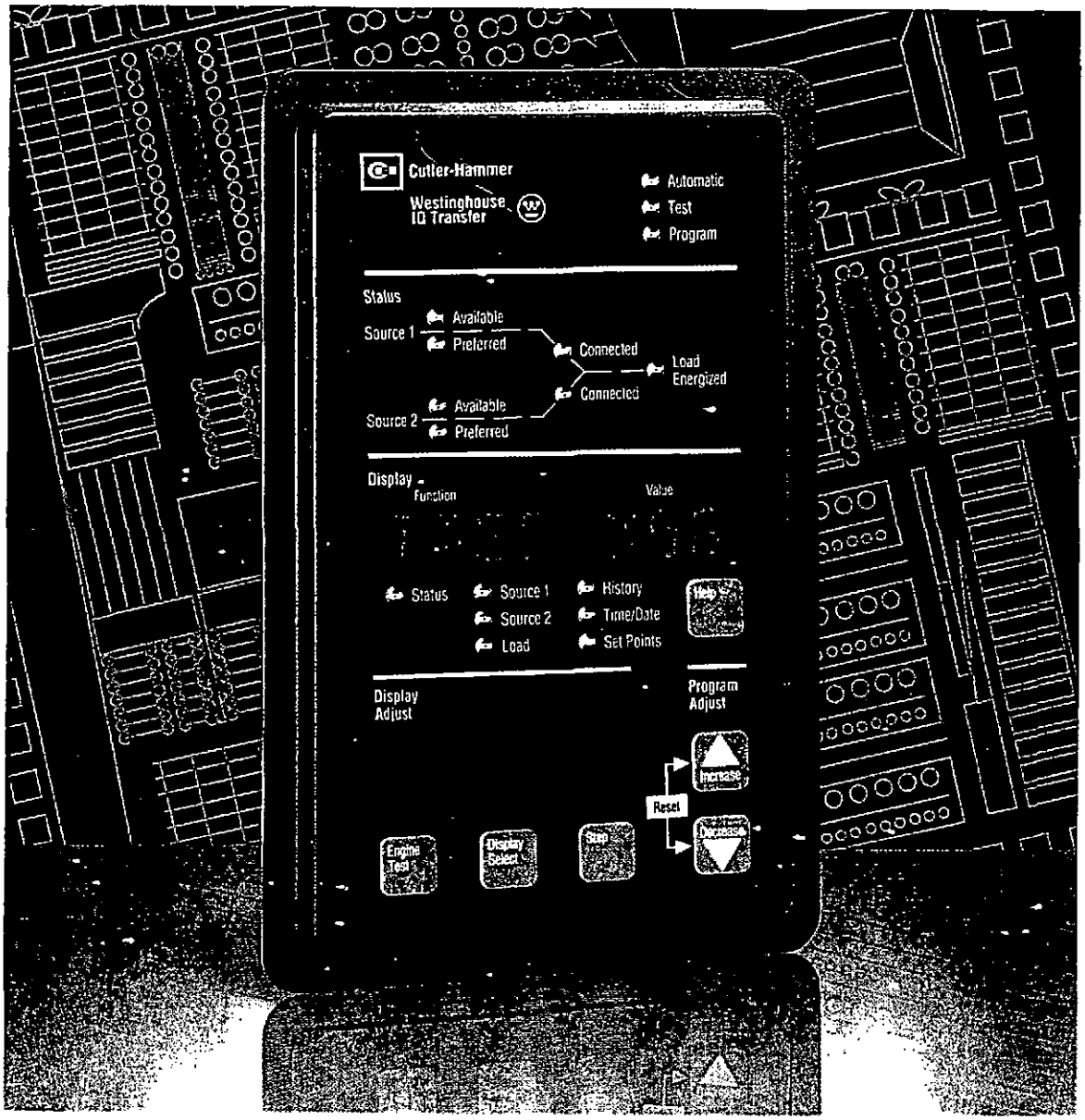
Westinghouse Transfer Switch Equipment

IQ Transfer

Setting a new standard with the most advanced microprocessor-based transfer switch logic available. It's programmable for superior reliability and versatile monitoring in critical applications.



