

This user's manual describes the explanation for Profile 003. Before reading this Profile 003 Procedure, please read Profile Common Manual (IM 77P01C01-02E). Then check the instrument connection conditions, and check Mode or set Mode if necessary. This user's manual should be kept in safety place.

1. DATA MONITORING MODE

IMPORTANT

When word accessing to Write request flag (RY n4), pay attention to the other bits in (RY n0 to RY nF).

● Read-out data from controller (PV, CSP, OUT)

The measured input value(PV), set point value (CSP) and control output value (OUT) can be read-out.

[PROCEDURE]

- Read out Normal connection of slave flag [RX (n+5)0 to RX (n+5)4] and Receive data valid flag (RX n3). And check that those are both [1].
- Read out the required data from Remote Register (RWn n+0 to RWn n+E).

● Write in data to controller (SP, MOUT)

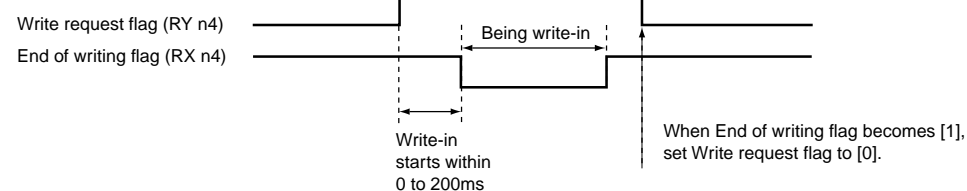
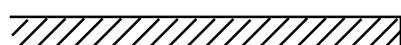
The set point value (SP) and manual output value (MOUT) can be written-in.

[PROCEDURE]

- Check that End of writing flag (RX n4) is [1].
- Write-in data to the relative address (RWw m+0 to RWw m+E).
- Set Write request flag (RY n4) from [0] to [1].
- Wait until End of writing flag (RX n4) becomes from [0] to [1].
- Write-in [0] to Write request flag (RY n4).

(Note) When write-in MOUT, it is necessary that A/M flag should be manual.

Write-in data to Remote Register (RWw m+0 to RWw m+E)



After power on or after changing mode to Data Monitoring Mode, all parameters of (RWw m+0 to RWw m+E) are written in to controllers at first write request. But at second write request and after, the only changed parameter is written in.

● Read out condition of controller and it's change (A/M, R/L, Alarm)

Read out and Write in of AUTO/MAN (A/M) condition and remote/local (R/L) condition, and read out Alarm (AL1 to AL3) condition can be executed. But the UT350/UT320 haven't remote/local (R/L) condition.

[READ OUT PROCEDURE]

- Read out Normal connection of slave flag [RX (n+5)0 to RX (n+5)4] and Receive data valid flag (RX n3). And check that those are both [1].
- Read out the required data from Remote Input among [RX n8 to RX (n+2)6].

[WRITE IN PROCEDURE]

- Write [0] or [1] to the relative Remote Output among [RY n8 to RY (n+1)4].

■ Content of SIGNAL NAME used within Profile

Remote Register

Signal name	Contents
1. PV to 5.PV	Measured input value (PV) of address 1 to 5 controller
1. CSP to 5.CSP	Set point value (CSP) of address 1 to 5 controller
1. OUT to 5.OUT	Output value (OUT) of address 1 to 5 controller
1. SP to 5.SP	Set point value (SP) of address 1 to 5 controller
1. MOUT to 5.MOUT	Manual Output value (MOUT) of address 1 to 5 controller But only when the controller is manual (M) condition, MOUT can be written in.

