

User's Manual for
Keltron SDACT and FDACT
Fire Dialers



SFDACT.DOC
Rev 2.2
11/1/06
626-2104
P/N 92MSDACT

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Preface

The information contained in this manual will enable a trained alarm technician to properly install, configure, connect, program, power up, test, and commission the Keltron S/FDACT family of fire dialers. We encourage you to read this entire manual before you apply power to your unit.

To ensure proper operation, S/FDACT fire dialers must be installed in accordance with the National Fire Alarm Code (NFPA 72), the National Electrical Code (NFPA 70), and according to the enclosed installation instructions.

<p>IMPORTANT: A solid connection to a local Earth Ground is required per the FCC to protect the telephone line circuits from electrical surges.</p>
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To verify that the S/FDACT fire dialer is operating properly and can successfully report an alarm, the fire dialer must be tested immediately after installation, and periodically thereafter, according NFPA 72 Chapter 10, and the enclosed test instructions.

Note: System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 Chapter 10 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

Chapter 1 – Introduction

Keltron's serial digital alarm communicator transmitter or SDACT and fire digital alarm communicator transmitter or FDACT are unique solutions that remotely monitor fire alarm control panels (FACP's), and enable an appropriate and timely response from personnel at a life safety event monitoring center.

When activated by changes from the monitored FACP's control circuit outputs, the SDACT and FDACT transmit field-programmable event reports using the industry standard SIA format to any SIA-compatible digital alarm communicator receiver (DACR) via the public switched telephone network (PSTN).

Additionally, the SDACT and FDACT can report events to two separate digital receivers located at two different physical locations. This allows both local and off-site monitoring using a single communication solution.

Keltron SDACT Model

The SDACT provides a remedy for FACP's, and other systems, that cannot report point-specific, critical alarm information to a local or off-site central station-style digital receiver through the PSTN.

The SDACT is a field-programmable, seven-zone, slave fire alarm digital communicator transmitter with an RS232 serial port. The SDACT provides four supervised hardwired alarm zones plus three unsupervised hardwired zones for external power source monitoring. The RS232 serial port is used for field programming as well as for supplementary monitoring of serial data from the FACP.

The SDACT's four alarm zones ensure that general event signals such as fire, trouble, water flow or supervisory can be reliably transmitted. These signals are typically provided by the general alarm, general trouble, etc., relay contact outputs of the FACP. In addition, the SDACT serial port monitors FACP serial data, which is normally intended for a local printer or CRT display. That data includes point-specific information such as detector type and address, and usually a broader range of event types. The SDACT analyzes the data and converts it to the SIA format for transmission over the PSTN.

This unique serial interface is accomplished using FACP personality module software developed exclusively by Keltron. The SDACT includes a personality software module that matches it to a specific FACP. The specific personality module must be specified at the time the SDACT is ordered.

In order to report point-specific information from medium to large size FACP's with a thousand or more addressable detectors, SDACT uses all four of the zone number digits available in the SIA format. However, some central station receivers or automation systems do not accept 4-digit zone numbers. To accommodate these central stations, a firmware option is available to limit the zone numbers to 3-digits. Instead, a range of account numbers is used, by adding what would be the 4th or leading zone digit to the field programmed primary or secondary account number as required. Please see Appendix A for additional detail. Currently the 3-digit option is factory configured only, and must be specified at time of ordering.

For field-programming, the serial port must be disconnected from the FACP, and connected to a WindowsTM PC running Keltron's S/FDACT programmer utility.

Keltron FDACT Model

The FDACT is a field-programmable, seven-zone, slave, fire alarm digital communicator transmitter with an RS232 port to facilitate programming quickly and easily from a Windows™ PC running Keltron's S/FDACT programmer utility.

The FDACT provides four supervised hardwired alarm zones plus three unsupervised hardwired zones for external power source monitoring. The FDACT's four supervised alarm zones are used to monitor general event signals such as fire, trouble, water flow or supervisory. These signals are typically provided by the general alarm, general trouble, etc., relay contact outputs of the FACP.