Cutler-Hammer

EATON

INTRODUCTION

The IQ Transfer is a programmable, microprocessor-based monitoring device designed for use in transfer switch applications where rapid, reliable restoration of power in outage situations is essential.

IQ Transfer features proprietary Cutler-Hammer designed Sure Chip microprocessor technology to provide superior precision and versatility in both programming and data access. In addition, the IQ Transfer's user-friendly front-panel interface simplifies routine operation, programming, data presentation and adjustment of settings.

This unique combination of features makes the Westinghouse IQ Transfer the most complete and technologically-advanced ATS logic package available today.

WESTINGHOUSE IQ TRANSFER FEATURES

The IQ Transfer is a door-mounted, totally enclosed device that is customer-accessible from the front panel.

Data access and programming operations are performed using the IQ Transfer's touch-sensitive function buttons in conjunction with an easy-to-read illuminated, alphanumeric LED display window. Both the function buttons and the display window are mounted on the device's front panel. A built-in Help button provides user assistance in the form of message displays.

The IQ Transfer is 100% communications ready and compatible with other devices in the Westinghouse IMPACC system family of products, as well as the Westinghouse IMPACC system-wide supervisory and control system (see page 7). It permits monitoring and control of several transfer switches locally or remotely from a single point.

IQ transfer is suitable for either new or existing Westinghouse ATS applications.

FEATURES

- Applicable for use on any 120-600V, three-phase or single-phase system operating at 50/60Hz.
- True RMS three-phase voltage sensing on Normal, Emergency and Load.
- Frequency sensing on Normal and Emergency.
- Programmable setpoints stored in non-volatile memory.
- Exclusive Load Monitoring and Delayed Transition features.
- Historical data on most recent transfers (up to 16 events) exportable to Windows based software applications such as spread sheets and data bases.
- Wide range of user-selectable option combinations.
- Load Sequencing
- IMPACC Communication to Personal Computer either locally or via modem.
- Engine start contacts (Two available for dual generator.)
- Engine Test Switch with user-selectable Test Mode and Failsafe. (Failure of the alternate source causes return to automatic operation with alarm and/or message.)
- Alarm Contact (Multiple alarm functions available.)
- Pre-transfer Signal.

INDICATOR LIGHTS

MODE

- Automatic
- Test
- Program

STATUS

- Source 1 Available
- Source 2 Available
- Source 1 Connected
- Source 2 Connected
- Source 1 Preferred
- Source 2 Preferred
- Load Energized

