


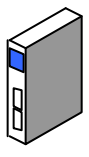
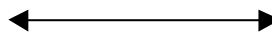

# 1.1 Fuji Micrex-F Series

## 1.1.1 Micrex-F Serial Interface

The following section describes the system configuration and interface between Fuji Micrex-F PLC and TOP by RS-232C/RS-422.

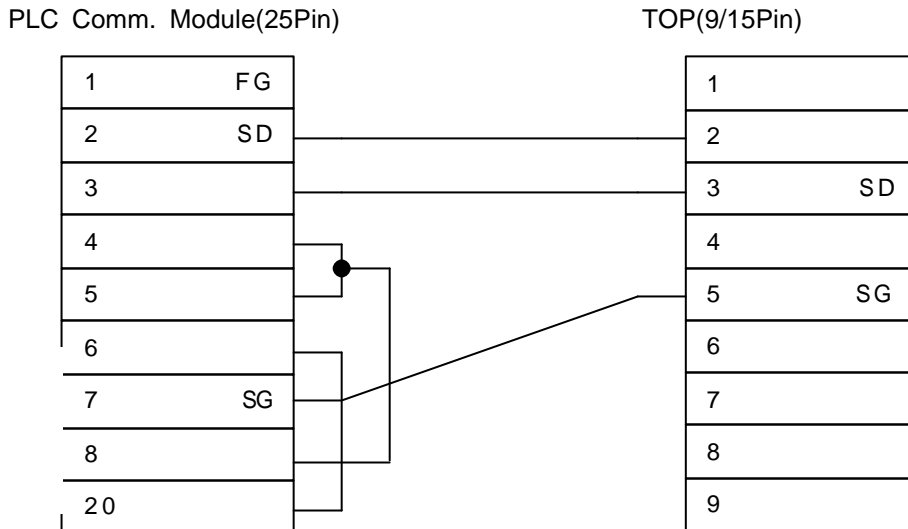
### 1.1.2 System Configuration

The above figure shows system configuration to connect Micrex-F PLC to TOP using serial Interface.

PLC	Comm. Module	Cable	TOP
			
F80H, F120H, F250	FFU120B	Refer to Cable Connection (RS-232C, RS-422)	All TOP
F80H, F120H, F120S, F140S, F150S, F250	FFK120A	Refer to Cable Connection (RS-232C)	

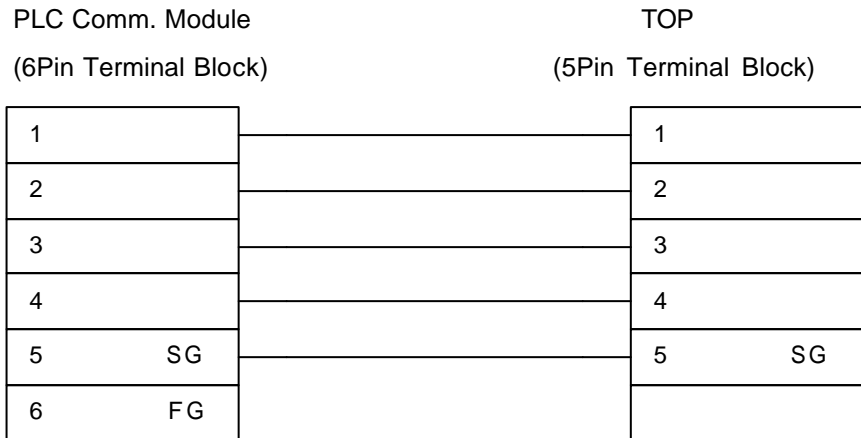
#### 1.1.2.1 Cable Diagram

(1) RS-232C (FFU120B, FFK120A TOP (for 9/15 Pin Connector))

