

ST-RL LINEARLY LINE SPEED / RPM / FREQUENCY CONVERTER OPERATION MANUAL

■ 特點

- Measuring Frequency **AUTO-RANGE** 0.01~100KHz / ~140KHz(optional) / Contact, NPN, PNP, Voltage pulse, or Sin wave 30~600Vp
- The decimal point will Auto-Moving according to input frequency so that shows highest resolution.
- User function, easily programmable via the top panel
- Analogue output, RS 485 communication port and 1 Relay output available
- Analogue output can be selected in 0~10V/0(4)~20mA
- Relay output for Hi / Lo energized with Start Delay / Hysteresis / Energized & De-energized Delay / Relay Energized Hold..... functions
- RS 485 communication port available
- CE Approved



FUNCTIONS

■ DISPLAY FUNCTIONS

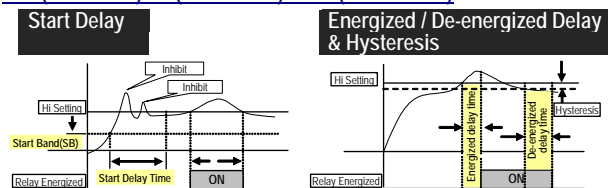
- **Maximum Hold or Minimum Hold:**
The converter will keep display in maximum value during power on until manual reset by front key in **[User Level]**
- **Write to display by RS485 command**
The display can be written by RS485 command. In past, The converter normally receive 4~20mA or 0~10V from AO card or BCD card of PLC. We support a new solution by RS485 writing in so that can be **save cost and wiring** into PLC.
- **Low Cut / Digital Filter / Digital Fine Adjustment**
 - **Low Cut:** setting range from -5000~+5000 counts.
 - If the setting value is positive, it means the range of absolute value will be 0; $PV \leq \text{Setting value}$, the display will be 0;

EX : Low Cut is set for 0.10, if the display is from -0.10~+0.10, that will be 0.
 - If the setting value is negative, it means the range of under setting value will be 0; $PV \leq -\text{Setting value}$, the display will be 0;

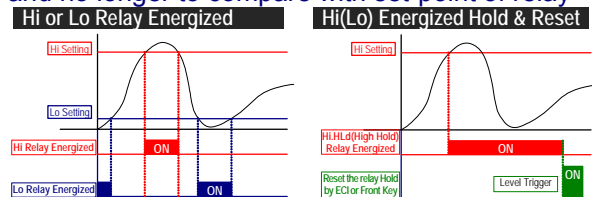
EX : Low Cut is set for -0.01, if the display is ≤ -0.01 , and all the display will be 0.
 - **Digital filter:** setting range from 0(None)/1~99 times. The digital filter can reduce the magnetic noise in field.
 - **Digital Fine Adjustment:** setting range from -19999~+29999; Users can get Fine Adjustment by front key of the converter, and "Just Key In" the value which user want to show in the current input signals.
- **Auto Range: selectable between Auto(Auto range)/SEMI(Semi-Auto range)/MANUL(Manual range)**
 - **Auto**(Auto range): The decimal point will be auto changed according to the input frequency so that **keep reading in the highest resolution.**
 - **SEMI**(Semi-Auto range): The decimal point will be auto changed according to the input frequency to **keep reading in the highest resolution under setting position of decimal point.**
 - **MANUL**(Manual range): The decimal point will be fixed according to the setting of decimal point. So, it's possible to show "overflow", if the input frequency is over the display range.

■ RELAY FUNCTIONS

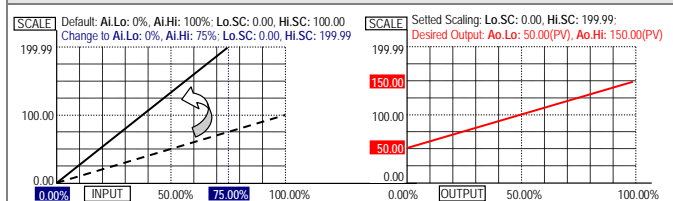
- **Start Delay**
- **Hysteresis:** Settable range from 0~9999 Counts
- **Relay energized delay:** Settable range from 0.1(second)~9(minutes)59.9(seconds);
- **Relay de-energized delay:** Settable range from 0.1(second)~9(minutes)59.9(seconds)



- **Relay energized mode Hi / Lo / Hi.HLd / Lo.HLd / DO**
 - **Hi:** Relay will energize when $PV > \text{Set-Point}$
 - **Lo:** Relay will energize when $PV < \text{Set-Point}$
 - **Hi.HLd (Lo.HLd):** When the PV Higher (or lower) than set-point, the relay will be energized and hold until manual reset by front key in **[User Level]**.
 - **DO:** Relay is energized by RS485 command directly, and no longer to compare with set-point of relay