DISPLAY

- Status
- Source 1
- Source 2
- Load
- History
- Time/Date
- Set Points

INSTRUMENTATION

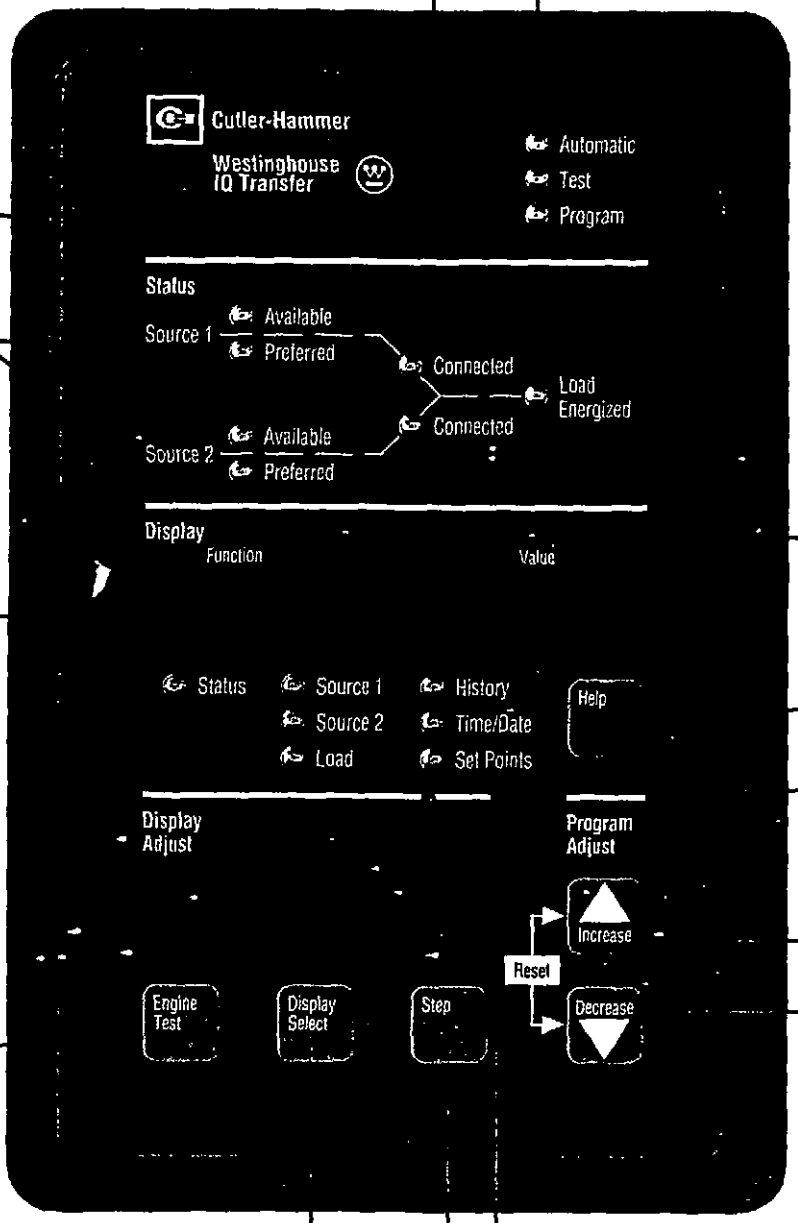
- Voltmeter (0-700V digital readout, accurate to +/- 1% of full scale.)
- Reads Line-to-Line on Sources 1 and 2 and Load.
- Frequency Meter (40-80 Hz, +/- 0.1 Hz digital readout).
- Source Available Time (Both sources)
- Source Connected Time (Both sources)
- Source Run Time
- Transfer History

IQ Transfer Front Panel Display and Button Functions

PROGRAM
LED indicates unit is in programming mode. (NOTE: This mode is activated using the "Program" switch located on the rear of the unit.)

TEST
Indicator light is on when unit is in test mode.

AUTOMATIC
LED indicates that the ATS is operating normally and is in the automatic mode.



HISTORY
By pressing the Display Select button to light the History LED and the Step button to rotate thru available data, historical or cumulative values for Available Time (Both Sources), Connected Time (Both Sources), Number of Transfers and Date/Time Reason for last 16 Transfers are displayed.

HELP
Pressing the Help button in any function mode will bring up display messages, explanations and prompts to assist the operator.

TIME/DATE
Displays real-time clock. Clock can be easily set in this mode using the Increase and Decrease buttons.

INCREASE/DECREASE
A detailed explanation of these buttons can be found in the Operation Section.

SOURCE 1, SOURCE 2, AND LOAD
Standard LED lights show status of both Sources and Load.

LED DISPLAY
Unit will provide LED readout showing actual metered values for Voltage, Frequency and Condition (including Normal, Undervoltage, Overvoltage, etc.).

TEST BUTTON
Pressing this button twice initiates an engine test.

DISPLAY SELECT
- Source 1
- Source 2
- Load
- History
- Time/Date
- Set Points

Button is discussed in Operation section.

STEP BUTTON
Shows multiple variables under each display select function.

SET POINTS
Selecting this LED permits the user to display existing programmed values.

Programming and Options

BUTTON FUNCTIONS

Three buttons provide easy access to all commonly-used IQ Transfer functions.

When the preferred source is connected and the ATS is operating normally, the Automatic indicator light will be illuminated and no message will appear in the display window.