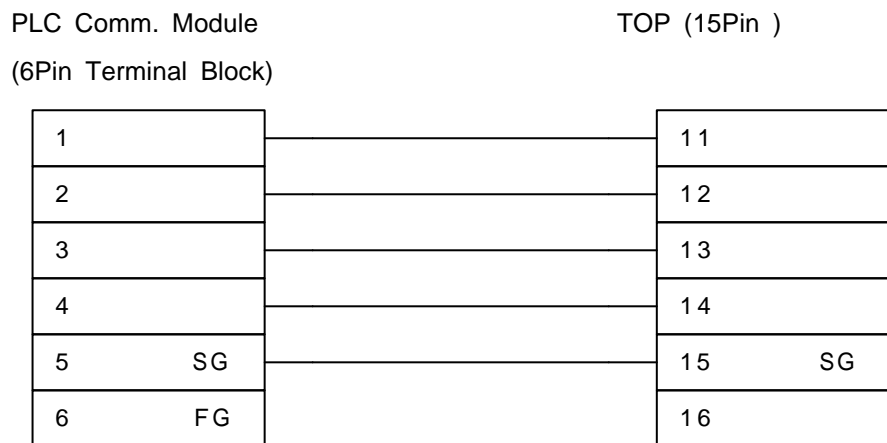


6 & 20 Common

(2) RS-422 (FFU120B TOP (for 5Pin Terminal Block))



(3) RS-422 (FFU120B TOP(for 15 Pin Connector Type))

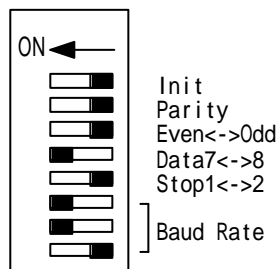


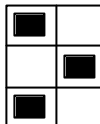
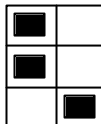
### 1.1.2.2 Micrex-F PLC Setup

#### 1) Hardware Setup

##### Parameter Setup

Parameters are set by Dip Switch in FFU-120B or FFK-120AA0J2-C214-S1 unit.



Switch	Setting Item	Set Switch Status	
		ON	OFF
Init *1	Initialization	Switch Set	File Set
Parity	Parity	Exist	None
Even<->Odd	Even/Odd Parity	Even	Odd
Data7<->8	Data Bit	8 Bit	7 Bit
Stop1<->2	Stop Bit	2 Bit	1 Bit
Baud Rate	Baud Rate	9600 bps 	19200 bps 



**REF.**

\*1 Set Init Dip Switch to 'OFF(File Set)'.

\*2 BCC is set by only software.

#### Mode Set(FFU-120B)

Switch	Setting Content
1	RS-232C
3	RS-485

In case of RS-485, set Station Number.

## 2) Software Set in Monitoring Communication Type

### (1) Monitoring Communication Type

Monitoring Communication Type is Interface Protocol between Fuji PLC and external equipments(TOP). Through FFU120B(version 2 or above) or FFK120A(Version 2 or above), register Device address of Tag of TOP in Monitoring Area(PK Area) of Micrex-F PLC , TOP read data of PK Area in a communication frame. Therefore communication speed is improved.

## (2) Restriction of Monitoring Communication

Monitoring Communication Area(PK Area) is also used for Program-Loader, and so MAX. Monitor Point that TOP(External Equipment) can use is 433 points. 6 sets of FFU/FFK is connectable for F120H, and 3 sets for F80H in Monitoring Communication Type.(Refer following list)

PLC	Monitor Point	Num. Of FFU/FFK
F80H	433	3 sets
F120H		6 sets



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1. 1 word or 1 bit is calculated as 1 monitor point.
2. Number of point and connection include Program-Loader.

## MAX. Number of Monitor Point in a Loader

Monitor/Loader	D20	D25
Ladder Monitor	Max.96 Point	Max.204 Point
Data Monitor	Max.14 Point	Max. 56 Point

MAX. Reg. Point of a FFU120B or FFK120A is 74 Points.

When using 2 or more sets of FFU120B in a PLC Base Rack, it is possible to use MAX. 71 points for 16bit Word and MAX. 42 points for 32bit Word.

(Calculation -->  $X \times 3 + Y \times 5$  : X :Number of 16bit Word , Y : Number of 32bit Word)

According to above to , number of system buffer for 'READ' used in a screen of TOP must be smaller than number calculated in in case of using 2 or more sets of FFU120B .

If number of System Buffer for 'READ' on a Base Screen of TOP is over 74, communication speed of the screen is decreased to 1/4 by .

(3) FFU/FFK Initial Setting

In order to monitor Communication, 'Init' Dip switch of FFU/FFK must be set to 'File'(Dip SW OFF).

Setup system for FFU/FFK, write initial program and transmit it to Micrex- F PLC. A role of this program is permission of Monitoring Area (PK Area) Access. After then, other communication parameters are transmitted to PLC.

