Gamewell™ WORLDWIDE

TECH TIP

Technical Update:
IdentiFlex 600 Series
Troubleshooting Information

BATTERY CHARGER:

The battery charger circuit has several modes of operation. When power is applied to the system, battery voltage is checked to verify proper voltage. If the batteries are above 22VDC, the charger will immediately go into a high rate charge mode. This charges the batteries in a high current mode to approximately 29VDC. When this charge mode is complete, a float charge of 27.5 VDC is applied to the batteries to maintain the full charge. Periodically the system will automatically test the battery for capacity. When capacity is found to be low ,the high rate mode is cycled. High rate mode of operation is logged into the history log but not indicated as fault unless the batteries are below approximately 25VDC. If battery voltage is below 25, the system will report fault condition. If the battery voltage is below 22VDC, the charging is reduced to a 50 mA trickle charge to prevent high rate charging of batteries with bad cells.

During battery backup operation when the batteries fall below 18VDC, the system will enter a "Suspended Operation" mode. In this mode the analog modules are not monitored.

Connect a, known good, set of fully charged batteries to the system. Cycle the batteries through the operation described above. (This connection is for batteries only; connections other than batteries will cause unwanted battery charger operation.)

Earth Ground Detection:
The earth fault detection circuit tests the isolation between the system wiring and earth ground. This is accomplished in two stages. In the first stage a reference voltage of 5VDC is applied to earth ground and the current to earth is measured. In the second stage 0VDC is applied to earth ground and current is measured again. This current is measured via an Analog to Digital converter. Both values, along with the difference between them, is displayed in the GND test mode. When system negative is leaking current to ground the 5V reading will be low and when the system positive has current leakage to grounds the "GND" reading will increase. When the difference between the two is less than 142 a ground fault is reported.

TROULESHOOTING
Access the GND test mode. Allow 8 – 10 seconds for the display to update the current values. The 5VDC reference should indicate a value of approximately 210 and the GND value should be approximately 0. Remove all field wiring and reconnect circuits individually until the wiring that is altering the expected value(s) is determined.

Note: System wiring should not be connected or disconnected while power is applied.

Power Supply:
The Flex 600 systems are equipped with circuitry to monitor the various power supplies. Verify that AC and battery connections are present. When a power supply fault is indicated please contact the technical support group for assistance.

Initiating Circuits:
Conventional initiating circuits require a 3.9K EOL resistor. The circuit reports trouble condition when less than 3mA current is detected. 1st alarm condition is reported above 35 mA and 2nd alarm condition is reported above 70mA.

Analog Addressable Circuits:
The analog addressable protocol used in the Flex 600 series systems is "Series XP95" protocol. All devices used on the analog circuits should have a 95 designation in their part number. Please refer to the XP95 Engineering Product Guide for detailed information regarding this protocol.

Descriptions of troubleshooting analog circuits will refer to the "Analog" test menu in programming. You should be familiar with this menu before proceeding. (See programming section of the installation manual for more information). The analog circuit should read 21-22 VDC across the Com and Data terminals (L1 to L2) and 20-21 VDC across the Com and +24 terminals (L2 to +24).

If wiring of the analog circuit has been completed in shielded cable, the shield must be continuous, connected to system negative at the panel, and no more than .1 microfarads of capacitance between conductors.

Device Missing:
This fault is reported when a device fails to respond to the system polling. Check the device address setting and wiring to the device.

Device Fault:
Check the analog value reported from the device. This must fall within the device specified parameters (see installation manual appendix for specific device parameters).

Duplicate Device:
When a device responds to its polling it will produce 20mA current pulses. If this level is exceeded by 50% the panel will indicate that a duplicate device with that address exists. Using the analog test menu, send the device a data value of 4 (turn on local LED). Walk the circuit checking devices, other than the one known to have the address, for an illuminated LED. This will be the duplicated address.

Device Type Mismatch:
The various series 95 devices are equipped with a device type code. When a device returns a type code other than what is in system memory, a type mismatch is displayed. In the programming mode, verify the programmed device type is identical to the "real time" type shown in the analog test mode.
        Note: switch 8 on some devices changes its device type.

If the wrong device type is programmed in memory the corrections must be uploaded or the circuit must be initialized without a device programmed for that address, then initialized again with the proper device type installed.

Pre Alarm:
A devices actual counts, exceeds the "average counts" (stored in memory) by a predetermined amount. When replacing a defective device that has forced the average counts of an address to become very low, this fault will occur until the average counts of the new device are updated.

Erroneous Messages:
When messages such as Duplicate Devices, Missing Devices or Type Mismatches report erroneously, this is usually an indication that data is corrupt. From the analog test menu select any device on the circuit in question. View the Device Type and Analog Value fields for several seconds. If data is corrupt the device type may tend to change or flicker occasionally along with the analog value. If this occurs, disconnect portions of the circuit until the readings stabilize. The removed portion will be the source of corrupt data.