Benefits

- Using the widely available public switched telephone network (PSTN) the Keltron S/FDACT family of products enables efficient reporting of life-safety events to a central monitoring location or multiple locations.
- The SDACT enhances FACP performance by facilitating point-specific fire alarm reporting thereby enabling highly accurate responses through off-site annunciation.
- The S/FDACT provides flexibility of operation through intuitive programmability. This ensures a perfect match with project requirements and minimizes programming time. Default settings minimize the setup time.
- The S/FDACT provides general alarm and general trouble contact outputs. The alarm output indicates serial port-derived events that are pending transmission and input zone activations. The trouble output indicates telephone line faults, communicator faults, serial port faults as well as input zone and power faults. These outputs may be monitored or simply provide local fault indications.

Features

- The Keltron SDACT contains a powerful microprocessor, an ASCII data-to-SIA converter and a seven-zone digital communicator. This unique communicator combines seven hardwired zone inputs and an RS232 serial port.
- Primary alarm reporting is accomplished using the four EOL-resistor supervised zone inputs to monitor alarm, trouble, water flow, and supervisory outputs from the FACP. The three unsupervised zones may be used to monitor the AC power fail and no/low battery output contacts from the external power supply, if available.
- Zones 1 through 4 are typically used for standard alarm, trouble, water flow, and sprinkler supervisory signal monitoring. Zones 5, 6 and 7 are additional inputs, typically used for reporting the loss of AC and battery fail indications. All zones report using standard SIA event codes.
- The RS232 serial communications port adds supplementary, detector-specific reporting of all available information that enables accurate monitoring of event status, detector activation and address, panel status, and fire progression. The RS232 port is personality-matched to the intended

data source through a software interface. When the receiving FACP can support it, this may include communications supervision and interruption reporting.

- Either a 2 Hour transmission delay or No delay for AC power failure conditions is jumper selectable. (Refer to Programming features table on page 33)
- Test code call-in cycles may be programmed for either 4 or 24 hours and transmit both normal and off-normal condition test codes.
- Telephone lines are supervised and faults are reported using standard SIA event codes.
- A trouble report may also be sent to a separate telephone number as required by UL 864. In addition, as required by UL 864, distinct audible sounds are provided for trouble and alarm, with 24-hour trouble resound.
- Line seizure is provided for use with shared phone lines, as allowed by the local authority having jurisdiction.
- A manual test button is included.
- A silence pushbutton deactivates the on-board audible signal.
- A program pushbutton invokes the programming session.
- A CPU reset button resides on board.
- Local LED's and audible devices clearly indicate S/FDACT status.
- The Keltron S/FDACT provides contact outputs to indicate hardwired zone input activations and general faults. The SDACT contact outputs also indicate serial port-derived events pending transmission and serial port faults.
- Event codes for the hardwired zone inputs may be programmed by the user.
- The Keltron S/FDACT transmits signals in industry standard SIA format.
- Included with the S/FDACT is a programming utility that requires only a PC with a serial port and an appropriate cable.

FCC Requirements

Keltron's SDACT and FDACT comply with Part 68 of the FCC rules and the requirements adopted by the ACTA. Affixed to the dialer control board and inside the door of the optional enclosure is a label that contains, along with other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

When ordering service from the local telephone company, the applicable certification jack Universal Service Order Code ("USOC") is RJ-31X. The associated Facility Interface Code ("FIC") is 02LS2, and the associated Service Order Code ("SOC") is 9.0Y.

The plug and jack that connect the Keltron SDACT or FDACT to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. Two code-compliant telephone cords with modular plugs are provided. These are designed to be connected to a compatible modular jack that is also code-compliant. See installation instructions for details.

The ringer equivalence number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may cause those devices to fail to ring in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

If the Keltron SDACT or FDACT compromises your telephone network, the telephone company will notify you in advance that they may temporarily discontinue your service. If advance notice isn't practical, the telephone company will notify you as soon as possible. You will be advised of your right to file a complaint with the FCC if you believe it is warranted.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of your Keltron SDACT or FDACT. Should this happen, the telephone company will provide advance notice in order for you to make the necessary modifications to maintain uninterrupted service.