(4) System Initial Setting(Based on D20 Graphic Loader)

Input Power

Push 'AUX'

Push 'F1'key : System Definition

Push 'Read' key, and 'Ent' key : P-CPSL LDR

Push 'F4' key : Registering Message Module

Following example shows how to use a FFU and a FFK. In this case, FFU module is established in base board slot #2, T-link No. of FFK is set as 80.

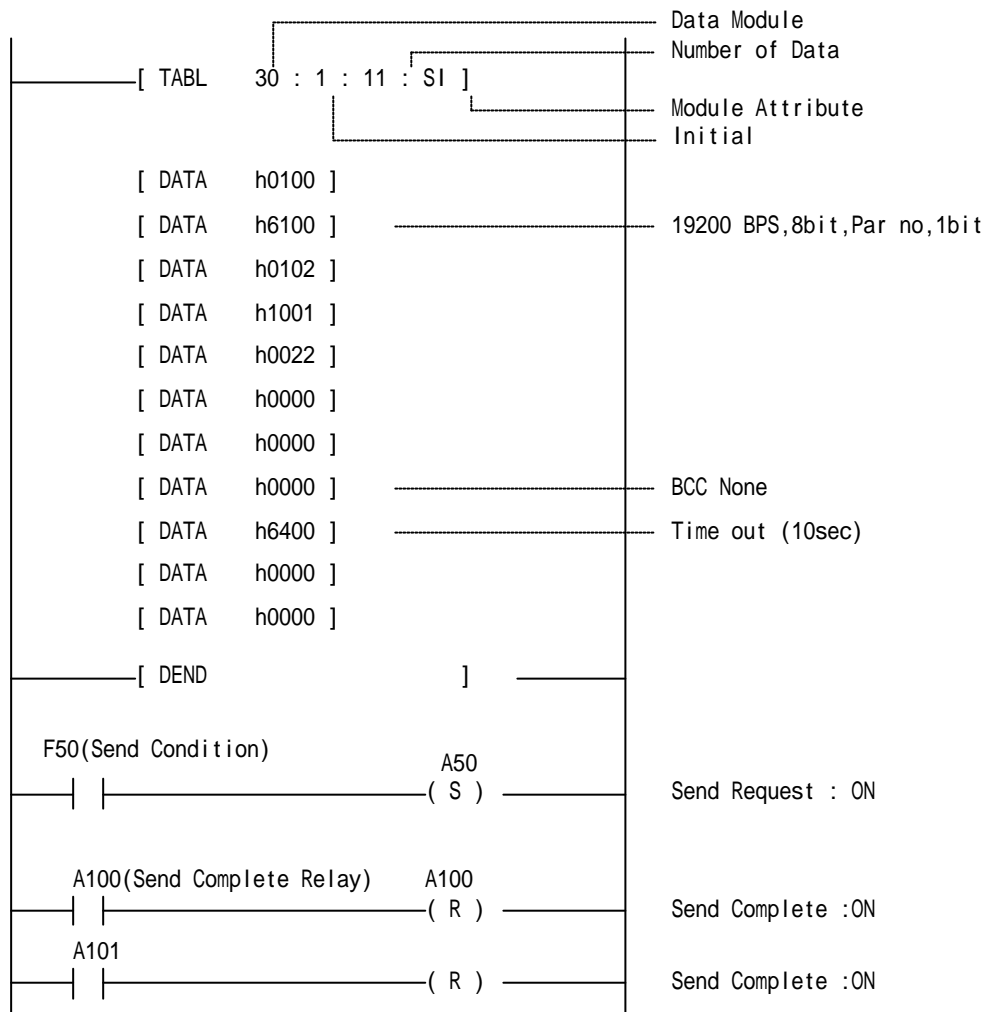
(Please refer manual of FFK120B/FFK120A)

No	Data Module	Service(0:Not Used,1:Init.,2:Send,3:Receive)	Link(0~3:T-Link, 4~5:P-Link, 6:24, 7:SUMINET)	Capsule No.	Channel
00	30	1	0	02	0
01	31	1	0	80	0
02					
.					
.					
.					

