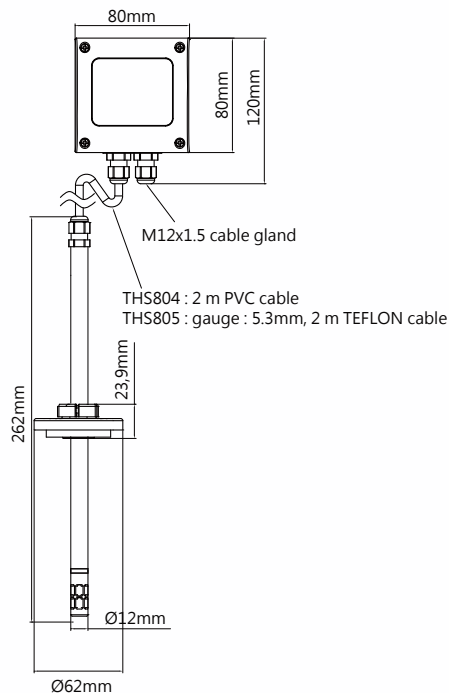
M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485+ analogue

【THS804/THS305 remote

- THS804 : PC probe+ 2 m PVC cable
- THS805 : PC probe+ 2 m TEFLON cable
- standard : plastic flange



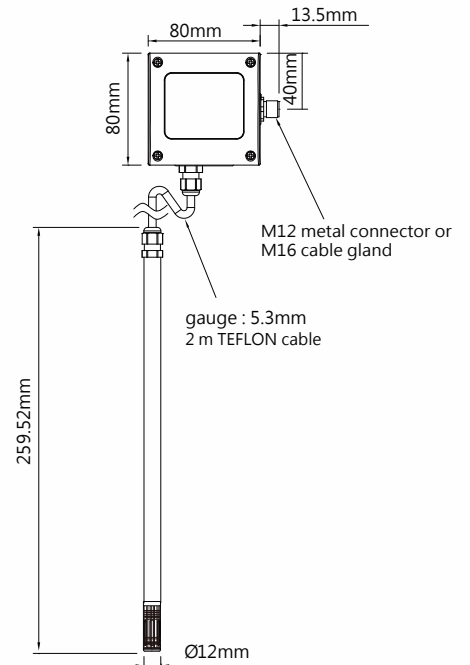
M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485+ analogue



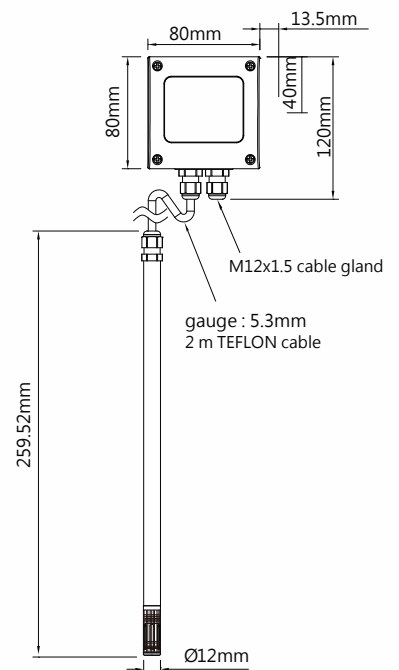
N type : RS-485 or analogue

【THS806 remote】

- S.S. probe+ 2 m TEFLON cable】



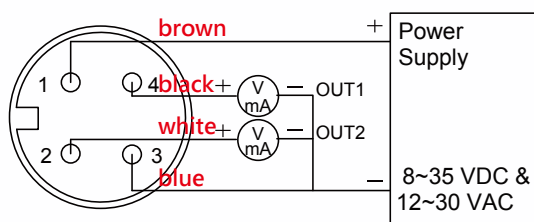
M type (4P) : RS-485 or analogue
M type (8P) or N type : RS-485+ analogue



N type : RS-485 or analogue

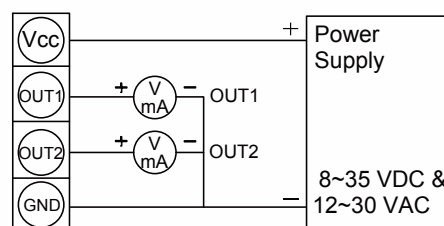
N type : RS-485 or analogue

Analogue Diagram



M12 connector

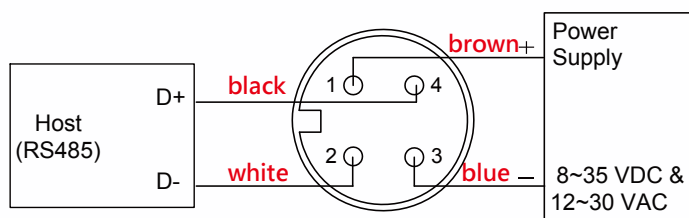
M type (4P)



