



SERIES SIX

PROGRAMMABLE CONTROLLERS

GEK-83537C

240 I/O References
496 I/O References

REMOTE I/O MODULES

GENERAL DESCRIPTION

The Remote I/O Modules, which include Driver and Receiver circuit boards, provide a serial, long-distance, communications interface between local and remote I/O locations. The Remote I/O Modules features and benefits are summarized in Table 1.

The Remote I/O modules support two types of serial communications interfaces: 2-twisted pair and RS-232-C (modem). The twisted pair interface consists of two unidirectional data lines (Transmit Data and Receive Data) through which data and control signals can be transferred 10,000 feet (3 km) at rates up to 57.6K baud.

The RS-232-C (modem) interface allows a Remote I/O Station to be located at a distance (from a Central Processing Unit (CPU), or Local I/O Station) limited only by the specifications of the modem employed and I/O response time requirements. Signal definitions are as described by the EIA RS-232C standard; six baud rates are selectable by the user, ranging from 110 to 57.6K baud.

The modules can support blocks of 128 or 256 I/O references; the block sizes are jumper-selectable on the Driver module. However, the user must reserve 8 of these I/O references for Series Six status information,

leaving blocks of 240 or 496 I/O references, respectively, for general purpose inputs and outputs.

Another user option allows the Remote output points to hold their last state in the event of a CPU or communications link failure, and/or to allow the CPU to continue running during a fault or a parity error in the Remote station, or a link failure between the Driver and Receiver.

These module also contain diagnostic circuitry and Light-Emitting Diodes (LED's) that indicate a failure has occurred in the Remote I/O Driver, the serial communications link, or the Remote station (including the Remote I/O Receiver). These LED's operate only when the module is installed in a properly powered I/O rack.

NOTE

Remote I/O Driver and Receiver modules, having model numbers IC600BF801A and IC600BF901A are not compatible with their successors, BF801B and 901B. Consequently, a model A module cannot be utilized in the same remote I/O configuration with a model B module.

TABLE 1. FEATURES AND BENEFITS

FEATURES	BENEFITS
Long-distance communications between CPU and I/O.	Reduces I/O wiring costs.
Dual-mode communication capability: <i>≡≡</i> twisted-pair <i>≡≡</i> modem	Useful in a variety of applications: <i>≡≡</i> high-speed over direct wires <i>≡≡</i> long distances over other media
120 I-120 0 or 248 I-248 0 References per module.	Expandability.
Error detection lights.	Simplifies troubleshooting.
Jumper-selectable modes of operation.	Flexibility in applications.
APPLICATIONS	
* Remote Sewage Aeration Lagoons	* Tank Farm Monitor
* Large Conveyor Systems	* Pumping Stations
* Electric Sub-station Monitors	* Mining
* Operator Consoles	* Moving Cranes
§ Distributed Machine Lines	

MODULE SPECIFICATIONS	
<ul style="list-style-type: none"> ● Dimensions: Circuit Board: 8.15 x 11.0 (inches) 208 x 280 (mm) Faceplate: 12.46 x 1.175 (inches) 317 x 30 (mm) ● Humidity: 5% - 95% (non-condensing) ● Storage Temperature: 0° to 70°C 	<ul style="list-style-type: none"> ● Power Requirements: Twisted-Pair Interface +5 Vdc, 2A (supplied by Standard I/O Rack P.S.) Modem Interface, +5 Vdc, +12 Vdc, -12 Vdc (supplied by High-Capacity I/O Rack P.S.) ● Operating Temperature: 0° to 60°C (outside rack)

TWISTED-PAIR CABLE SPECIFICATIONS
<ul style="list-style-type: none"> ● Length, Maximum - 10,000 feet (3 kilometers) ● Two Individual Shielded, Twisted Pairs ● 22 AWG, Minimum ● 15 pf/foot, Maximum } Maximum signal loss of 20 db (total) at 100 KHz. ● Cable Type - National Electric Cable Co. 22P1SLCBT or equivalent ● Connector (Driver and Receiver End) - D-Subminiature Type, Cannon DBC25P with 207908-7 Hood or Equivalent (Standard RS-232C Connector)

RS-232C (MODEM) CABLE SPECIFICATIONS
<ul style="list-style-type: none"> ● Length, Maximum - 50 feet (15 meters) ● Overall Shield ● 24 AWG, Minimum ● Connector, Driver or Receiver End - D-Subminiature Type, Cannon DBC25P with 207908-7 Hood or Equivalent (Standard RS-232C Connector) ● Connector, Modem - User Selected

NOTE ON MODEM SELECTION

When selecting a modem, be sure to specify one that is compatible with the Series Six Remote I/O.

Modems must be truly asynchronous at the desired baud rate. (Some modems are claimed to be asynchronous but in actuality place restrictions on data flow.)