Should you experience trouble with your Keltron SDACT or FDACT, you may contact Keltron Customer Service at (781) 894-8710 ext.2077 for repairs or warranty information. If the equipment is causing harm to your telephone network, your telephone company may request that you disconnect the equipment until the problem is resolved.

Please refer all service issues to a Keltron Certified alarm technician. The SDACT or FDACT cannot be adjusted or repaired in the field.

The Keltron SDACT or FDACT may not be used on party lines. Connection to party line service is subject to state tariffs. Contact your state public utility commission, public service commission or corporation commission for information.

Warning: *Keltron's SDACT and FDACT have been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a commercial environment. The SDACT and FDACT generate, use and can radiate radio frequency energy and, if not installed and used in accordance with this manual, they may cause harmful interference to radio communications. Operation of these devices in a residential area is likely to cause harmful interference in which case the user will be required at his/her own expense, to take whatever measures are required to correct the interference.*

UL Requirements

UL Listed Signaling Device – UL 864 Central, Remote and Proprietary Protected Premise Unit Fire Alarm System Service.

The four hardwired, Class B supervised alarm zones are the primary means of alarm signaling for Keltron's SDACT and FDACT dialers, while the serial data connection of the SDACT model provides only supplementary information. Use of the Class B alarm zone inputs is required for UL Listed installations remotely monitoring FACP'S via the Public Switched Telephone Network. To indicate the supplementary and/or redundant nature of the serial data information at the receiving station, all serial port events (SDACT only) are transmitted as 'old' events or SIA 'O' blocks.

The SDACT and FDACT are not suitable for the direct monitoring of sprinkler supervisory devices, PIV, gate valves, tamper switches, etc., where ground fault detection is required by UL 864, 9th Edition, 2003. Monitoring these signals using control circuits or relays from an FACP is permitted.

On premises annunciation of SDACT and FDACT dialer fault conditions must be provided by the monitored FACP.

The SDACT serial data personality software modules have been tested for compatibility with the following UL Listed FACP'S:

Fire Control Instruments	7100-1, 7100-1D, 7100-2, 7100-2D
Fire Control Instruments	7200
Edwards Systems Technology	EST2
Mirtone	MIR2

The SDACT and FDACT dialers have been tested for compatibility with the following UL Listed Digital Alarm Communicator Receivers (DACR'S):

Keltron	DMP703, DMP704
DSC (Sur-Gard)	SG-System III, SG-MLR2-DG, SG-MLR2E, MLR-2000
Bosch (Radionics)	D6600
Osborne-Hoffman	OH2000E
Silent Knight	9800, 9500
Honeywell (Ademco)	MX8000

Parts List

Keltron SDACT and FDACT fire dialers ship with the following:

(1) Dialer control board	P/N 95M3225	(Listed Signaling Device Sub-assembly)
(1) Wall-mount enclosure	P/N SDACTBX	(Listed Signaling Device Enclosure)
(4) 10K EOL resistors	P/N 64K3355-10K	
(2) Modular patch cords	P/N 63RJ4507	
(1) Programming utility CD	P/N SDSFDPrgmr	
(1) Printed user manual	P/N 92MSDACT	

For SDACT only, one of the following personality software modules will be factory installed:

FCI 7100	P/N 97P1081SD
FCI 7200	P/N 97P1082SD
Edwards EST2	P/N 97P1041SD
Mirtone MIR2	P/N 97P1211SD

Specifications

Power specifications

Power supply input:	24 VDC nom., filtered, unregulated or regulated
Minimum input:	20.4 VDC.
Maximum input:	27.5 VDC.
Current draw:	75 mA all normal (idle)
	200 mA all alarm or lamp test

Transmission specifications

The Keltron S/FDACT will transmit per the SIA Digital Communication Standard of November 1991. Transmissions will be in accordance with the requirements of a Level 1 transmitter as defined in Section 5 (compatibility), Table 3 (SIA digital compatibility levels). For reference, the S/FDACT will transmit up to 20 events per call and this is referred to as SIA 20.

Mechanical specifications

Size of PC board:	6" H x 10.5" W
Weight:	11 oz.

Enclosure

Steel construction with conduit knockouts	
Hinged front access door with key lock, all keyed alike	
Size:	14" H x 17" W x 4" D
Weight:	12 lbs.