Open/Short
This trouble indicates the circuit is either Opened or Shorted. Confirm the wiring is not shorted together (>20K???). If not shorted, this fault is also reported when the feed of a circuit is not connected to its associated return (e.g. L1 not connected to L1R). Check the terminal blocks for jumpers on a Class B circuit and the wire continuity on a Class A circuit.

CBE (Control By Event):

When Control By Event functions do not operate as expected there are generally three areas of programming that must be verified.

The first is "Input" programming for the device. This will indicate the input group assignment and the zone type for the device.

Next, Check the CBE menu for proper output assignments.

Then check the "Output" programming of the expected control device or circuit to be activated. Verify its output group assignment, circuit type and alarm level.

Indicating Circuit:

The conventional Notification Appliance Circuit module (USM-X) is 24VDC polarity reversal type circuit. In normal operating condition with a 3.9K EOL resistor should read approximately 7VDC. When selected, the polarity reverses and the output switches to 24VDC. These circuits should be powered from the APS-8 power supply.

The APS-8 is supervised via the power cable connection. The white conductor provides 0VDC in normal condition, .6VDC to 1.2VDC when AC power is not present and greater than 1.4 when batteries are disconnected.

City Tie:

Requires a 3.9K EOL resistor for supervision when it is not used.

Line Reversal Mode: Provides supervisory current to connect station in normal condition. Opens circuit to transmit trouble condition and lights City Tie LED steady during troubles. Reverses polarity to the connected device in alarm.

Masterbox Mode: Provides supervision current for a 14.5 ohm coil. The circuit doesn't supervise for a short circuit in this mode. No change of status during trouble conditions. Provides reversed polarity current to energize 14.5 ohm coil during alarm.

Chicago Mode: Operates same as Line Reversal mode with the exception of troubles on the City Tie circuit. These troubles transfer the state of the "Spare" relay on the common control.

Dialer Mode: In the dialer mode no field connection is made to the city tie circuit. Failure of the AC power source, delays transfer of the common trouble relay for 6 hours.

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SYSTEM MESSAGES

System Setup Messages	Description
"Skip System I/O Assignments"	System power up/Hardware Reset – w/o SmartStart routine invoked.
"Begin System I/O Assignments"	Processing SmartStart Routine
"Programming Mode Entered"	Ignore any data from this point until "Exit Program Mode" is received
"Exit Program Mode"	See Programming Mode Entered
Control Messages	**Description**
"Commencing System Reset"	System processing Reset Cycle
"System Idle"	System reset cycle completed, system is normal
"System Acknowledged"	Event is Acknowledged
"Signals Deactivated"	NAC Circuits toggled off manually.
"Signals Activated"	NAC Circuits toggled on manually.
"Signals Silenced Automatically"	System automatically silenced the NAC circuits.
Fire Alarm Message	**Description**
"Fire Alarm in"	The "Fire Alarm in" message is followed by CKT then the "circuit number" (1-128). If also an addressable CKT this will be followed by DEV and the "device number" (1-126) See Examples
Supervisory Message	**Description**
"Supv. Event in"	The "Supv. Event in" message is followed by CKT then the" circuit number" (1-128). If also an addressable CKT this will be followed by DEV and the "device number" (l-126) See Examples
Generic Message	
"Genr. Event in"	The "Genr. Event in" message is followed by CKT then the "circuit number" (1-128). If also an addressable CKT this will be followed by DEV and the "device number" (l-126) See Examples
Security Alarm Message	**Description**
"Security Alarm in"	The "Security Alarm in" message is followed by CKT then the "circuit number" (1-128). If also an addressable CKT this will be followed by DEV and the "device number" (1-126) See Examples
Pre Alarm Message	**Description**
"Ver. Seq. in"	Verification sequence started
"Pos Al. Seq. in"	Positive Alarm Sequence started
"Pre-Alarm in"	Pre alarm present