The following RS-232-C signals are used:

PIN	SIGNAL
1	Chassis Ground (modem side only)
2	Tx Data
3	Rx Data
7	Signal Ground

In order to utilize auto-synchronization, some modems need to be configured according to the data format used. With Remote I/O, transmission can be in any of the following formats (user-selectable):

110 Baud, 12 bits/char. with either parity	
110 Baud, 12 bits/char. with no parity*	
300	} Baud, { 11 bits/char. with either parity { 11 bits/char. with no parity
1200	
2400	
9600	
19.2K	
57.6K	

(Factory setting is 57.6K baud, 11 bits/char. ODD parity.)

*When no parity is selected, verticle checksum error-checking is still in place.

At 1200 baud, Racal-Vadic 3450 Series modems work well when configured for 11 bit characters.

Modems which require at least one character time delay between messages (not truly asynchronous operation) may not function in Remote I/O systems.

FIGURE 1. SPECIFICATIONS

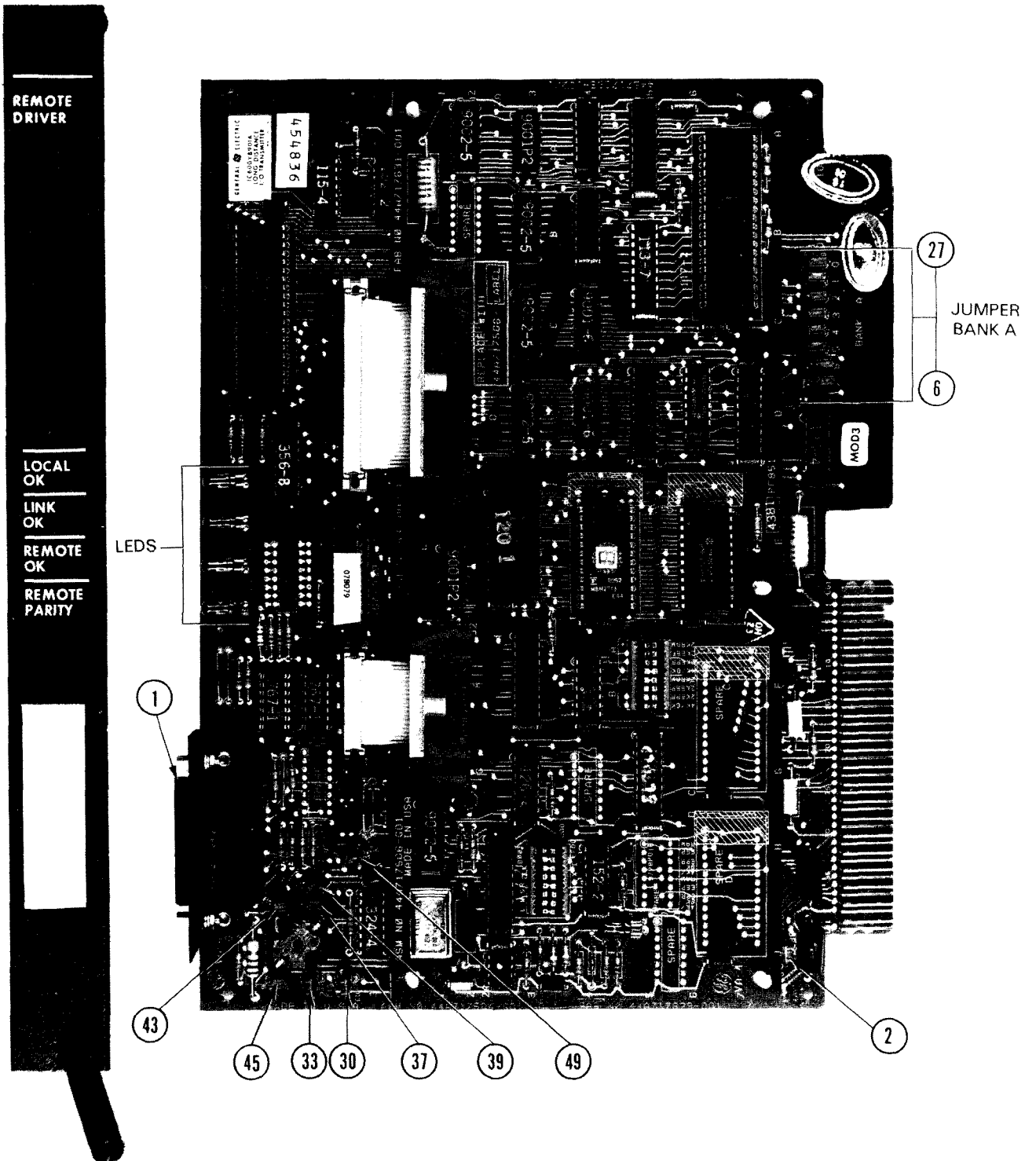


FIGURE 2. REMOTE I/O DRIVER USER ITEMS (Part 1 of 2)

① J3 Connector: Communications interface cable connector (For link to Remote I/O Receiver or Modem).