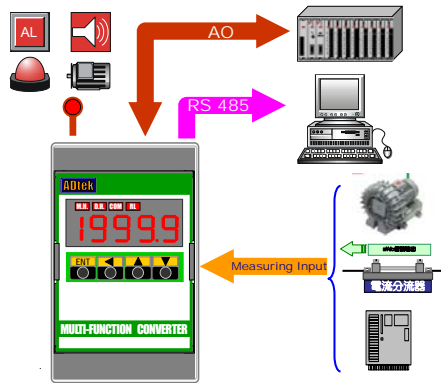


■ ANALOGUE OUTPUT FUNCTIONS

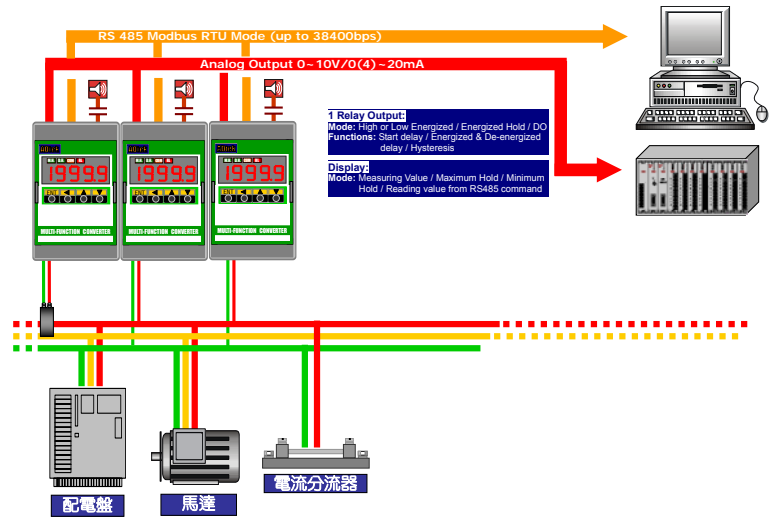


APPLICATION

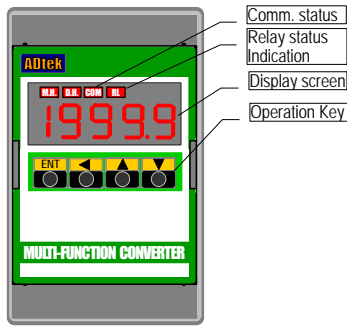
MONITORING MOTOR ROTATION
MECHINERY LINEARLY SPEED
TESTING INSTRUMENTS FOR FREQUENCY...
FREQUENCY MONITORING-RS485 COMMUNICATION
TESTING INSTRUMENTS