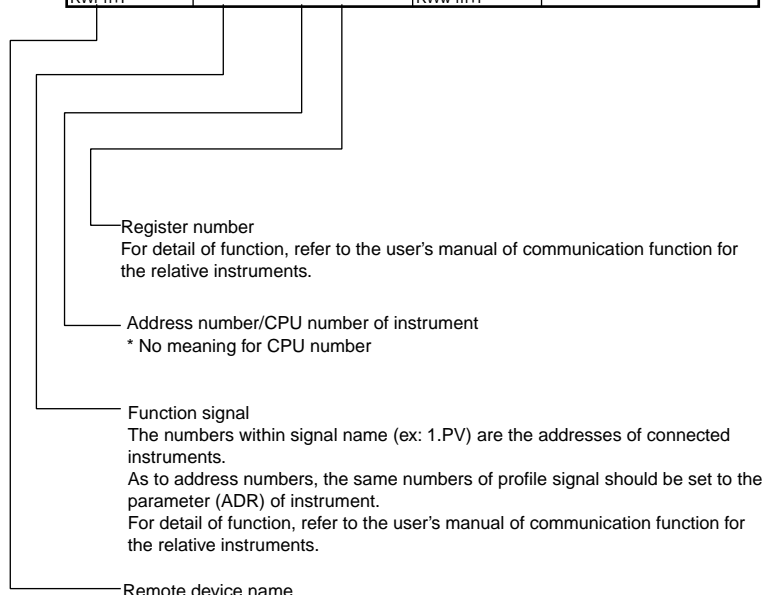
Remote Input/Output

Signal name	Contents
1. A/M to 5.A/M	Changing AUTO(A)/MAN(M) of address 1 to 5 controller [1] at MAN, [0] at AUTO
1. R/L to 5.R/L	Changing Remote(R)/Local(L) of address 1 to 5 controller [1] at Remote, [0] at Local
1. ALM1 to 5.ALM1	Alarm 1 condition of address 1 to 5 controller [1] at Alarm on
1. ALM2 to 5.ALM2	Alarm 2 condition of address 1 to 5 controller [1] at Alarm on
1. ALM3 to 5.ALM3	Alarm 3 condition of address 1 to 5 controller [1] at Alarm on

<<PROFILE 003 for Data Monitoring Mode>>

Remote Register

Read out area			Write in area		
Remote→Master			Master→Remote		
Address	Signal name	Contents	Address	Signal name	Contents
RWn n+0	1.PV	1/1 D0003	RWw m+0		
RWn n+1	2.PV	2/1 D0003	RWw m+1		
RWn n+2	3.PV	3/1 D0003	RWw m+2		
RWn n+3	4.PV	4/1 D0003	RWw m+3		
RWn n+4	5.PV	5/1 D0003	RWw m+4		
RWn n+5	1.CSP	1/1 D0004	RWw m+5	1.SP	1/1 D0301
RWn n+6	2.CSP	2/1 D0004	RWw m+6	2.SP	2/1 D0301
RWn n+7	3.CSP	3/1 D0004	RWw m+7	3.SP	3/1 D0301
RWn n+8	4.CSP	4/1 D0004	RWw m+8	4.SP	4/1 D0301
RWn n+9	5.CSP	5/1 D0004	RWw m+9	5.SP	5/1 D0301
RWn n+A	1.OUT	1/1 D0005	RWw m+A	1.MOUT	1/1 D0217
RWn n+B	2.OUT	2/1 D0005	RWw m+B	2.MOUT	2/1 D0217
RWn n+C	3.OUT	3/1 D0005	RWw m+C	3.MOUT	3/1 D0217
RWn n+D	4.OUT	4/1 D0005	RWw m+D	4.MOUT	4/1 D0217
RWn n+E	5.OUT	5/1 D0005	RWw m+E	5.MOUT	5/1 D0217
RWn n+F			RWw m+F		