<u>JUMPER</u>	<u>FUNCTION</u>	<u>FACTORY SETTING</u>	<u>ALTERNATE SETTING</u>
②	Quantity of I/O	1-2 (120)	2-4 (248)
⑥	Remote Parity Error Effect ¹	6-7 (Halt)	5-6 (Run)
⑨	Comm. Failure Effect ¹	9-10 (Halt)	8-9 (Run)
⑫	Odd/Even	12-13 (Odd)	11-12 (Even)
⑮	Parity	15-16 (Yes)	14-15 (No)
⑱	Factory Set	18-19	None
⑳	Baud Rate	21-22 (MSB)	20-21
㉔		24-25	23-24
㉗		27-28 (LSB)	26-27
㉓	Carrier Detect	30-50 (No)	29-30 (Yes)
㉖	Clear-To-Send	33-51 (No)	32-33 (Yes)
㉙	Output Mode	36-37 } (Tw. Pair)	35-37 } (RS-232C)
㉛		38-39 }	39-40 }
㉞	Input Mode	42-43 } (Tw. Pair)	41-43 } (RS-232C)
㉟		44-45 }	45-46 }
㊱	Sensitivity	48-49 (Med)	47-49 (Min)

LED INDICATORS

LED	DESCRIPTION
LOCAL OK	ON - Remote I/O Driver module operating normally. OFF - Fault in Remote I/O Driver.
LINK OK	ON - Communications link between this module and Remote Receiver good. OFF - Communications error between this module and Remote Receiver.
REMOTE OK	ON - Remote system is operating normally. OFF - Fault exists in Remote I/O system. (Power supply failure, cable loose, module not seated properly, etc.).
REMOTE PARITY	ON - Remote system has no parity errors, operation normal. OFF - Parity error detected in Remote I/O system, CPU will stop unless option jumper on this module set for CPU to RUN when error detected.

FIGURE 2. REMOTE I/O DRIVER (Part 2 of 2)

1. The Hold Last State and the Remote Parity Error Effect or Communications Failure Effect functions are available with Remote Driver/Remote Receiver modules revision C (P/N IC600BF901C/IC600BF801C or IC600YB901C/IC600YB801C, respectively). These functions do not operate properly with earlier revisions. If you require use of these functions on earlier modules, please contact the GE Fanuc Field Service Group at 804-978-5624 for assistance.