Using the Display Select button, the operator can step through each of the six display families:

- Source 1
- Source 2
- Load
- History
- Time/Date
- Set Points

(NOTE: Stepping-through the various display modes does not alter preset values or otherwise affect operation of the ATS.)

Once the desired display family is selected, the user may press the Step button to cycle through specific parameters or metered values shown in the display window.

SWITCH OPERATION

In the event of a power failure, the IQ Transfer will automatically become active. Once the alternate source becomes available, the IQ Transfer will display the status of timers, and initiate a transfer.

INITIAL PROGRAMMING

Factory programming will load all customer-specified functions and presets. At the customer's request, Cutler-Hammer will add, delete or adjust optional features.

CUSTOMER PROGRAMMING

Customers may reprogram set points and other parameters to match their application, using the Program switch located on the rear of the unit. Once the programming mode has been activated, the Program light will illuminate, and user setpoints will be shown in the display window. Values for individual set points may be altered by pressing the Increase or Decrease buttons.

Once a parameter has been re-set, the user advances to the next set point by pressing the Step button.

Once reprogramming is complete, the user may return the Program switch to the Run position. At this point, all new values are stored in the IQ Transfer's non-volatile memory, and the unit returns to Automatic mode.

While the IQ Transfer is in the Program mode, the device continues to operate in accordance with the previously programmed set points and parameters. The unit is never off-line, and pre-set values do not change until programming has been completed.

QUICK SUMMARY OF IQ TRANSFER FACTORY OPTIONS AND CUSTOMER ADJUSTMENTS

The following charts illustrate standard features of an IQ Transfer unit as well as factory installed optional features.

STANDARD FEATURES		CUSTOMER ADJUSTMENTS
Voltmeter for Source 1		
Voltmeter for Source 2		
Voltmeter for Load		
Frequency Meter for Source 1		
Frequency Meter for Source 2		
Undervoltage Sensing on Source 1		1 Phase or 3 Phase–Depending on System Voltage Dropout Voltage–90% of nominal to 50% of nominal Pickup Voltage–100% of nominal to (Dropout + 2%)
Undervoltage Sensing on Source 2		1 Phase or 3 Phase–Depending on System Voltage Dropout Voltage–90% of nominal to 50% of nominal Pickup Voltage–100% of nominal to (Dropout + 2%)
Underfrequency Sensing on Source 2		Dropout Frequency–100% of nominal to 90% of nominal Pickup Frequency–110% of nominal to (Dropout + 1 Hz.)
Time Delay Normal to Emergency		Adjustable 0-1800 Seconds
Time Delay Emergency to Normal		Adjustable 0-1800 Seconds
Time Delay Engine Start		Adjustable 0-120 Seconds
Time Delay Engine Cooldown		Adjustable 0-1800 Seconds
System Selection		Utility/Generator or Dual Utility or Dual Generator
Position Indicators		
Source Availability Indicators		
Preferred Source Indicator		
Load Energized Indication		
History		
• Source Availability Time		
• Source Run Time		
• Source Connected Time		
• Load Energized Time		
• Number of Transfers		
• Date, Time, and Reason for last 16 Transfers		
Viewable Setpoints		
IMPACC Capability		Communications via IMPACC on Personal Computer
Real Time Clock		Set Time and Date
Programmable Engine Test		Run Engine Only or Load Test
Remote Alarm Contact		
Auxiliary Relay Contacts		