Push 'F10' key

Push 'Load' key, and 'Ent' key : Save

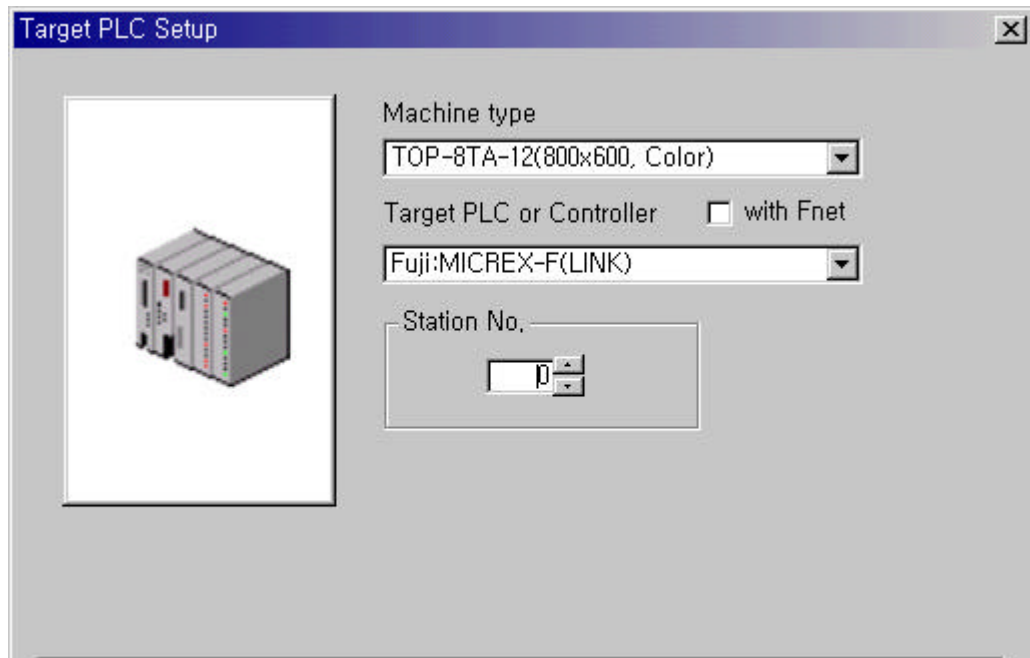
(5) Example of Init. Set Program



### 1.1.2.3 TOP Setup

#### (1) TOP Designer Setup

Select "Fuji:MICREX-F(LINK)" in Controller Type.



#### (2) TOP Serial Setup

Settings are as follows.

- Serial Baud Rate : Set same as PLC's setting
- Serial Data Bit : Set same as PLC's setting
- Serial Stop Bit : Set same as PLC's setting
- Serial Parity Bit : Set same as PLC's setting
- Serial Signal Level : Set same as PLC's setting
- Controller's Station No. at Comm. Diagnosis(0~31) : In case of RS-485, set same as PLC's setting and '0' for RS-232C

### 1.1.3 Available Address List

Following list is MICREX-F PLC's Address to enable to read/write in TOP.

(1) Usable address in FFU-120B/FFK-120A

Device	Dev.No	Type	Size	MOLNO	ATTR
In/Out (B)	0	Word	16	00	01
Aux. Relay (M)	1	Word	16	01	01
KEEP Relay (K)	2	Word	16	02	01
Special Relay (F)	3	Word	16	03	01
Announce Relay (A)	4	Word	16	04	01
P-Link Memory (L)	5	Word	16	14	01
Timer-SV (TS)	6	Word	32	0A	02
Timer-CV (TR)	7	Word	32	0B	02
Counter-SV (CS)	8	Word	32	0C	02
Counter-CV (CR)	9	Word	32	0D	02
Data Memory (BD)	10	Word	32	0E	02

CV: Current Value, SV: Set Value

(2) Address Setting Rang up to PLC

Device/PLC	F50/F50H	F60	F80H	F120H	F120S/F140S/F150S
B	WB0099	WB0099	WB0399	WB0399	WB0511
M	WM0031	WM0127	WM0255	WM0255	WM0511
K	WK0031	WK0063	WK0063	WK0063	WK0063
F	WF0029	WF0029	WF0067	WF0109	WF0125
A	WA0019	WA0019	WA0021	WA0021	WA0045
L	-	-	-	WL0511	WL0511
TS	TS0127	TS0255	TS0255	TS0255	TS0511
TR	TR0127	TR0255	TR0255	TR0255	TR0511
CS	CS0031	CS0127	CS0255	CS0255	CS0511
CR	CR0031	CR0127	CR0255	CR0255	CR0511
BD	BD0127	BD0255	BD0255	BD0255	BD0255

File Memory is based on 16 bit. All File memory check the range based on Max. assignable size.