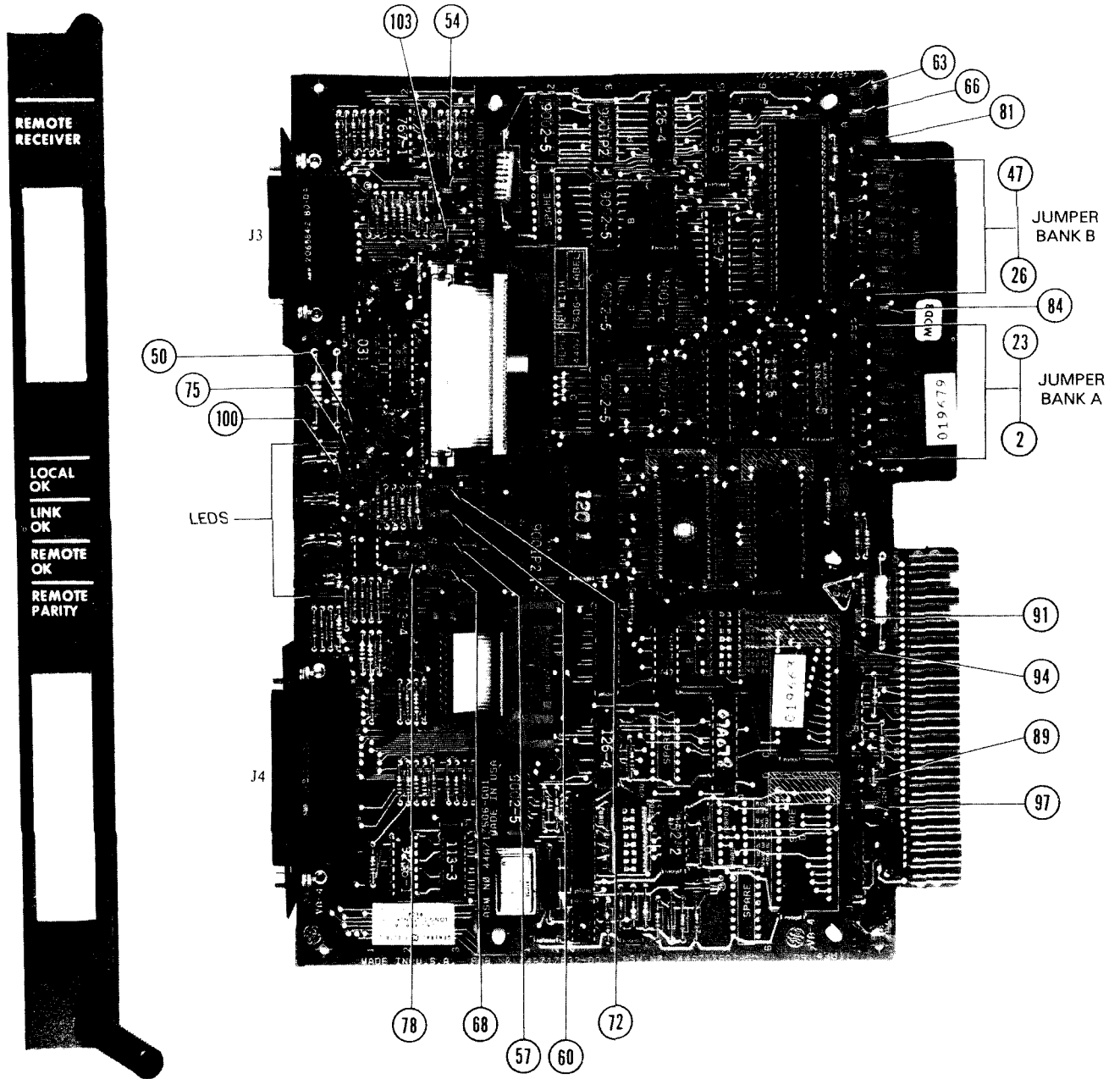


FIGURE 3. REMOTE I/O RECEIVER USER ITEMS (Part 1 of 3)

- ① J3 Connector: Communications interface cable connector (For link to Remote I/O Receiver or Modem).
- ③ J4 Connector: Connector for cable link to other I/O racks in Remote I/O station.

	<u>JUMPER</u>	<u>FUNCTION</u>	<u>FACTORY SETTING</u>	<u>ALTERNATE SETTING</u>	
BANK A	②	Factory Set	1-2	None	
	⑤	Comm. Failure Effect ¹	4-5 (Out.OFF)	5-6 (Out.Hold)	
	⑧	Odd/Even	7-8 (Odd)	8-9 (Even)	
	⑪	Parity	10-11 (Yes)	11-12 (No)	
	⑭	Factory Set	13-14	None	
	⑰	Baud Rate	16-17 (MSB)	17-18	
	⑳		19-20	20-21	
	㉓		22-23 (LSB)	23-24	
	BANK B	㉖	Factory Set	25-26	None
		㉙	Factory Set	28-29	None
㉚		Factory Set	31-32	None	
㉝		Factory Set	34-35	None	
㉞		Factory Set	37-38	None	
㉟		Factory Set	40-41	None	
㊱		Factory Set	43-44	None	
㊲		Factory Set	46-47	None	
㊴		Sensitivity	53-54 (Med.)	52-54 (Min.)	
㊶		Carrier Detect	57-0V (No)	56-57 (Yes)	
㊸		Clear-To-Send	60-0V (No)	59-60 (Yes)	
㊺		Output	63-64 (Tw. Pair)	62-63	
㊻				66-67 (RS-232C)	
㊼		Mode	49-50 (Tw. Pair)	50-51	
㊽				103-104 (RS-232C)	
㊿		Mode	102-103		
①		Factory Set	68-0V	None	
②		Factory Set	72-0V	None	
③		Factory Set	74-75	None	
④		Factory Set	78-79	None	
⑤	SET	Second Rack Present	88-89 (Yes)	87-89 (No)	
⑥	THESE	Second Rack Present	91-92 (Yes)	90-91 (No)	
⑦	THREE	Second Rack Present	94-95 (Yes)	93-94 (No)	
⑧	Factory Set	81-82	None		
⑨	Factory Set	99-100	None		
⑩	Factory Set	96-97	None		

1. The Hold Last State and the Remote Parity Error Effect or Communications Failure Effect functions are available with Remote Driver/Remote Receiver modules revision C (P/N IC600BF901C/IC600BF801C or IC600YB901C/IC600YB801C, respectively). These functions do not operate properly with earlier revisions. If you require use of these functions on earlier modules, please contact the GE Fanuc Field Service Group at 804-978-5624 for assistance.

LED INDICATORS

LED	DESCRIPTION
LOCAL OK	ON - Remote I/O Receiver module operating normally. OFF - Communications failure due to timeout or successive transmission errors.
LINK OK	ON - Communications link between this module and Remote I/O Driver established and valid. OFF - Communications error between this module and Remote I/O Driver.
REMOTE OK	ON - Remote system is operating normally. OFF - Fault in Remote I/O system (illegal address block, loose connection, power supply failure).
REMOTE PARITY	ON - Remote system operating normally with no parity errors. OFF - Parity error detected in Remote I/O system.