OPTIONAL FEATURES	OPTION NUMBER	CUSTOMER ADJUSTMENTS
Overvoltage Sensing on Source 1 Pickup Voltage–95% of nominal to (Dropout–2%)	26C	Dropout Voltage–120% of nominal to 105%
Overvoltage Sensing on Source 2 Pickup Voltage–95% of nominal to (Dropout–2%)	5E	Dropout Voltage–120% of nominal to 105%
Underfrequency Sensing on Source 1	26E	Dropout Frequency–100% of nominal to 90% of nominal Pickup Frequency–110% of nominal to (Dropout + 1 Hz.)
Overfrequency Sensing on Source 1	26F	Dropout Frequency–120% of nominal to 100% of nominal Pickup Frequency–90% of nominal to (Dropout–2%)
Overfrequency Sensing on Source 2 (Also includes Overvoltage Sensing on Source 2	5K	Dropout Frequency–120% of nominal to 100% of nominal Pickup Frequency–90% of nominal to (Dropout–2%)
Time Delay Bypass Pushbutton	8C or 8D	
Manual Return to Source 1	29J	
Delayed Transition		
Delayed Transition–Time Delay	32A	0–120 Seconds
Delayed Transition–Low Voltage Decay	32B	10–40% of Nominal Voltage
Preferred Source Selection	10B or 10D	Selectable–Source 1 or Source 2 or None
Plant Exerciser W/ Real Time Clock	23G	Set Mode (Load or No-Load Test) and Time and Day of Exercise
Load Sequencing	45	Up to 10 Devices
Pre-transfer Signal	35	Time Delay Initiated or Confirmation Initiated (up to 10 Devices)
Phase Rotation (Contact Factory for availability.)	5H or 26H	

IMPACC—INTEGRATED MONITORING PROTECTION AND CONTROL COMMUNICATIONS SYSTEM

Westinghouse automatic transfer switches with IQ Transfer are ideally suited for the powerful Westinghouse IMPACC System.

Westinghouse IMPACC is the unique system that, for the first time, ties together multiple devices in electrical distribution systems in a wide variety of buildings and plants.

IMPACC utilizes the proven, Westinghouse developed INCOM chip for highly reliable, two-way communications (even in noisy industrial environments) between the master control unit and system devices via a twisted pair of conductors. Communications wires can be extended up to 7,500 feet from the master control unit without repeaters...and as many as 1,000 compatible devices such as IQ Transfer, installed in various assemblies, can be on the IMPACC System.

EASY INSTALLATION

Installation is uncomplicated and devices are connected, daisy chain style, via twisted pair conductors. All assemblies and devices are standard Westinghouse equipment when IMPACC compatible devices are ordered as part of an assembly. The assemblies (with compatible devices built in) are prewired, pretested, and delivered complete.

WESTINGHOUSE EXCLUSIVE

Westinghouse's IMPACC System is the only one that can bring together central control of multiple transfer switches *AND* the rest of the electrical distribution system–all from a single point.

FLEXIBILITY

IMPACC is flexible in that it can include those assemblies, such as ATS's with IQ Transfer, that are desired in a distribution system...but IMPACC can be easily upgraded as new assemblies are added. In essence, a customer determines the requirements for a building's electrical distribution system, and Cutler-Hammer provides the IMPACC System to fit those specific requirements.

ONE PERSON OPERATION

A single operator uses a personal computer as the IMPACC System master control unit to monitor, control, and communicate with compatible devices on the system. Two examples of typical screens used to enter ATS setpoints are illustrated below.

STANDARD SOFTWARE

Windows driven software is utilized for all compatible devices on the distribution system. Standard modules can be ordered to meet current needs and can expand with your distribution system. Please review the IMPACC System drawing on page 7.

WHAT IQ TRANSFER/IMPACC CAN DO FOR YOU

CENTRALIZED DATA COLLECTION

The IMPACC System provides collecting, processing, and storage of all distribution system operational data.

CUSTOM REPORT GENERATION

Operational data is stored in data base format for custom report generation of any assembly or any equipment on the distribution system.

EARLY WARNING

Constant monitoring alerts an operator to potential problems before they occur, thus minimizing costly downtime while keeping the distribution system running smoothly.