Remote Input/Output

Read out area			Write in area		
Remote→Master			Master→Remote		
Address	Signal name	Contents	Address	Signal name	Contents
RX n0		Data monitoring mode	RY n0		Request for data monitoring mode
RX n1		Parameter setting mode	RY n1		Request for parameter setting mode
RX n2			RY n2		
RX n3		Receive data valid flag	RY n3		
RX n4		End of writing	RY n4		Write request
RX n5			RY n5		
RX n6			RY n6		
RX n7			RY n7		
RX n8	1.A/M	1/1 I0065	RY n8	1.A/M	1/1 D0201
RX n9	2.A/M	2/1 I0065	RY n9	2.A/M	2/1 D0201
RX nA	3.A/M	3/1 I0065	RY nA	3.A/M	3/1 D0201
RX nB	4.A/M	4/1 I0065	RY nB	4.A/M	4/1 D0201
RX nC	5.A/M	5/1 I0065	RY nC	5.A/M	5/1 D0201
RX nD			RY nD		
RX nE			RY nE		
RX nF			RY nF		
RX (n+1)0	1.R/L	1/1 I0066	RY (n+1)0	1.R/L	1/1 D0203
RX (n+1)1	2.R/L	2/1 I0066	RY (n+1)1	2.R/L	2/1 D0203
RX (n+1)2	3.R/L	3/1 I0066	RY (n+1)2	3.R/L	3/1 D0203
RX (n+1)3	4.R/L	4/1 I0066	RY (n+1)3	4.R/L	4/1 D0203
RX (n+1)4	5.R/L	5/1 I0066	RY (n+1)4	5.R/L	5/1 D0203
RX (n+1)5			RY (n+1)5		
RX (n+1)6			RY (n+1)6		
RX (n+1)7			RY (n+1)7		
RX (n+1)8	1.ALM1	1/1 I0097	RY (n+1)8		
RX (n+1)9	1.ALM2	1/1 I0098	RY (n+1)9		
RX (n+1)A	1.ALM3	1/1 I0099	RY (n+1)A		
RX (n+1)B	2.ALM1	2/1 I0097	RY (n+1)B		
RX (n+1)C	2.ALM2	2/1 I0098	RY (n+1)C		
RX (n+1)D	2.ALM3	2/1 I0099	RY (n+1)D		
RX (n+1)E	3.ALM1	3/1 I0097	RY (n+1)E		
RX (n+1)F	3.ALM2	3/1 I0098	RY (n+1)F		
RX (n+2)0	3.ALM3	3/1 I0099	RY (n+2)0		
RX (n+2)1	4.ALM1	4/1 I0097	RY (n+2)1		
RX (n+2)2	4.ALM2	4/1 I0098	RY (n+2)2		
RX (n+2)3	4.ALM3	4/1 I0099	RY (n+2)3		
RX (n+2)4	5.ALM1	5/1 I0097	RY (n+2)4		
RX (n+2)5	5.ALM2	5/1 I0098	RY (n+2)5		
RX (n+2)6	5.ALM3	5/1 I0099	RY (n+2)6		
RX (n+2)7			RY (n+2)7		
RX (n+2)8			RY (n+2)8		
RX (n+2)9			RY (n+2)9		
RX (n+2)A			RY (n+2)A		
RX (n+2)B			RY (n+2)B		
RX (n+2)C			RY (n+2)C		
RX (n+2)D			RY (n+2)D		
RX (n+2)E			RY (n+2)E		
RX (n+2)F			RY (n+2)F		
RX (n+5)0		Normal connection of slave 01	RY (n+5)0		
RX (n+5)1		Normal connection of slave 02	RY (n+5)1		
RX (n+5)2		Normal connection of slave 03	RY (n+5)2		
RX (n+5)3		Normal connection of slave 04	RY (n+5)3		
RX (n+5)4		Normal connection of slave 05	RY (n+5)4		
RX (n+5)5			RY (n+5)5		
RX (n+5)6			RY (n+5)6		
RX (n+5)7			RY (n+5)7		
RX (n+5)8			RY (n+5)8		
RX (n+5)9			RY (n+5)9		
RX (n+5)A			RY (n+5)A		
RX (n+5)B			RY (n+5)B		
RX (n+5)C			RY (n+5)C		
RX (n+5)D			RY (n+5)D		
RX (n+5)E			RY (n+5)E		
RX (n+5)F			RY (n+5)F		Request for re-scanning
RX (n+6)0		Reserved	RY (n+6)0		Reserved
		Reserved			Reserved
		Reserved			Reserved
		Reserved			Reserved
RX (n+7)A		Reserved	RY (n+7)A		Reserved
RX (n+7)B		Remote READY flag	RY (n+7)B		Reserved
RX (n+7)C		Reserved	RY (n+7)C		Reserved
RX (n+7)D		Reserved	RY (n+7)D		Reserved
RX (n+7)E		Reserved	RY (n+7)E		Reserved
RX (n+7)F		Reserved	RY (n+7)F		Reserved

2. PARAMETER SETTING MODE

Parameter Setting Data of controller are all stored to D register of controller. Accessing to D register, write in and read out of parameter can be executed.

IMPORTANT

When word accessing to Read request flag (RY n5) and Write request flag (RY n4), pay attention to the other bits in (RY n0 to RY nF).

● Read-out a lump of controller parameter data

Maximum 14 of D registers can be read out at once by designating address (1 to 99) of D register in controller. The address of controller is the value that is designated in ADR of Set up Parameter. Take care that the addresses of controllers do not duplicate each other.

[PROCEDURE]

- (1) Check that End of writing flag (RX n4) and End of reading flag (RX n5) are both [1].
- (2) Set the first address of the read required sequential parameters to First parameter address (RWw m+E).
- (3) Write the controller address (ADR) in the upper bite of (ADR and number of parameter) (RWw m+F) and the parameter number to be read out in the lower bite.
- (4) Set Read request flag (RY n5) from [0] to [1].
- (5) During read out data from controller, the End of reading flag (RX n5) is [0]. Wait until End of reading flag (RX n5) becomes from [0] to [1].
- (6) Write-in [0] to Read request flag (RY n5).
- (7) The required number's data are stored in (RWr n+0 to RWr n+D).