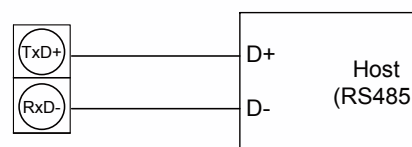
4P terminal

N type

RS-485 Diagram



M type (4P)

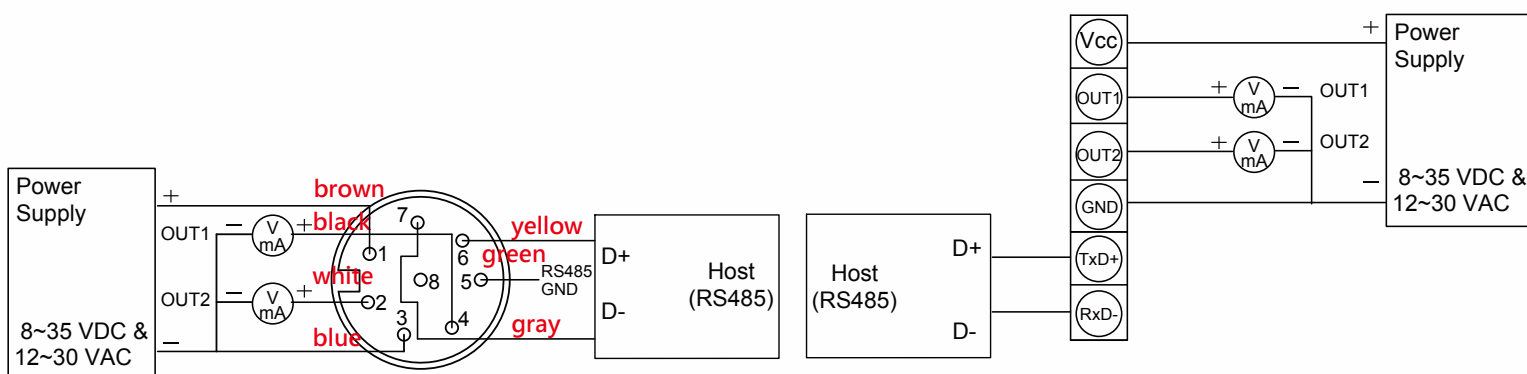


RS-485 Signal connector

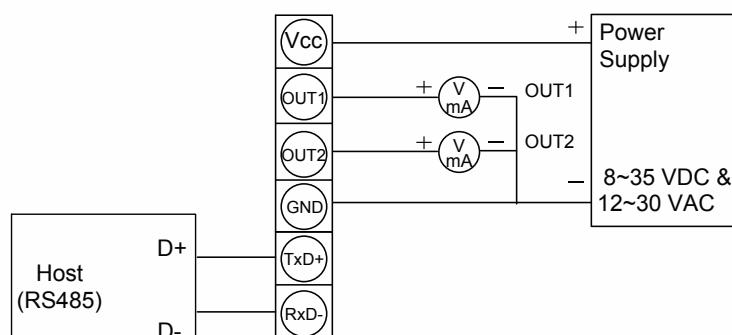
N type

※ when output of ordering code is RS-485(without analogue), RS-485 diagram of default setting is M type.

Analogue + RS-485 Diagram



M type (8P)



N type (M16)

Ordering Guide

ordering code ----->	THS80	6	-	T	18	1	H	00	1	-	D	M	M	2	U
Installation															
Output 1 (Physical quantity)															
Scaling 1 (Physical quantity)															
Output 1 (Analogue)															
Output 2 (Physical quantity)															
Scaling 2 (Physical quantity)															
Output 2 (Analogue)															
Display															
Electric Connector															
Filter															
remote type : standard 2 m PVC / TEFLON cable															
Option : other request or RS-485+analogue															