FIGURE 3. REMOTE I/O RECEIVER (Part 3 of 3)

INSTALLATION

Before installing the Remote I/O modules, review Table 2 to determine if the factory-set configurations are suitable for the Remote I/O application. Optional configurations are also indicated in Table 2. Step-by-step considerations are described in this section.

Modems being used must be compatible with Remote I/O, see specifications (pages 2 and 3).

TABLE 2. THINGS TO CONSIDER BEFORE INSTALLING MODULES

STEP	CONSIDERATION	FACTORY CONFIGURATION	OPTIONAL CONFIGURATION
1	Block Size	120 Inputs/120 Outputs	248 Inputs/248 Outputs
2	Block Address Switches	8 Blocks of 240 I/O References to choose from	4 Blocks of 496 I/O References to choose from
3	Number of I/O Racks in Remote I/O Station	2 or more I/O Racks in Remote Station	1 I/O Rack (Containing Receiver) in Remote Station
4	Communications Interface	Twisted-Pair up to 10,000 ft (3 km)	RS-232 (Modem) as link (Requires High-Capacity I/O Rack)
5	Communications Failure: CPU Status	STOP CPU	Allow CPU to Run
6	Communications Failure: Remote I/O Status	Turn all outputs OFF	Hold all outputs at last state
7	Remote I/O Parity Error	STOP CPU	Allow CPU to Run

Step 1 - Block Size

To obtain the Remote I/O modules for a block size of 496 inputs/outputs, set jumper 2 on the Driver module to position 2-4 (Refer to Figure 2, User Item 2)

Step 2 - Address Switches

If the block size equals 240, the user can select one of eight blocks of I/O References; the selection is made at the I/O Rack where the Driver is to be installed. Adjacent to the module slot on the rack backplane where the Driver is to be installed is a DIP-switch package whose possible block address settings are described in Figure 4.

The Driver DIP-switches, 1-4, are used to select which of 16 possible addresses in the block is to be reserved for the remote I/O status information. (If 1-4 were depressed to the left, the last address of I/O references would be selected e.g. 0121 - 0128).

If the block size is to equal 496, the user can select one of four blocks of I/O references; (the DIP-switch rockers 1-5, in this case, select one of 32 possible addresses for status) the selection is made at the I/O Rack where the Driver is to be installed. Refer to Figure 5 for possible selections.

<u>I/O References In Remote Location</u>	<u>User I/O Quantity</u>	<u>Rack Address Switches</u>		
		<u>5</u>	<u>6</u>	<u>(7 =Bottom) 7</u>
0001-0128	120/120	R	R	R
0129-0256	120/120	L	R	R
0257-0384	120/120	R	L	R
0385-0512	120/120	L	L	R
0513-0640	120/120	R	R	L
0641-0768	120/120	L	R	L
0769-0896	120/120	R	L	L
0897-1000	96/96	L	L	L

Note: L = Depressed to Left (Open)
R = Depressed to Right (Closed)

FIGURE 4. I/O RACK DIP-SWITCH SETTINGS FOR 240 I/O BLOCKS

<u>I/O References</u>	<u>User I/O</u>	<u>Rack Address Switches</u>	
		<u>7</u>	<u>6</u>
0001-0256	248/248	R	R
0257-0512	248/248	R	L
0513-0768	248/248	L	R
0769-1000	224/224	L	L

Note: L = Depressed to Left (Open)
R = Depressed to Right (Closed)

FIGURE 5. I/O RACK DIP-SWITCH SETTINGS FOR 496 I/O BLOCKS

NOTE

All I/O modules in the remote end must utilize addresses within the range established by the Driver. Inputs not used at the remote end can be used elsewhere in the system (local or remote locations). Outputs can be duplicated if needed.

Step 3 - Number of I/O Racks

At the Receiver, if there are no other racks in the Remote I/O Station containing the receiver, reposition the jumpers to the right to properly terminate the I/O communications:

At Receiver - For Single Rack Operation

Jumper 89	87 - 89
Jumper 91	90 - 91
Jumper 94	93 - 94

Step 4 - Communications Interface

If the twisted-pair interface (differential) is to be utilized, verify the jumper settings indicated below for both the Driver and Receiver modules.