Environmental specifications

Relative humidity:	0 to 93% - non-condensing
Operating temperature:	0 to 49° C
Storage temperature:	-10 to 60° C

This device is suitable for dry, indoor use only.
This device is suitable for use in a non-corrosive environment only.

Functional specifications

Configuration memory:	256 bytes non-volatile EEPROM, supervised
Buffer memory:	48K bytes
Real time clock/calendar:	Non-replaceable Li battery, 10 yr. shelf life
Alarm zones:	4, EOLR supervised, Class B
EOLR value:	10K nom.
Max loop resistance:	100 Ohms
Response time:	500 mS
Power monitor zones:	3, unsupervised
Max loop resistance:	100 Ohms
Response time:	500 mS
Serial port:	1 port, RS232, DB9 connector
AC power transmission delay:	2 hour delay, no delay, jumper selectable (Refer to Programming features table on page 33)

Relay outputs: 2 SPDT, common alarm & common trouble
Contact ratings: 2A @ 30 VDC, Non-Inductive
Telephone lines: 2, supervised, RJ45 modular jacks
LED displays: 18
1 Power on (green)
1 Power monitor zone status (yellow)
8 Alarm zone status (4 red, 4 yellow)
2 Serial port status (1 red, 1 yellow)
4 Telephone line status (2 red, 2 yellow)
2 Relay output status (red)
Audible: 92 DB, pulsed for alarm, steady for trouble
User pushbuttons: 4 (reset, test, program, silence)
User jumpers: 8
2 Serial port handshake configuration
1 Audible enable
1 Serial port supervision enable
3 Power monitor zone configuration
1 AC power failure transmission delay configuration

Chapter 2 – Operation

All Normal Operation

When the Keltron S/FDACT is powered, and the input zones and other monitored status conditions are normal, only the green power on LED will be lit. All other LEDs will be dark. The audible will be silent. The general alarm and general trouble relay contacts will be in their normal state.

Alarm Operation

Zone Alarms

For a status change into an alarm condition (short circuit) on a given alarm zone input:

The zone alarm LED for that alarm zone input illuminates.

The common alarm relay energizes and the alarm contact active LED illuminates.

The audible device sounds the pulsed alarm signal.

The programmed (or default) alarm event code is transferred to the SIA transmitter. (see dialing operation)

The silence pushbutton may be used to silence the audible. Zone alarms are not latching, in that no user intervention is required to enable subsequent status change reports, for example, if the zone restores to normal.

Serial Port Events (SDACT only)

(For supplementary use only) When a complete FACP serial data message is received and recognized by the personality software module as a message including a valid point status change:

The serial alarm LED illuminates.

The common alarm relay energizes and the alarm contact active LED illuminates.

The audible device sounds the pulsed alarm signal.

The corresponding event code (See appendix A) is transferred to the SIA transmitter (see dialing operation) for transmission as an 'old' event using a SIA 'O' block.

If the corresponding event code represents an AC Power Failure message from the FACP, and if User Jumper J8 is installed, then the transmission and all local indications are delayed for 2 hours. If a corresponding AC Power Restore message is received from the FACP before the 2 hours elapses, the pending AC Power Failure transmission and the Restore transmission are cancelled. If an AC Power Restore message is received from the FACP after the 2 hour delay, i.e. after the AC Power Failure message has been transmitted, then the Restore is transmitted without delay. (Refer to Programming features table on page 33).

Note that the supplementary FACP serial port-derived events are not prioritized. All serial events are equivalent regardless of event type as concerns the local indication of an alarm condition. Once the event transmission is acknowledged by the receiving station DACR, the local alarm indications will cease, i.e. the serial alarm LED will go out, the audible will be silenced, and the common alarm relay will return to normal (assuming no other monitored conditions require the audible or common alarm relay to remain active) .

Trouble Operation

Zone Troubles

For a status change into a trouble condition (open circuit) on a supervised alarm zone input (1-4):

The trouble LED for that alarm zone input illuminates.

The common trouble relay energizes and the trouble contact active LED illuminates.

The audible device sounds the steady trouble signal.

