

# Programmable Controller IC600WDXXX

GEK-83517E  
November 1993

## I/O Cables

### Features

- Convenient factory-assembled cables
- Available in lengths from 2 to 500 feet (0.6 to 150 meters) for IC600 Programmable Controllers
- Available in lengths from 5 to 50 feet (1.5 to 15 meters) for IC697 Programmable Controllers
- Selection of lengths provide flexibility in IC600 PLC and IC697 PLC installations
- Color-coded twisted pairs simplify troubleshooting

### Functions

The I/O (Input/Output) cable, consisting of 16 twisted-pair wires and two connectors provides electrical continuity for the parallel I/O bus in either an IC600 or an IC697 Programmable Logic Controller (PLC) system. The same cable can be used in either

system. The cable is shielded and the individual twisted-pair wires are color-coded as shown in Table 1.

The cable is available in lengths ranging from 2 feet (0.6 meters) to 500 feet (150 meters); however, only the 5, 10, 25, and 50 foot (1.5, 3.0, 7.5, and 15 meter) lengths can be used in an IC697 PLC system.

In an **IC600** PLC system, the I/O cable extends the parallel I/O bus from rack to rack within a Local Central Processor Unit (CPU) station or Remote I/O station. It can also connect a Local I/O station to another Local I/O station or to a CPU station, or it can connect racks within a Remote I/O station.

In an **IC697** PLC system, the I/O cable extends the parallel I/O bus from rack to rack in a system requiring expansion racks.

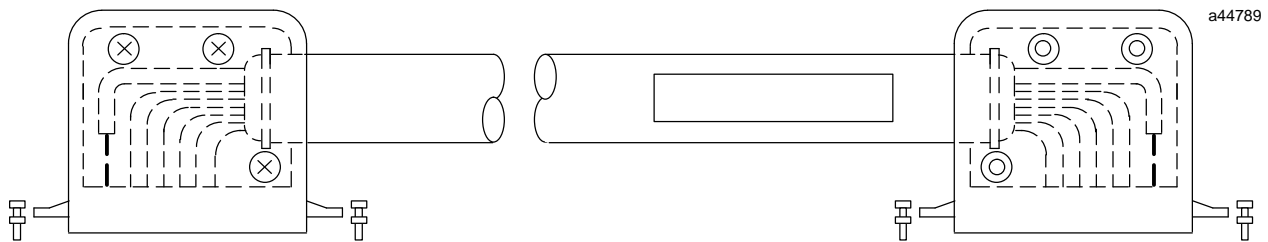


Figure 1. I/O Cable for IC600 and IC697 PLCs

GEK-83517E

## Installation

Installation should not be attempted without referring to the applicable installation manual for your PLC, either the IC697 *Programmable Controller Installation Manual*, IC600 *Installation and Maintenance User's Manual*, or IC600+ *User's Manual*.

### IC600 PLC Installation

Note that the cable has one male connector and one female connector. As a general rule, the male connector on the cable connects to the upstream module and the female connector to the downstream module. Upstream is defined as being toward the CPU, downstream is away from the CPU.

The specific IC600 modules which use this cable are: I/O Control, Auxiliary I/O Control, I/O Receiver, Advanced I/O Receiver, I/O Transmitter, and the downstream (bottom connector) port of a Remote I/O Receiver module. After being attached to their respective mating connectors all connectors should be secured using the furnished screws.

The following constraints should be observed when using this cable to interconnect the modules in an IC600 or IC600+ I/O system.

1. The total cable length connecting the racks within an I/O station should be no more than 50 feet (15 meters) without I/O transmitters.
2. The cable length between a Local I/O station and the CPU station, or another Local I/O station should be no more than 500 feet (150 meters) with I/O transmitters.
3. The parallel I/O bus between any Local I/O station and the CPU rack should interface through no more than four I/O Transmitter modules (up to four I/O transmitters between the CPU and the most distant I/O rack).

### IC697 PLC Installation

The male connector on the cable connects to the female (bottom) connector on the Bus Transmitter Module (BTM) and the female connector on the opposite end of the cable connects to the male (top) connector on the Bus Receiver Module (BRM) in the first expansion rack. Each additional expansion rack is connected by attaching an I/O cable from the top connector on the Bus Receiver Module in the expansion rack to the bottom connector in an (upstream) rack. The bottom

connector on the Bus Receiver Module is connected through an I/O cable to the top connector on the Bus Receiver Module in the next downstream expansion rack. This process is continued until the desired number of expansion racks are installed in the system (maximum of 7 expansion racks).

The following constraints should be observed when using this cable to interconnect the modules in an IC697 I/O expansion system.

1. The total length of all interconnecting I/O cables from the Bus Transmitter Module to the last Bus Receiver Module can be no more than 50 feet (15 meters) maximum.
2. For proper operation all racks must be at the same ground potential (8 racks maximum, CPU rack plus seven expansion racks).

### Twisted-Pair Color Codes

The following table lists the pin configuration, with wire color codes, for the I/O cable.

Table 1. I/O Cable Twisted-Pair Color Codes

Pin	Wire Color	Pin	Wire Color
1	no connection	20	gray-red
2	blue-white	21	red-gray
3	white-blue	22	blue-black
4	orange-white	23	black-blue
5	white-orange	24	orange-black
6	green-white	25	black-orange
7	white-green	26	green-black
8	brown-white	27	black-green
9	white-brown	28	brown-black
10	gray-white	29	black-brown
11	white-gray	30	gray-black
12	blue-red	31	black-gray
13	red-blue	32	blue-yellow
14	orange-red	33	yellow-blue
15	red-orange	34	no connection
16	green-red	35	no connection
17	red-green	36	no connection
18	brown-red	37	shield
19	red-brown		

### Note

Pin connections are the same at both ends of the connector.

## Ordering Information

Description	Catalog Number
I/O Cable, 2 feet (0.6 meters)	IC600WD002A
I/O Cable, 5 feet (1.5 meters)	IC600WD005A †
I/O Cable, 10 feet (3.0 meters)	IC600WD010A †
I/O Cable, 25 feet (7.5 meters)	IC600WD025A †
I/O Cable, 50 feet (15 meters)	IC600WD050A †
I/O Cable, 100 feet (30 meters)	IC600WD100A
I/O Cable, 200 feet (60 meters)	IC600WD200A
I/O Cable, 300 feet (90 meters)	IC600WD300A
I/O Cable, 500 feet (150 meters)	IC600WD500A

† These cables may be used in both IC600 and IC697 PLC installations; all others are for use in an IC600 system only.

**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, or no, alpha suffix.



This symbol on the nameplate means the product is listed by Underwriters Laboratories Inc. (UL Standard No 508, Industrial Control Equipment, part XVII Programmable Controller).