TWISTED PAIR (DIFFERENTIAL) JUMPERS

<u>At Driver</u>		<u>Setting</u>	<u>Function</u>
Jumper 27	} Bank A	27-28	57.6Kb
Jumper 24		24-25	
Jumper 21		21-22	
Jumper 15	} Bank A	15-16	Odd Parity
Jumper 12		12-13	
Jumper 30		30-50	Carrier Detect
Jumper 33		33-51	Clear to Send
Jumper 37		36-37	Differential Mode
39		38-39	
43		42-43	
45		44-45	
Jumper 49		48-49	Sensitivity

<u>At Receiver</u>		<u>Setting</u>	<u>Function</u>
Jumper 23	} Bank A	22-23	57.6Kb
Jumper 20		19-20	
Jumper 17		16-17	
Jumper 14	} Bank A	13-14	Odd Parity
Jumper 11		10-11	
Jumper 63		63-64	Differential Mode
66		65-66	
50		49-50	
103		102-103	
Jumper 54		53-54	Sensitivity
Jumper 57		57-0V	Carrier Detect
Jumper 60		60-0V	Clear to Send

Step 4 - Communications Interface (continued)

NOTE

If the Modem, RS-232, option is selected, the following jumpers must be reset, (all jumpers must be changed to have a functional system).

Both the Remote Driver and the Remote Receiver must be placed in high capacity I/O racks to operate with RS-232 devices; any I/O rack will function when using twisted pair.

RS-232C JUMPERS

<u>At Driver</u>	<u>Settings</u>	<u>Function</u>
Bank A Select Desired Baud Rate	{ 21-22 24-25 27-28	57.6K
	{ 21-22 24-25 26-27	19.2K
	{ 21-22 23-24 27-28	9.6K
	{ 21-22 23-24 26-27	2.4K
	{ 20-21 24-25 27-28	1.2K
	{ 20-21 24-25 26-27	300
	{ 21-22 23-24 27-28	110
Jumper 15	15-16 14-15	Parity No Parity
Jumper 12	12-13 11-12	Odd Parity Even Parity
Jumper 37 39 43 45	35-37 39-40 41-43 45-46	RS-232C Mode
Jumper 49	47-49	Sensitivity

<u>At Receiver</u>	<u>Settings</u>	<u>Function</u>
Bank A Select Desired Baud Rate (Same as Driver)	{ 16-17 19-20 22-23	57.6K
	{ 16-17 19-20 23-24	19.2K
	{ 16-17 20-21 22-23	9.6K
	{ 16-17 20-21 23-24	2.4K
	{ 17-18 19-20 22-23	1.2K
	{ 17-18 19-20 23-24	300
	{ 17-18 20-21 22-23	110
Jumper 11	10-11 11-12	Parity No Parity
Jumper 8	7-8 8-9	Odd Parity Even Parity
Jumper 63 66 50 103	62-63 66-67 50-51 103-104	RS-232C Mode
Jumper 54	54-55	Sensitivity

Step 5 - Communications Failure - CPU Status¹

If an error is detected between the Driver and Receiver, what should the CPU do?

<u>At Driver</u> Jumper 9	(Factory Setting) <u>Halt CPU</u> 9- 10	(Optional Setting) <u>CPU RUN</u> 8-9
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Step 6 - Communications Failure Remote I/O Status¹

If an error is detected between the Driver and Receiver, what should the Remote I/O do?

<u>At Receiver</u> Jumper 5	(Factory Setting) <u>Turn All Outputs OFF</u> 4-5	(Optional Setting) <u>Hold LAST STATE</u> 5-6
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Step 7 - Remote I/O Error

If an error is detected in the parity checking at the Remote Station within its I/O modules and/or racks, what should the CPU do?

<u>At Driver</u> Jumper 6	(Factory Setting) <u>Halt CPU</u> 6-7	(Optional Setting) <u>CPU RUN</u> 5-6
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1. The Hold Last State and the Remote Parity Error Effect or Communications Failure Effect functions are available with Remote Driver: Remote Receiver modules revision C (P/N IC600BF901C, IC600BF801C, or IC600YB901C, IC600YB801C, respectively). These functions do not operate properly with earlier revisions. If you require use of these functions On earlier modules, please contact the GE Fanuc Field Service Group at 804-978-5624 for assistance.

WIRE CONNECTIONS

Use the insertion/extraction tool packaged with the Series Six CPU to insert the Remote I/O Driver and Receiver modules into their respective I/O racks. Position the faceplates over the cable connector(s) on the circuit boards; then secure the faceplate to the rack using the thumbscrews at the top and bottom.

If wiring the twisted-pair interface, refer to Figure 6. Use National Electric Cable, 22P15LCBT, or equivalent; the Receiver module can be located up to 10,000 feet (3 Km) from the Driver. The twisted-pair cable specifications are described in Figure 1.