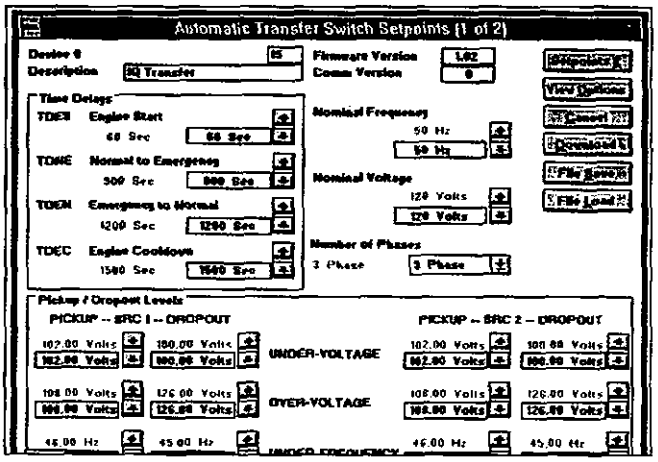
TROUBLESHOOTING

Data is provided to efficiently help troubleshoot problems within a distribution system.

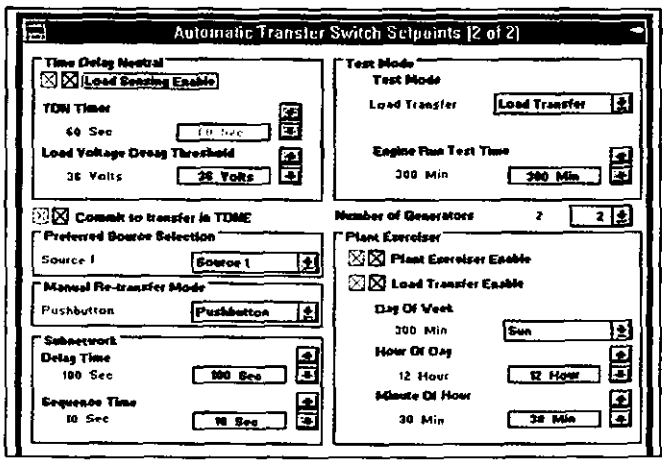
MAINTENANCE SCHEDULES

Preventive maintenance schedules can be developed easily from the stored data base to improve equipment performance and prevent downtime.