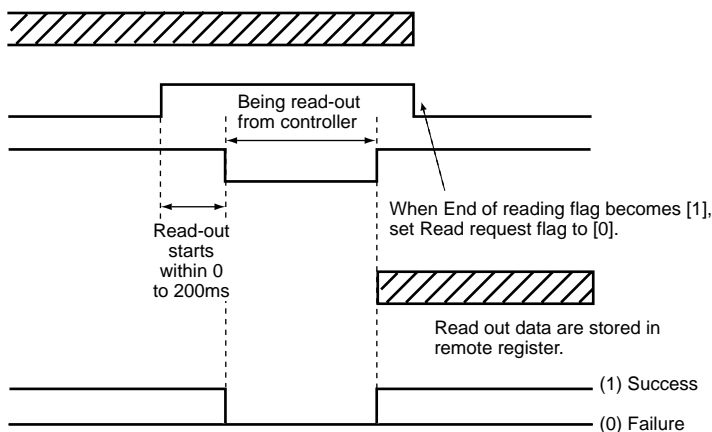
(Note) When the flags of Read request flag (RY n5) and Write request flag (RY n4) are set [1] at the same time, the Read request flag has priority.

Write address of controller, number of read-out parameter and read-out first parameter address in D register, to Remote Register (RWw m+E, RWw m+F).

Read request flag (RY n5)
End of reading flag (RX n5)

Read out data are stored to Remote Register (RWr n+0 to RWr n+D)

Success flag of write-in/read-out (Receive data valid flag) (RX n3)



● Write-in a lump of parameter data to controller

Maximum 14 of D registers can be written in at once by designating address (1 to 99) of D register in controller. The address of controller is the value that is designated in ADR of Set up parameter. Take care that the addresses of controllers do not duplicate each other.

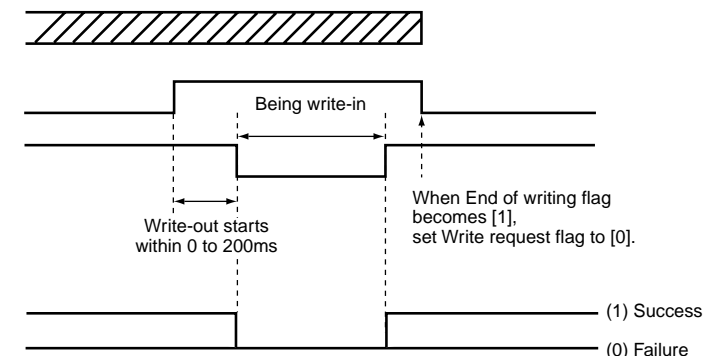
[PROCEDURE]

- (1) Check that End of writing flag (RX n4) and End of reading flag (RX n5) are both [1].
- (2) Set the first address of the write required sequential parameters to First parameter address (RWw m+E).
- (3) Write the controller address in the upper bite of (ADR and number of parameter) (RWw m+F) and the parameter number to be written-in in the lower bite.
- (4) Write in the designed number of data in (RWw m+0 to RWw m+D).
- (5) Set Write request flag (RY n4) from [0] to [1].
- (6) During write in date to controller, the End of writing flag (RX n4) is [0]. Wait until End of writing flag (RX n4) becomes from [0] to [1].
- (7) Write-in [0] to Read request flag (RY n4).

Write address of controller, write-in first parameter address and setting data in D register, to Remote Register (RWw m+0 to RWw m+F)

Write request flag (RY n4)
End of writing flag (RX n4)

Success flag of write-in/red-out (Receive data valid flag) (RX n3)