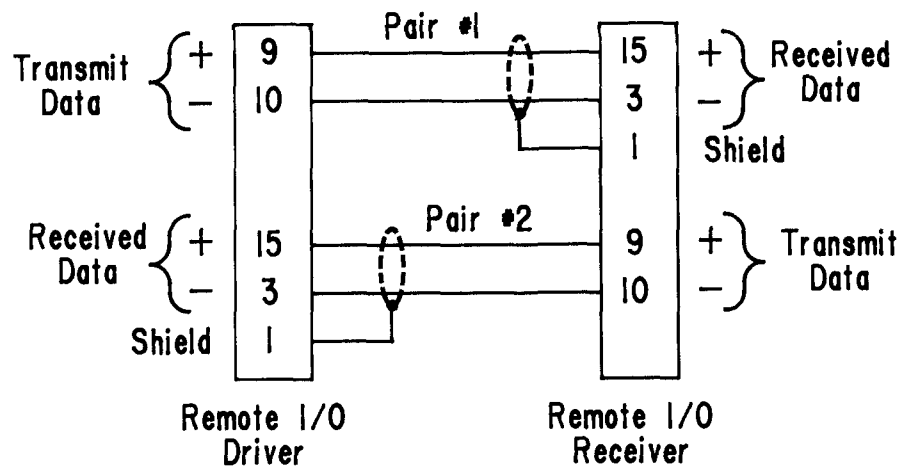


FIGURE 6. TWISTED-PAIR WIRE CONNECTIONS

If wiring the RS-232-C interface for communications through a modem, refer to Figure 7. The modem can be located up to 50 feet (15 meters) from the associated

Driver or Receiver module. The RS-232-C cable specifications are described in Figure 1.

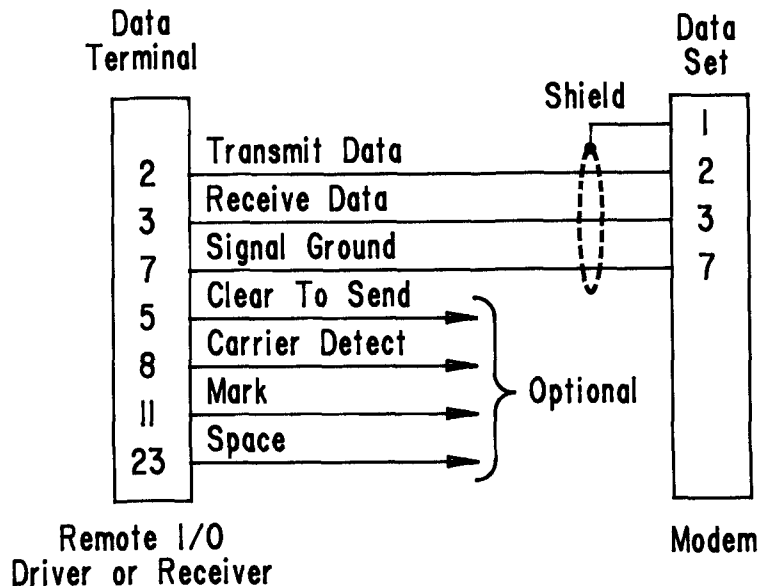


FIGURE 7. MODEM WIRE CONNECTIONS

SYSTEM DELAY TIMES

The following may be used to calculate worst-case delay times for an output to reach the Remote I/O in the absence of noise (link failure) (all results are in milliseconds).

PULSE WIDTHS:

Minimum pulse duration to assure output gets to the Remote I/O and/or inputs gets to CPU:

$$\begin{aligned} \text{Minimum Pulse Width:} &= 2.5 + \left[\frac{600}{\text{K Baud Rate}} \right] + 1 \text{ Sweep (for 120 I/O)} \\ &= 5.0 + \left[\frac{1188}{\text{K Baud Rate}} \right] + 1 \text{ Sweep (for 248 I/O)} \end{aligned}$$

OUTPUT DELAY:

Worst case time for CPU to affect a remote output compared to if it were in a local I/O chain:

$$\begin{aligned} \text{Maximum Delay Time:} &= 5.0 + \left[\frac{902}{\text{K Baud Rate}} \right] + 1 \text{ Sweep (for 120 I/O)} \\ &= 10.0 + \left[\frac{1606}{\text{K Baud Rate}} \right] + 1 \text{ Sweep (for 248 I/O)} \end{aligned}$$

INPUT DELAY:

Worst case time for input at remote station to reach CPU (not including input filters on boards):

$$\begin{aligned} \text{Maximum Delay Time:} &= 5.0 + \left[\frac{1078}{\text{K Baud Rate}} \right] + 3 \text{ Sweeps* (for 120 I/O)} \\ &= 10.0 + \left[\frac{1958}{\text{K Baud Rate}} \right] + 3 \text{ Sweeps* (for 248 I/O)} \end{aligned}$$

* 3 Sweeps can be reduced to 2 Sweeps if DO I/O instruction is used before logic using Remote I/O.

NOTES

1. For 110 baud with parity 12-bit characters are used, so multiply number in brackets by 1.09.
2. If NO PARITY is selected (user option) 10-bit characters are used, multiply number in brackets by 0.91 (except for 110 baud, multiply by 1.0).
3. To take into account the allowance to a transmission error (which does not cause system to halt) add the bracketed amount again.