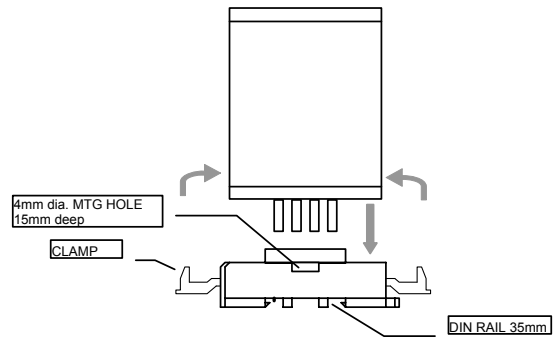
ST-VA & ST-RL APPLICATION FOR VOLTAGE / CURRENT & RPM MEASURING



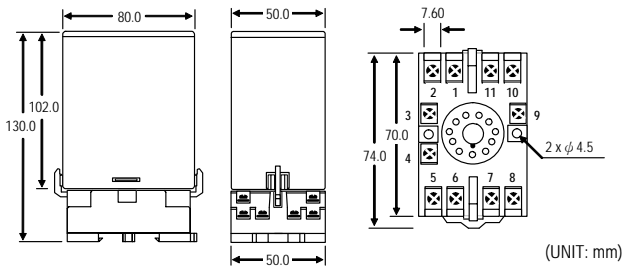
FRONT PANEL



INSTALLATION

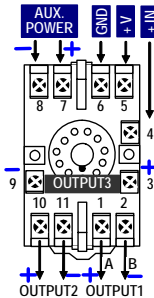


DIMENSIONS



CONNECTION DIAGRAM

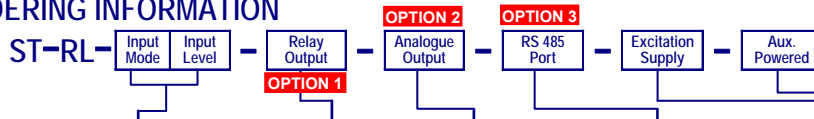
【ST-RL】



	OUTPUT 1 TERMINAL 1+ & 2-	OUTPUT 2 TERMINAL 10+ & 11-	OUTPUT 3 TERMINAL 3+ & 9-
3 O/P	RS485	ANALOGUE	RELAY
3 O/P	ANALOGUE	RELAY	RELAY
3 O/P	RS485	RELAY	RELAY
3 O/P	RELAY	RELAY	RELAY
2 O/P	RS485	ANALOGUE	
2 O/P	RS485	RELAY	
2 O/P	ANALOGUE	RELAY	
1 O/P	ANALOGUE		
1 O/P	RS485		
1 O/P	RELAY		

ORDER INFORMATION

ORDERING INFORMATION



CODE	INPUT MODE
C 00	Contact
N	NPN
P	PNP
V	Voltage pulse
05	5V p
12	12V p
24	24V p
S 36	30-600Vac

CODE	RELY O/P
N	None
R1	1 Relay
R2	2 Relay
R3	3 Relay

CODE	ANALOG O/P
N	None
V	0(1) - 5 V 0 - 10 V
I	0 - 10 mA 0(4) - 20 mA

CODE	RS485 PORT
N	None
8	RS 485






CODE	EXCIT. SUPPLY
N	NONE
E05	DC 5 V
E12	DC 12 V
E24	DC 24 V

CODE	AUX. POWER
A1	AC 115 V
A2	AC 230 V
OPTION 4	
ADL	AC/DC 20-56 V
ADH	AC/DC 85-264 V

3 outputs can be specified at most for Analogue, RS485 & 3 Relay

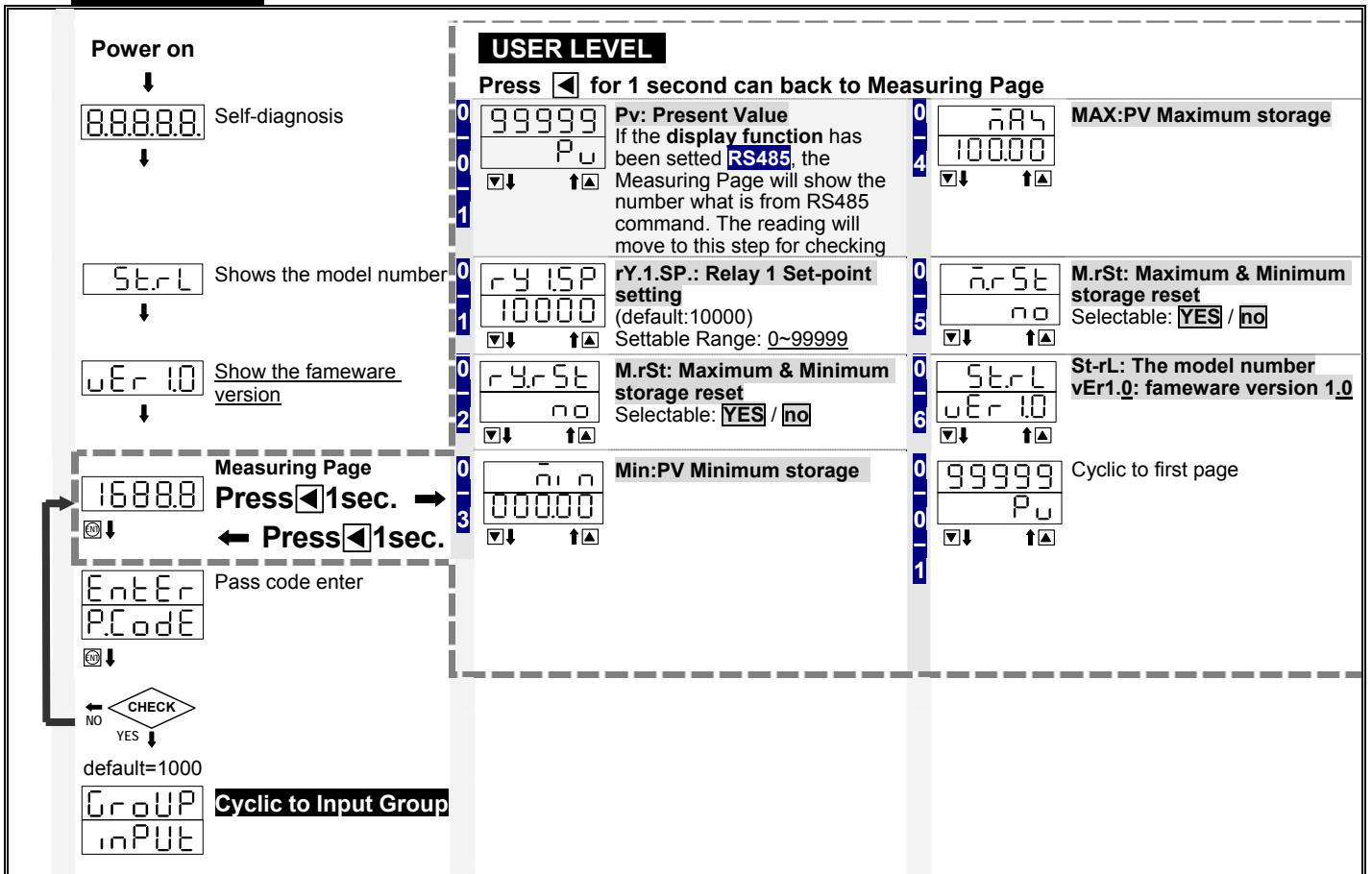
The excitation supply has to match the input mode. The standard is DC12V for 12Vp input mode.