Fault Message	Description
"Alarm Tested in"	Alarm test message during walktest
"A to D Malfunction"	System Problem - Analog to Digital converter bad replace Bus Driver, Contact Technical Support
"LCD Malfunction"	System Problem – Replace LCD, Contact Technical Support
"System In Walk Test"	System in partial or full system walk test mode
"System Out Of Walk Test"	Exit system walk test mode
"System l/Os By Passed"	Indicates bypassed system circuits and/or devices
"All By Passed I/Os Cleared"	System not bypassed
"I/0 Bypassed,"	Starts ID of Circuit or point bypassed
"Remote Annunciator Not Responding"	Communication to the remote annunciator is not present
"Remote Annunciator OK"	Communication Problem Restored
"Key Stuck in"	Tactile switch is stuck – This fault can occur when system data bus has corrupt data. See Card ID Test
"Display Missing"	A modules associated display is missing. Check jumper 1-4 for proper location.
"Bad Card @ "	System Problem
"Card Missing @	A card is not responding to the polling. See Card ID test
"New Card Detected @ "	A cards ID response has changed. See Card ID test
"Out of Memory Assigning"	System Problem
"I/O Restored,"	Supervisory or trouble in circuit that automatically restores will display this message with IN CKT followed by the "circuit number" (1-128). If also an addressable CKT this will be followed by DEV and the "device number" (I -126) See Examples
"Trouble Tested in"	Walktest message for device trouble
"Trouble in"	Beginning of Circuit or Device Trouble
"Output Shorted in"	Check circuit for proper EOL. (See Analog troubleshooting)
"Dup. Dev. in"	Two devices with the same address exist. See analog troubleshooting
"Dev. Missing in"	A device is not responding to polling. See analog Troubleshooting
"Type Mismatch"	A device has changed its type response. See analog troubleshooting
"Dev. Dirty in"	A devices count has gone below the preset level. See analog troubleshooting
"No Response from Analog CKT:"	No devices on the associated circuit are responding
"Open/Short in CKT:"	Check EOL value
"I/O Not Detected @:"	No devices detected on a circuit
"Password Accepted"	System Valid password entered
"+5V Bad On"	5V power supply on a module bad – Verify proper module type, See Card ID test
"Aux. AC Bad For"	Check APS-8 AC connection
"Aux. Batt. Bad For"	Check APS-8 Battery connection
"Aux. Bad For"	Check power supply connection

SAMPLES MESSAGES   DESCRIPTION

SAMPLES MESSAGES	DESCRIPTION
Status: NORMAL 08/31/95 16:19 System Idle	System normal
Status:ALARM 1 st of 1 08/31/95 16:21 Fire Alarm in Ckt:8	First Alarm with no user text
Status:ALARM Total:2 08/31/95 16:21 Fire Alarm in Ckt:7	Second Alarm with no user text
Status:ACK; 08/31/95 16:21 System Acknowledged	System acknowledge button pressed
Status:RESET 08/31/95 16:21 Commencing System Reset	System reset
Status:FAULT 08/31/95 16:21 Ver. Seq. in Ckt: 1 Fire Alarm 1 st. Floor Room Number 1	Fire Alarm Verification sequence started, not an actual alarm at this point.
Status:NORMAL 08/31/95 16:21 System Idle	System restored to normal mode.
Status:EVENT 08/31/95 16:23 Supv. Event in Ckt:3 Alarm Tamper Switch 1st. Floor	Supervisory Event circuit 3
Status:EVENT 08/31/95 16:24 Supv. Event in Ckt:3 Alarm Tamper Switch 1st. Floor	Supervisory Event Circuit 3
Status :NORMAL 08/31/95 16:24 I/O Restored, Ckt :3	Supervisory Event automatically restored
Status : NORMAL 08/31/95 16:24 System Idle	
Status:FAULT 08/31/95 16:24 Ver. Seq. in Ckt:26 Dev: 16 Fire Alarm Heat Detector I st. Floor Room Number 1	Verification sequence Circuit 26 device 16 not actual alarm

Status:EVENT 08/31/95 16:24 Supv. Event in Ckt:26 Dev:14 Sprinkler Tamper Switch 1st. Floor Room Number 1	Supervisory event Circuit 26 device 14
Status:NORMAL 08/31/95 16:25 I/O Restored, Ckt :26 Dev: 14	Supervisory device automatically restored circuit 26 device 14
Status:ALARM I st of 1 08/31/95 16:25 Fire Alarm in Ckt:26 Dev: 16 Fire Alarm Heat Detector 1 st. Floor Room Number 1	Fire alarm circuit 26 device 16
Status:SIG SIL 08/31/95 16:25 Signals Deactivated	Signals silenced
Status:SIG SIL 08/31/95 16:25 Signals Activated	Signals activated
Status:EVENT 08/31/95 16:26 Supv. Event in Ckt:26 Dev:14 Sprinkler Tamper Switch 1 st. Floor Room Number 1	Supervisory Event circuit 26 device 14
Status:FAULT 08/31/95 16:27 Aux. AC Bad For Ckt: 11	Trouble report
Status : FAULT 08/31/95 16:27 AC input Bad, Value:0	Trouble report
Status:NORMAL 08/31/95 16:27 AC input OK, Value: 185	Trouble report restore
Status:NORMAL 08/31/95 16:27 I/O Restored, Ckt: 12	Trouble report restore
Status:NORMAL 08/31/95 16:27 I/O Restored, Ckt: 11	Trouble report restore
Status:FAULT 08/31/95 16:27 Batt. Charging, Value: 188	Trouble report
Status :NORMAL 08/31/95 16:28 Batt. Charging OK	Trouble report restore