EXAMPLES:

1. Factory Settings:
 - (57.6K baud, ODD parity), 120 I/O: with 10 millisecond CPU Sweep:
 - a. Minimum Detectable Pulse Width:

$$= 2.5 + \left[\frac{660}{57.6} \right] + 10$$

$$= 24 \text{ milliseconds}$$

EXAMPLES (Continued):

- b. Worst case delay time from CPU to Remote Output:

$$= 5.0 + \left[\frac{902}{57.6} \right] + 10 = 15 + [15.7]$$

$$= 31 \text{ milliseconds}$$

- c. Worst case delay time for input to reach CPU with DO I/O instruction:

$$= 5.0 + \left[\frac{1078}{57.6} \right] + 10(2) = 25 + [18.7]$$

$$= 44 \text{ milliseconds}$$

- d. Worst case input delay including one bad message:

$$= 44 + [18.7]$$

$$= 63 \text{ milliseconds}$$

2. 1200 Baud Modem operation, no parity, 120 I/O. with 10 millisecond sweep:

- a. Minimum Detectable Pulse Width:

$$= 2.5 + \left[\frac{660}{1.2} \times 0.91 \right] + 10$$

No Parity = 10 bit frame

$$= 12.5 + [500.5]$$

$$= 513 \text{ milliseconds}$$

- b. Worst Case Output Delay:

$$= 5.0 + \left[\frac{902}{1.2} \times 0.91 \right] + 10$$

$$= 15 + [684]$$

$$= 699 \text{ milliseconds}$$

- c. Worst Case Input Delay (without DO I/O instruction):

$$= 5.0 + \left[\frac{1078}{1.2} \times 0.91 \right] + 10(3)$$

$$= 35 + [817]$$

$$= 852 \text{ milliseconds}$$

- d. Worst Case Output Delay allowing a transmission error:

$$= 699 + [684]$$

$$= 1383 \text{ milliseconds}$$

$$= 1.4 \text{ seconds}$$

- e. Worst Case Input Delay allowing a transmission error:

$$= 852 + [817]$$

$$= 1649 \text{ milliseconds}$$

$$= 1.7 \text{ seconds}$$

REMOTE I/O STATUS BYTE

The Remote Driver utilizes 8 input references and 8 output references as selected by the I/O rack address switches (refer to step 2). The outputs are reserved for future use; the inputs provide the user with information

as summarized below. The example references assume the Driver is using references, 0121 - 0128 (DIP switches 1-4 set to left, 5-7 set to right).

<u>Input Number</u>	<u>Example</u>	<u>Function</u>
1	10121	Data Hand Shake
2	10122	Reserved
3	10123	Reserved
4	10124	Remote Parity
5	10125	Remote OK
6	10126	Link OK
7	10127	Local OK
8	10128	Heartbeat

Input No.

- Input 1 toggles to indicate occurrence of data handshake between Driver and Receiver.
- 2-3 Reserved.
- 4. If a parity error is detected in the communications between the Remote Receiver and other Remote racks, the 4th input is a zero (OFF). Otherwise, it is a one (ON).
- 5. If any fault is found with the Remote I/O such as power supply failure or parity error, the 5th input is a zero (OFF) ; otherwise, it is a one (ON).
- 6. If any error is detected in the communications system between the Driver and the Receiver the, 6th input is a zero (OFF), Errors include failure of LRC, parity error, broken cable, faulty modem, etc. Otherwise, it is a one (ON).
- 7. If any fault is found with the driver installed in the Local I/O, the 7th input is a zero (OFF); otherwise, it is a one (ON).
- 8. The 8th input cycles, OFF/ON/OFF/ON/OFF, one change each scan, indicating that the remote I/O system is properly functioning. If any of the four inputs (4-7) are set to zero, this input stops cycling and will hold an OFF or ON state, whichever was the last valid data.

ORDERING INFORMATION

	<u>Circuit Board & Faceplate</u>	<u>Circuit Board</u>	<u>Faceplate</u>
I/O Remote Receiver	IC600BF801C	IC600YB801C	IC600FP801A
I/O Remote Driver	IC600BF901C	IC600YB901C	IC600FP901A

CATALOG NUMBER REVISION SUFFIX

The equipment listed above having the catalog numbers shown and the same equipment having a higher alpha suffix is designed for listing by UL for use as auxiliary control devices. The equipment is a direct replacement for equipment having the same catalog number but a lower alpha suffix.

The UL symbol on the nameplate means the product is listed by Underwriters Laboratories Inc. (UL Standard No. 508, Industrial Control Equipment, subsection Electronic, Power Conversion Equipment.)

For further information, contact your local GE Fanuc sales office.

GE FANUC AUTOMATION NORTH AMERICA, INC. CHARLOTTESVILLE, VIRGINIA

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