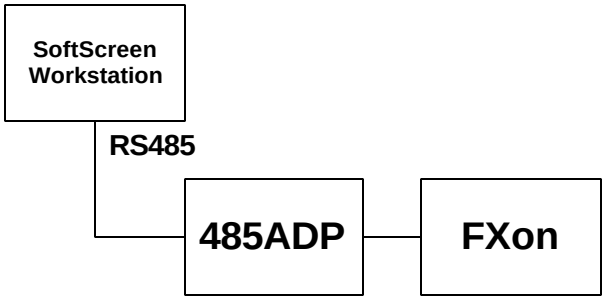
OPERATOR INTERFACE PRODUCTS APPLICATION NOTE

Subject: Connecting 20XX and 31XX Workstations To A Mitsubishi FXon PLC AN# 1071A
Date: January 2, 1998
Name: Shiu Moy
Page: 1 of 4
Description: Hardware and software settings to connect 20XX and 31XX workstations to a Mitsubishi FXon PLC

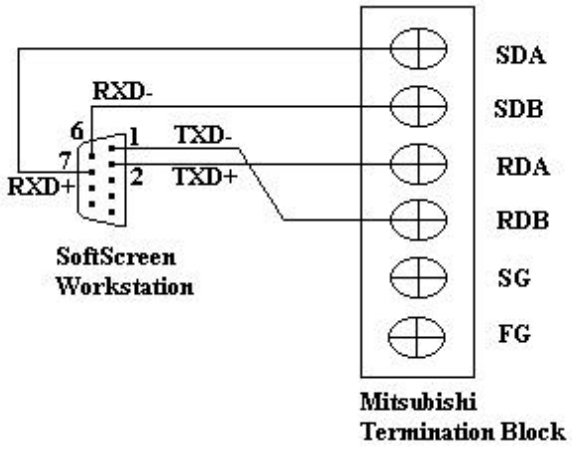
Mitsubishi FXon PLC version 1.20 or higher supports the A series protocol which allows the 20XX and 31XX series workstations to communicate using the SoftScreen Melsec A driver. Hardware and software setting details are described below.

Hardware Setup

Connect the SoftScreen workstations to a FXon PLC using the following setup and cabling.



SoftScreen workstation setup



RS422 Cabling to the Mitsubishi PLC

PLC Settings

Setting the transmission specification

The least significant byte of register D8120 is used for setting the transmission specification.

	Bit Number							
	7	6	5	4	3	2	1	0
Functions	**Baud Rates**				**Stop Bits**	**Parity**		**Data Length**
	0111 = 300 0100 = 600 0101 = 1200 0110 = 2400		0111 = 4800 1000 = 9600 1001 = 19200		0 = 1 Stop Bit 1 = 2 Stop Bits	00 = No Parity 01 = Even Parity 11 = Odd Parity		0 = 7 Data Bits 1 = 8 Data Bits

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Setting the transmission control protocol

The most significant byte of register D8120 is used for setting the transmission protocol.

	Bit Number							
	15	**14**	**13**	**12**	**11**	**10**	**9**	**8**
Function	**Transmission Control Protocol**	**Protocol**	**Sum Check**	**Not Used**				
	0 = Dedicated Protocol Format 1 is used 1 = Dedicated Protocol Format 4 is used	0 = Dedicated Protocol is not used 1 = Dedicated Protocol is used	0 = Sum Check not added 1 = Sum Check added**	Bit 8 to Bit 12 = 0				

**Sum Check must be enabled

Example 1

To set up communications for 9600,N,8,1 using Protocol Format 1.

Bit Number															
15	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1

The bit pattern above translates to a value of 6081 hex or 24705 decimal.

Example 2

To set up communications for 19200,E,7,1 using Protocol Format 4.

Bit Number															
15	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
1	1	1	0	0	0	0	0	1	0	0	1	0	0	1	0

The bit pattern above translates to a value of E092 hex or 57490 decimal.

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In both of the above examples, when the value is written to the register (on-line using Medoc or coded into the ladder program) the power to the PLC must be cycled in order for the changes to take effect.

Setting the station address

The station address of the PLC is set by writing a valid number in the range 0-15 to register D8121. Again, once this has been set, the power to the PLC must be cycled.

Setting the time-out check time

This setting refers to the duration after termination of a failed transmission from the Xycom to the PLC, until the Send sequence is initialized. When 1 character is 12 bits, the minimum setting of the time-out check time is as follows:

Baud rate (bps)	Time to receive 1 character (ms)	Time-out check time (set value)
300	40	50 ms (5)
600	20	30 ms (3)
1200	10	20 ms (2)
2400	5	10 ms (1)
4800	2.5	10 ms (1)
9600	1.25	10 ms (1)
19200	0.625	10 ms (1)

The desired set value should be written to register D8129. There is no need to cycle power. Consult the FX-485PC-IF user's manual for more information about setting up the FXon.

Xycom Settings

Port settings for SoftScreen for DOS and driver configuration for SoftScreen for Windows95 must match the settings in the Mitsubishi registers D8120 and D8121.

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FXon Address

The following FXon addresses are accessible using Mitsubishi SoftScreen driver. This table is not comprehensive.

Data Type	Range
Input relay (X)	X000-X0177
Output relay (Y)	Y000-Y0177
Auxiliary relay (M)	M000-M0511
Timer contact (TS)	TS000-TS063
Counter contact (CS)	CS000-CS031 CS235-CS254
Timer preset Value (TN)	TN000-TN063 (16-bit) TN000-TN062 (32-bit)
Counter preset value (CN)	CN000-CN031 (16-bit) CN000-CN030 (32-bit)
Data register (D)	D000-D0255 (16-bit) D000-D0254 (32-bit)