OPERATING:

STEP	DESCRIPTION	DISPLAY	FLASH	REMARK
	BEFORE POWER ON, PLEASE CHECK THE SPECIFICATION AND CONNECTION AGAIN.			
	SELF-DIAGNOSIS AND ERROR CODE:			
	ouFL : Display is positive-overflow (Signal is over display range)	ouFL		(Please check the input signal)
	-ouFL : Display is negative-overflow (Signal is under display range)	-ouFL		(Please check the input signal)
	ouFL : ADC is positive-overflow (Signal is higher than input 120%)	ouFL		(Please check the input signal)
	-ouFL : ADC is negative-overflow (Signal is lower than input -120%)	-ouFL		(Please check the input signal)
	EEP / FAiL : EEPROM occurs error	EEP	FAiL	(Please send back to manufactory for repara)
	AiCnG / Pu : Calibrating Input Signal do not process	AiCnG	Pu	(Please process Calibrating Input Signal)
	AiC / FAiL : Calibrating Input Signal error	AiC	FAiL	(Please check Calibrating Input Signal)
	AoCnG / Pu : Calibrating Output Signal do not process	AoCnG	Pu	(Please process Calibrating Output Signal)
	AiC / FAiL : Calibrating Output Signal error	AiC	FAiL	(Please check Calibrating Output Signal)
	*Please enter to Engineer Level to check and set the parameters when users start to install the meter			➤ In Engineer Level , the screen will return to Measuring Page after do not press any key over 2 minutes, or press  for 1 second.
	*KEY FUNCTIONS:  SHIFT: (1) In each Function Index Page , press this key about 1 second will return to the Function Group . (2) In Function Setting Page , press this key about 1 second will return to the Function Index page . (3) During Setting, press this key will move the bright digit (i.e. can be adjusted digit)  UP: (1) During number Setting, press this key can roll the digit up. (2) In Function Setting Page , press this key can switch functions. (3) In Function Index Page , press this key will back to the last Function Index Page .  DOWN: (1) During number Setting, press this key can roll the digit down. (2) In Function Setting Page , press this key can switch functions. (3) In Function Index Page , press this key will go to the next Function Index Page .  ENTER: Press this key to confirm and save the setting.			

OPERATING DIAGRAM:

USER LEVEL



ENGINEER LEVEL --- INPUT GROUP

Measuring Page
1688.8

Pass code enter
Enter
PCode

CHECK
NO
YES
default=1000

INPUT GROUP
GROUP
input
Press **ENT** →
← Press **1** 1sec.

ENGINEER LEVEL

In **Function Index Page**, press **ENT** to enter **Function Setting Page** for setting;
press **1** over 1 second to return **Function Group Page**.