CUSTOMER PROGRAMMING VIA IMPACC SYSTEM

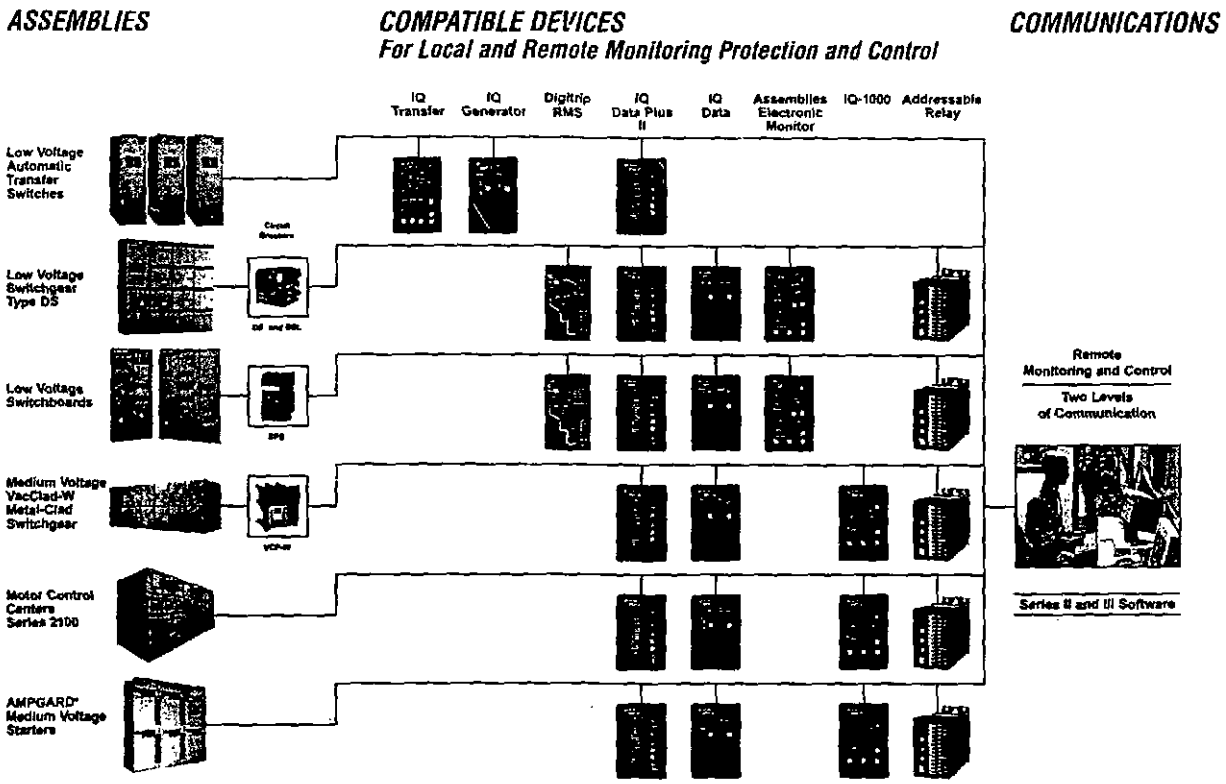


Typical set-point Programming, screen 1 of 2.

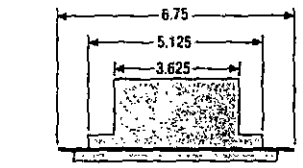


Typical set-point Programming, screen 2 of 2.

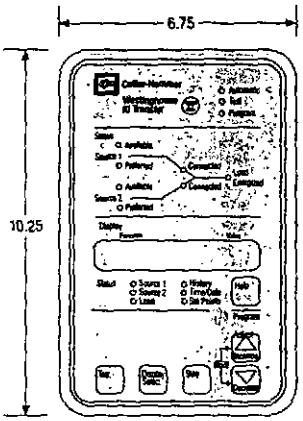
Using IMPACC, You Can Communicate With Your ATS and Other Electrical Distribution Assemblies



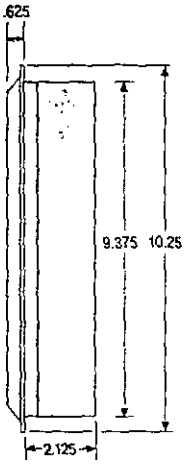
IQ Transfer Dimensions



Top View

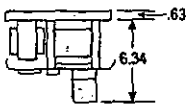


Front View

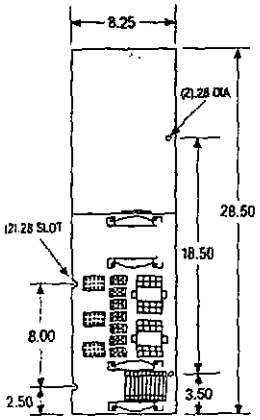


Side View

IQ Transfer Dimensions



Side View



Front View

Typical Transformer Panel

Dimensions are approximate and should not be used for construction purposes.

FOR ADDITIONAL INFORMATION ON WESTINGHOUSE TRANSFER SWITCHES:

Bypass Isolation Transfer Switches 800-3000 Amperes	B 1221
Mini-SPB Transfer Switches 600-1200 Amperes	B 1222
ATS Solid State Logic	SA 12075
ATS Relay Logic	SA 12076
ATS Renewal Parts Catalog	SA 12077
Automatic, Manual, Non-Automatic Transfer Switches Vertical Design 150-1000 Amperes	B 1223
Automatic, Manual, Non-Automatic, Transfer Switches 30-4000 Amperes, Price List	PL 29-920
Transfer Switch Equipment 30-4000 Amperes	TB 29-925
ATS Renewal Parts Price List	PL 29-995
Combination Bypass Isolation and Automatic Transfer Switches 100-1000 Amperes	SA 11844
Drawout Transfer Switches 800-4000 Amperes	SA 11873
Service Equipment Rated Transfer Switches	SA 12149
SPB Fixed Mount Transfer Switches 800-4000 Amperes	SA 12145

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