【Ordering item】

Installation	code	Output 1 (physical quantity)	code	Scale1 (physical quantity)	code	Output 1 (Analogue)	code
indoor	1	※please refer to physical quantity measuring range list		0~50 °C	30	4-20mA	1
duct (PC probe)	2	humidity	H	0~80 °C	38	0~20mA	2
duct (S.S. probe)	3	temperature	T	0~100 °C	40	0~10V	6
remote (PC probe, PVC cable)	4	dew point	D	0~120 °C	42	0~5V	7
remote (PC probe, TEFLON cable)	5	frost-point	F	0~180 °C	48	0~1V	8
remote (S.S. probe, TEFLON cable)	6	wet-bulb temperature	W	-20~+40 °C	13	RS-485 (2)	9
		vapor pressure	E	-40~+60 °C	14		
		mixture ratio	R	-40~+120 °C	16		
		absolute humidity	V	-40~+180 °C	18		
		specific enthalpy	S	-40~+200 °C	20		
		RS-485 (Default Temp.)	N	-70~+180 °C	49		
				as physical quantity measuring (1)	00		
				range list (H, F, W, E, R, V, S, RS-485)			
				special range	YY		

Output 2 (physical quantity)	code	Scale2 (physical quantity)	code	Output 2 (Analogue)	code
※please refer to physical quantity measuring range list		0~50 °C	30	4-20mA	1
humidity	H	0~80 °C	38	0~20mA	2
temperature	T	0~100 °C	40	0~10V	6
dew point	D	0~120 °C	42	0~5V	7
frost-point	F	0~180 °C	48	0~1V	8
wet-bulb temperature	W	-20~+40 °C	13	RS-485 (2)	9
vapor pressure	E	-40~+60 °C	14		
mixture ratio	R	-40~+120 °C	16		
absolute humidity	V	-40~+180 °C	18		
specific enthalpy	S	-40~+200 °C	20		
RS-485	N	-70~+180 °C	49		
(Default humidity. : 0~50 ± °C)		as physical quantity measuring (1)	00		
		range list (H, F, W, E, R, V, S, RS-485)			
		special range	YY		

Display code	Electric connector	code	Filter	code	Remote cable	code	Option/other request	code
yes	D	plastic cable gland	N	PC membrane filter (standard : PC probe)	P	max. cable length : 10 m	other request(quote as demand)(3)	W
no	X	M12 metal connector	M	sintered filter	S	standard 2 m PVC or TEFLON caable	RS-485+analogue	U
		(with 2 m cable)		S.S. Metal grid filter with mesh	M	5 m	※ M type-M12(8P) metal connector or	
				PC membrane filter + Metal mesh	G	other length	N type-M16 cable gland	

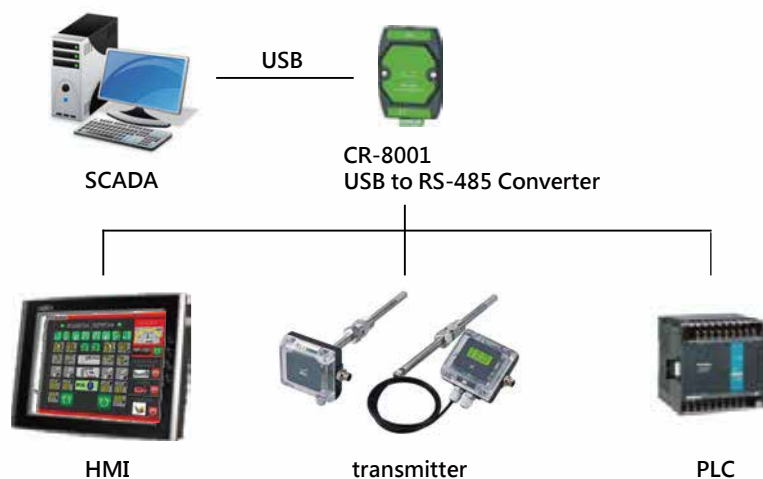
note :

(1) Default setting : please refer to page 2 , physical quantity measuring range list (H, F, W, E, R, V, S).

(2) Output 1 : code 9 (RS-485)→connector way :please refer to " RS-485 Diagram"

(3) Special request, please put code "W" at last

USB to Isolated RS-485 Application



※ Device

1. PC
2. RS-485 to USB Converter
3. power supply
4. UI software

※ option converter: CR-8001

※ EYC free programmable software

<http://www.eyc-tech.com/download/download149.html>