A	1	Pv.tYP Ln.SPd	Pv.tYP: Present Value type (default: rPM); Selectable: Ln.SPd / rPM / rPS / Hz / KHz Ln.SPd: Linearly Speed rPM: Rotation/Minute rPS: Rotation/Second Hz: Frequency Hz KHz: Frequency KHz > Press ENT to enter & setting	A	1	ito.Md Auto	ito.Md: Input time out Mode (default: AUto); Selectable: AUto / MAnUL > Press ENT to enter & setting
						2	If ito.Md has been selected MAnUL, This function will be showed out ito: How long will be time out (default: 0.0); Selectable: 0.0 sec~999.9sec > Press ENT to enter & setting
						3	rAnGE: Reading Range with decimal point switching. (default: AUto); Selectable: AUto / SEMi / MANUL AUTO (Auto range): The decimal point will be auto changed according to the input frequency so that keep reading in the highest resolution. SEMI (Semi-Auto range): The decimal point will be auto changed according to the input frequency so that keep reading in the highest resolution. MANUL (Manual range): The decimal point will be auto changed according to the input frequency to keep reading in the highest resolution under setting position of decimal point. > Press ENT to enter & setting
						4	diAMt: Diameter (default: 0.1000); Selectable: 0.0001~9.999M(公R) > Press ENT to enter & setting
						5	dp: Decimal Point (default: 0); Selectable: 0/0.0/0.00/0.000/0.0000 > Press ENT to enter & setting
						6	Factr: Factor for compensation of reading (default: 1.000); Settable: 0.001~9.999 > Press ENT to enter & setting
						7	Pv.SPn: Fine Span Adjustment for PV (default: 100.00%); Settable: 0~99999 > Press ENT to enter & setting
						8	S.Clr: ClearFine Span Adjustment for PV display (default: no); Settable: no/YES > Press ENT to enter & setting
						9	diPLY: Display Function (default: Pv); Selectable: Pv / Mini.H / MAX.H / RS485 Pv: Present Value Mini.H: Minimum. Hold MAX.H: Maximum Hold RS485: Writing to display from RS485 command > Press ENT to enter & setting
						10	Lo.Cut: Low Cut to show "0" (default: 0); Settable: ±19999 counts > Press ENT to enter & setting

※ When by the RS485 read present value (pv), can only choose **MANUL**

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ENGINEER LEVEL --- RELAY GROUP, ANALOGUE OUTPUT GROUP

(The groups will be hidden, if the meter without optional function)

ENGINEER LEVEL

In Function Index Page, press **[ENT]** to enter **Function Setting Page** for setting;
press **[ESC]** over 1 second to return **Function Group Page**.

GROUP **RELAY GROUP**

RELAY Press **[ENT]** →

▼↓ ▲↑ ← Press **[ESC]** 1sec.

B	1	rY.Sb	rY.Sb: Start band for Relay energized (default: 0); Settable: 0~9999 counts > Press [ENT] to enter & setting	B	4	rY1.HY	rY1.HY.: Relay 1 Hysteresis (default: 0); Settable: 0~5000 counts > Press [ENT] to enter & setting
B	2	rY.Sd	rY.Sd: Start delay time for Relay energized (default: 0:00.0); Settable: 0:00.0~9(m):59.9(s) > Press [ENT] to enter & setting	B	5	rY1.rd	rY1.rd: Relay 1 energized delay time (default: 0:00.0); Settable: 0:00.0~9(m):59.9(s) > Press [ENT] to enter & setting
B	3	rY1.Md	rY1.Md: Relay 1 energized mode (default: Hi); Selectable: oFF / Lo / Hi / Lo.HLd / Hi.HLd / do oFF : Turn off the Relay Lo : Low Level Energized; The relay energized when PV < Setpoint. Hi : High Level Energized; The relay energized when PV > Setpoint Lo.HLd : Low Level energized hold; When the PV lower than set-point, the relay will be energized and hold until manual reset by from key in User Level or E.C.I. Hi.HLd : High Level energized hold; When the PV higher than set-point, the relay will be energized and hold until manual reset by from key in User Level or E.C.I. do (Digital Output) : Relay energized by RS485 command > Press [ENT] to enter & setting	B	6	rY1.Fd	rY1.Fd: Relay 1 de-energized delay time (default: 0:00.0); Settable: 0:00.0~9(m):59.9(s) > Press [ENT] to enter & setting
B	1	rY.Sb		B	1	rY.Sb	Cyclic to first page

ENGINEER LEVEL

In Function Index Page, press **[ENT]** to enter **Function Setting Page** for setting;
press **[ESC]** over 1 second to return **Function Group Page**.

GROUP **ANALOGUE OUTPUT GROUP**

Ao Press **[ENT]** →

▼↓ ▲↑ ← Press **[ESC]** 1sec.