<<PROFILE PARAMETER SETTING MODE>>

Remote Register

Read out area			Write in area		
Remote→Master			Master→Remote		
Address	Signal name	Contents	Address	Signal name	Contents
RWr n+0	First parameter+0	Read out data	RWw m+0	First parameter+0	Setting data
RWr n+1	First parameter+1	Read out data	RWw m+1	First parameter+1	Setting data
RWr n+2	First parameter+2	Read out data	RWw m+2	First parameter+2	Setting data
RWr n+3	First parameter+3	Read out data	RWw m+3	First parameter+3	Setting data
RWr n+4	First parameter+4	Read out data	RWw m+4	First parameter+4	Setting data
RWr n+5	First parameter+5	Read out data	RWw m+5	First parameter+5	Setting data
RWr n+6	First parameter+6	Read out data	RWw m+6	First parameter+6	Setting data
RWr n+7	First parameter+7	Read out data	RWw m+7	First parameter+7	Setting data
RWr n+8	First parameter+8	Read out data	RWw m+8	First parameter+8	Setting data
RWr n+9	First parameter+9	Read out data	RWw m+9	First parameter+9	Setting data
RWr n+A	First parameter+10	Read out data	RWw m+A	First parameter+10	Setting data
RWr n+B	First parameter+11	Read out data	RWw m+B	First parameter+11	Setting data
RWr n+C	First parameter+12	Read out data	RWw m+C	First parameter+12	Setting data
RWr n+D	First parameter+13	Read out data	RWw m+D	First parameter+13	Setting data
RWr n+E	First parameter address		RWw m+E	First parameter address	
RWr n+F	ADR and number of parameters		RWw m+F	ADR and number of parameters	

[Example]

In case of write in data to five registers of D register (from D0301 to D0305) of address2 instrument:

- First parameter address: Write in [012D](HEX).
- ADR and number of parameters: Write in [0205](HEX).
(Upper one byte: Address number, Lower one byte: number of parameter)

Remote Input/Output

Read out area			Write in area		
Remote→Master			Master→Remote		
Address	Signal name	Contents	Address	Signal name	Contents
RX n0	Data monitoring mode		RY n0	Request for data monitoring mode	
RX n1	Parameter setting mode		RY n1	Request for parameter setting mode	
RX n2			RY n2		
RX n3	Read/Write data valid flag		RY n3		
RX n4	End of writing		RY n4	Write request	
RX n5	End of Reading		RY n5	Read request	
RX n6			RY n6		
RX n7			RY n7		
RX n8			RY n8		
RX n9			RY n9		
RX nA			RY nA		
RX nB			RY nB		
RX nC			RY nC		
RX nD			RY nD		
RX nE			RY nE		
RX nF			RY nF		
RX (n+1)0			RY (n+1)0		
:			:		
:			:		
RX (n+1)F			RY (n+1)F		
RX (n+2)0			RY (n+2)0		
:			:		
:			:		
RX (n+2)F			RY (n+2)F		
RX (n+3)0			RY (n+3)0		
:			:		
:			:		
RX (n+3)F			RY (n+3)F		
RX (n+4)0			RY (n+4)0		
:			:		
:			:		
RX (n+4)F			RY (n+4)F		
RX (n+5)0	Normal connection of slave 01		RY (n+5)0		
RX (n+5)1	Normal connection of slave 02		RY (n+5)1		
RX (n+5)2	Normal connection of slave 03		RY (n+5)2		
RX (n+5)3	Normal connection of slave 04		RY (n+5)3		
RX (n+5)4	Normal connection of slave 05		RY (n+5)4		
RX (n+5)5			RY (n+5)5		
RX (n+5)6			RY (n+5)6		
RX (n+5)7			RY (n+5)7		
RX (n+5)8			RY (n+5)8		
RX (n+5)9			RY (n+5)9		
RX (n+5)A			RY (n+5)A		
RX (n+5)B			RY (n+5)B		
RX (n+5)C			RY (n+5)C		
RX (n+5)D			RY (n+5)D		
RX (n+5)E			RY (n+5)E		
RX (n+5)F			RY (n+5)F		
RX (n+6)0	Reserved		RY (n+6)0	Reserved	
:			:		
:			:		
RX (n+6)F	Reserved		RY (n+6)F	Reserved	
RX (n+7)0	Reserved		RY (n+7)0	Reserved	
:			:		
:			:		
RX (n+7)8	Reserved		RY (n+7)8	Reserved	
RX (n+7)9	Reserved		RY (n+7)9	Reserved	
RX (n+7)A	Reserved		RY (n+7)A	Reserved	
RX (n+7)B	Remote ready flag		RY (n+7)B	Reserved	
RX (n+7)C	Reserved		RY (n+7)C	Reserved	
RX (n+7)D	Reserved		RY (n+7)D	Reserved	
RX (n+7)E	Reserved		RY (n+7)E	Reserved	
RX (n+7)F	Reserved		RY (n+7)F	Reserved	