D	1	Ao.tYP	Ao.tYP: Analogue Output type selection (default: A.4-20); Settable: v.0-10 (0~10V) / v.0-5 (0~5V) / v.1-5 (1~5V) / A.0-20 (0~20mA) / A.4-20 (4~20mA) / A.0-10 (0-10mA) > Press [ENT] to enter & setting	D	5	Ao.SPn	Ao.SPn: Fine Span Adjustment for Analog High Output (default: 0); Settable: -19999~29999 > Press [ENT] to enter & setting
D	2	Ao.LS	Ao.LS: Analogue Low Output relative Low Scale (default: according to Lo.SC); Settable: -19999~19999 > Press [ENT] to enter & setting	D	6	Z.S.Clr	Z.S.Clr: Zero & Span Clear for Adjustment (default: nonE); Settable: nonE / Ao.Zro / Ao.SPn / both nonE : No clear Ao.Zro : Clear Zero Adjustment Ao.SPn : Clear Span Adjustment both : Clear Zero and Span Adjustment > Press [ENT] to enter & setting
D	3	Ao.HS	Ao.HS: Analogue High Output relative High Scale (default: according to Hi.SC); Settable: -19999~29999 > Press [ENT] to enter & setting	D	1	Ao.tYP	Cyclic to first page
D	4	Ao.Zro	Ao.Zro: Fine Zero Adjustment for Analog Low Output (default: 0); Settable: -19999~29999 > Press [ENT] to enter & setting	D	1	Ao.tYP	

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➤ ENGINEER LEVEL --- RS485 GROUP

(The groups will be hidden, if the meter without optional function)

The screenshot shows the 'ENGINEER LEVEL' menu. At the top, it says 'In Function Index Page, press [Enter] to enter Function Setting Page for setting; press [Left Arrow] over 1 second to return Function Group Page.' Below this, there are three main sections:

- RS485 GROUP:** Shows 'GROUP RS485' with a 'Press [Enter] →' prompt and '← Press [Left Arrow] 1sec.' below it. Navigation arrows are present.
- Address:** Shows 'AdRES 1' with 'Adres: Device number of the meter (default: 1); Settable: 1~255' and a 'Press [Enter] to enter & setting' prompt.
- Baud:** Shows 'bAUD 9600' with 'baud: Baud rate (default: 9600); Settable: 1200 / 2400 / 4800 / 9600 / 19200 / 38400' and a 'Press [Enter] to enter & setting' prompt.
- Priority:** Shows 'Pr ity none' with 'Prity: Parity (default: n.Stb.1); Settable: n.Stb.1 (None, 1 stop bit) / n.Stb.2 (None, 2 stop bits) / odd / EvEn (Even)' and a 'Press [Enter] to enter & setting' prompt.
- Address (Cyclic):** Shows 'AdRES 1' with 'Cyclic to first page' and a 'Press [Enter] to enter & setting' prompt.
- Cyclic to Input Group:** Shows 'GroUP inPUt' with 'Cyclic to Input Group' and navigation arrows.

■ RS485 ModBus RTU Mode

1. Function 03H (Read Holding Registers)

Request Data Frame; EX: Read the data of display value(0000H starts from 1 Word)

SLAVE Address	FUNCTION	Starting Address Hi	Starting Address Lo	No. of Word Hi	No. of Word Lo	CRC Lo	CRC Hi
01H	03H	00H	00H	00H	01H	84H	0AH

Response Data Frame; EX: The response value is "0"

SLAVE Address	FUNCTION	Byte count	Data Hi	Data Lo	CRC Lo	CRC Hi
01H	03H	02H	00H	00H	B8H	44H

Request Data Frame (EX: Continue to request the data of 10 points)

SLAVE Address	FUNCTION	Starting Address Hi	Starting Address Lo	No. of Word Hi	No. of Word Lo	CRC Lo	CRC Hi
01H	03H	00H	00H	00H	0AH	C5H	CDH

Response Data Frame

SLAVE Address	FUNCTION	Byte count	Data(1) Hi	Data(1) Lo	Data(10) Hi	Data(10) Lo	CRC Lo	CRC Hi
01H	03H	14H	00H	00H	01H	00H	--	--

2. Writing Command by Function 06H (Preset Single Register)

Request Data Frame

SLAVE Address	FUNCTION Code	Starting Address Hi	Starting Address Lo	Preset DATA Hi	Preset DATA Lo	CRC Lo	CRC Hi
01H	06H	00H	00H	00H	02H	08H	0BH

Response Data Frame

SLAVE Address	FUNCTION Code	Starting Address Hi	Starting Address Lo	Preset DATA Hi	Preset DATA Lo	CRC Lo	CRC Hi
01H	06H	00H	00H	00H	02H	08H	0BH

ST-RL ADDRESS TABLE ****Address numbers are Hexadecimal**

➤ **User Level**

Name	Address	Range	Explain	Initial	Write/Read	Note
TWO WORDS AREA						
PV_H*	0000h		Present Value *(High Word)		R	
PV_L*	0001h		Present Value *(Low Word)		R	
RY1.SP_H*	0002h	-19999~99999	Relay 1 Set Point *(High Word)	0000h	R/W	
RY1.SP_L*	0003h	-19999~99999	Relay 1 Set Point *(Low Word)	C350h	R/W	
RY1.SP_H*	0034h	-19999~99999	Relay 1 Set Point *(High Word)	0000h	R/W	★
RY1.SP_L*	0035h	-19999~99999	Relay 1 Set Point *(Low Word)	C350h	R/W	★
RY2.SP_H*	0036h	-19999~99999	Relay 2 Set Point *(High Word)	0000h	R/W	★
RY2.SP_L*	0037h	-19999~99999	Relay 2 Set Point *(Low Word)	C350h	R/W	★
MIN_H*	0004h		The Minimum of PV *(High Word)		R	
MIN_L*	0005h		The Minimum of PV *(Low Word)		R	
MAX_H*	0006h		The Maximum of PV *(High Word)		R	
MAX_L*	0007h		The Maximum of PV *(Low Word)		R	
DIAMETER_H*	0008h	0.0001~ 9.9999 M	Diameter of rotor *(High Word)	0000h	R/W	
DIAMETER_L*	0009h		Diameter of rotor *(Low Word)	03E8h	R/W	
PV.SPN_H*	000Ah	0~99999	PV Span *(High Word)		R/W	
PV.SPN_L*	000Bh		PV Span *(Low Word)		R/W	
RS485_H*	000Ch	0~99999	PV showing from RS485 command(data) *(High Word)		R/W	
RS485_L*	000Dh		PV showing from RS485 command(data) *(Low Word)		R/W	
AO.LS_H*	000Eh	0~99999	Analogue Output Low Scale *(High Word)	0000h	R/W	
AO.LS_L*	000Fh		Analogue Output Low Scale *(Low Word)	0000h	R/W	
AO.HS_H*	0010h	0~99999	Analogue Output High Scale *(High Word)	0001h	R/W	
AO.HS_L*	0011h		Analogue Output High Scale *(Low Word)	869Fh	R/W	

★- 2 Relay only

➤ **Engineer Level**

[Input Group]						
Name	Address	Range	Explain	Initial	Write/Read	Note
ONE WORD AREA						
DP	0012h	0~4	Decimal Point for set-point 0: 00000 1: 0000.0 2: 000.00 3: 00.000 4: 0.0000	0000h	R/W	
P_DP	0013h	0~4	Decimal Point for PV 0: 00000 1: 0000.0 2: 000.00 3: 00.000 4: 0.0000	00h	R	
MIN.DP	0014h	0~4	Decimal Point for Minimum Memorize 0: 00000 1: 0000.0 2: 000.00 3: 00.000 4: 0.0000	0000h	R	
MAX.DP	0015h	0~4	Decimal Point for Maximum Memorize 0: 00000 1: 0000.0 2: 000.00 3: 00.000 4: 0.0000	0000h	R	
RELAY STATUS	0016h		Relay Status bit0=1 Relay 1 ON bit0=0 Relay 1 OFF	0000h	R/W	
RELAY STATUS	0038h		Relay Status bit0=1 Relay 1 ON bit0=0 Relay 1 OFF	0000h	R/W	★
SYSTEM STATUS	0017h		SYSTEM STATUS bit0=1 EEP fail; bit1=1 Input calibration fail; bit2=1 Input calibration NG; bit3=1 Analogue Output calibration fail; bit4=1 Analogue Output calibration NG	0000h	R	

★- 2 Relay only

RES	0018h	0~1	Reset Maximum & Minimum Value 0: No 1: Yes	0000h	R/W	
PV.TYP	0019h	0~3	PV Type 0: Linearly Line Speed 1: RPM(Rotation/Minute) 2: RPS(Rotation/Second) 3: Frequency	0000h	R/W	
PPR	001Ah	1~9999 (0.1 second)	Pulse/Rotation	0001h	R/W	
FACTOR	001Bh	0.001~9.999	Factor of display	0000h	R/W	
Name	Address	Range	Explain	Initial	Write/Read	Note
E.UNIT	001Ch	0~3	Engineering Unit 0: M/min 1: CM/min 2: Yard/min 3: Feet/min	0000h	R/W	
ITO.MD	001Dh	0~3	Input Time out mode 0: Auto 1: Manual	0000h	R/W	
ITO	001Eh	0001~9999 (0.1 second)	Input Time out	03E8h	R/W	
RANGE	001Fh	0001~9999 (0.1 second)	Input Range 0: Auto 1: Semi-Auto 2: Manual	0000h	R/W	
S.CLR	0020h		Clear the PV Span 0: No 1: Yes	0000h	R/W	
LoCUT	0021h	-19999~19999	Low Cut	0000h	R/W	
dSPly	0022h	0~3	Display Mode 0: PV 1: Minimum Hold 2: Maximum Hold 3: RS485	0000h	R/W	
Avg	0023h	1~99	Average for Present Value	0005h	R/W	
dFilt	0024h	0~99	Digital Filter	0000h	R/W	
PCode	0025h	0000~9999	Pass Code	03E8h	R/W	
FLoCk	0026h	0~3	Function Lock 0: none 1: User Level 2: Engineer Level 3: All	0000h	R/W	

[Relay Group]

Name	Address	Range	Explain	Initial	Write/Read	Note
rY5b	0027h	00000~19999	Start Band of Relay	0000h	R/W	
rY5d	0028h	0000~5999 (0.1second)	Start Delay Time of Relay	0000h	R/W	
rY1nd	0029h	0~5	Relay1 Energized Mode 0: oFF(no use); 1: Lo(Low Energized); 2: Hi(High Energized) 3: Lo Hold(Low Energized Hold) 4: High Hold(High Energized Hold) 5: DO(Digital Output);	0002h	R/W	
rY1HY	002Ah	0000~19999	Hysteresis of Relay1	0000h	R/W	
rY1rd	002Bh	0000~5999 (0.1second)	Energized Delay Time of Relay1	0000h	R/W	
rY1Fd	002Ch	0000~5999 (0.1second)	De-Energized Delay Time of Relay1	0000h	R/W	
rY1nd	0039h	0~5	Relay1 Energized Mode 0: oFF(no use); 1: Lo(Low Energized); 2: Hi(High Energized) 3: Lo Hold(Low Energized Hold) 4: High Hold(High Energized Hold) 5: DO(Digital Output);	0002h	R/W	★
rY1HY	003Ah	0000~19999	Hysteresis of Relay1	0000h	R/W	★
rY1rd	003Bh	0000~5999 (0.1second)	Energized Delay Time of Relay1	0000h	R/W	★
rY1Fd	003Ch	0000~5999 (0.1second)	De-Energized Delay Time of Relay1	0000h	R/W	★
rY2nd	003Dh	0~5	Relay1 Energized Mode	0002h	R/W	★

			0: OFF (no use); 1: Lo (Low Energized); 2: Hi (High Energized) 3: Lo Hold (Low Energized Hold) 4: High Hold (High Energized Hold) 5: DO (Digital Output);			
rY2HY	003Eh	0000~19999	Hysteresis of Relay2	0000h	R/W	★
rY2Fd	003Fh	0000~5999 (0.1second)	Energized Delay Time of Relay2	0000h	R/W	★
rY2Fd	0040h	0000~5999 (0.1second)	De-Energized Delay Time of Relay2	0000h	R/W	★
rYr5t	002Dh	0~1	Reset for Relay Energized Hold 0: No 1: Yes	0000h	R/W	

★- 2 Relay only

[AO Group]

Name	Address	Range	Explain	Initial	Write/Read	Note
AOtYP	002Eh	0~5	Analog Output Type 0: 0~10V 1: 0~5V 2: 1~5V 3: 0~20mA 4: 4~20mA 5: 0~10mA	0000h	R/W	
Name	Address	Range	Explain	Initial	Write/Read	Note
r5r5t	002Fh	0~3	The clear of AO_ZERO and AO_SPAN 0: None 1: AO_ZERO 2: AO_SPAN 3: Both	0000h	R/W	
AOtLnt	0030h	00.00%~ 110.00%	Analogue Output High Limit	2AF8h	R/W	

[RS485 Group]

Name	Address	Range	Explain	Initial	Write/Read	Note
AdRES	0031h	1~255	RS485 address	0001h	R/W	
bAUD	0032h	0~5	RS485 baud rate 0: 1200 1: 2400 2: 4800 3: 9600 4: 19200 5: 38400	0003h	R/W	
Pr1tY	0033h	0~3	RS485 parity 0: n-8-1 1: n-8-2, 2: odd, 3: even,	0001h	R/W	