The programmed (or default) trouble event code is transferred to the SIA transmitter. (see dialing operation)

For a status change into an off-normal condition on either the AC failure (zone 5), low battery (zone 6), or no/missing battery (zone 7) zone inputs:

The power fault LED illuminates.

The common trouble relay energizes and the trouble contact active LED illuminates.

The audible device sounds the steady trouble signal.

The programmed (or default) power monitor event code is transferred to the SIA transmitter. (see dialing operation)

If User Jumper J8 is installed, then an off-normal status change on the AC failure zone 5 will illuminate the power fault LED, but the trouble relay, local audible, and the AC Power Failure transmission are delayed for 2 hours. If zone 5 restores to normal before the 2 hours elapses, the pending AC Power Failure transmission and the Restore transmission are cancelled. If zone 5 restores to normal after the 2 hour delay, i.e. after the AC Power Failure has been transmitted, then the Restore is transmitted without delay. (Refer to Programming features table on page 33)

Note that the normal condition (normally open or normally closed) for zones 5, 6, and 7 is determined by user jumpers 5, 6, and 7 respectively.

The silence pushbutton may be used to silence the audible. The audible will automatically resound for zone troubles in 24 hours if the trouble condition is still present. Zone troubles are not latching, in that no user intervention is required to enable subsequent status change reports if, for example, the zone restores to normal.

Serial Port Trouble (SDACT only)

(For supplementary use only) Unless disabled by user jumper J4, the SDACT will continuously supervise the integrity of the serial port connection to the FACP. When a serial port trouble condition is detected:

The serial trouble LED illuminates.

The common trouble relay energizes and the trouble contact active LED illuminates.

The audible device sounds the steady trouble signal.

The ET (expansion trouble) event code is transferred to the SIA transmitter. (see dialing operation)

Note that the yellow serial trouble LED indicates the SDACT serial port trouble ONLY. It does not indicate the reception of a trouble signal from the monitored FACP. All signals from the monitored FACP illuminate the red serial alarm LED to indicate an FACP signal is active and a transmission is pending. The red serial alarm LED clears after the transmission is completed as explained above under Serial Port Alarms.

The silence pushbutton may be used to silence the audible. The audible will automatically resound for serial port trouble in 24 hours if the trouble condition is still present.

Telephone Line Trouble

While the telephone lines are not in use by the Keltron S/FDACT, the voltage of each line is continuously monitored by the S/FDACT to supervise the integrity of the field wiring connections to the telephone network. When a telephone line fault is detected:

The Telco fault LED for that line illuminates.

The common trouble relay energizes and the trouble contact active LED illuminates.

The audible device sounds the steady trouble signal.

The programmed (or default LT) line # trouble event code is transferred to the SIA transmitter. (see dialing operation)

The silence pushbutton may be used to silence the audible. The audible will automatically resound for telephone line trouble in 24 hours if the trouble condition is still present.

How it works:

The Keltron S/FDACT phone line supervision circuit does not measure loop current, and will not report a line fault if the voltage is at or above a 1.8 VDC threshold. Due to circuit component variations, telephone line faults may not be reported until the voltage drops below 1.4 VDC. The S/FDACT will always report a fault at 0 VDC, the open circuit condition. It is expected that the minimum line voltage will be 2.75 VDC, and will occur when the lines are in use by parallel house phones or other devices upstream of the S/FDACT.

The line voltages are checked every 30 seconds. Each line check takes two seconds, one second per line. This 32-second cycle is repeated indefinitely. If a line fault condition is detected five times in a row, a line fault is reported. Therefore, in the worst case, a fault is reported within 192 seconds (6 * 32), or 3 minutes 12 seconds after its occurrence. Any single line voltage reading above the threshold restarts the five-check cycle and results in a line restore report - only if a line fault was reported previously.

Telephone Communication Trouble

If the Keltron S/FDACT is unable to complete a telephone call to a receiving station DACR, because of failure to obtain a receiver handshake tone (2225 Hz), failure to receive a positive acknowledgement for each data block (2025 Hz), or for any other reason, then a communication trouble condition has been detected:

The Telco fault LED corresponding to the telephone number currently being used illuminates, i.e. the line #1 LED for the primary telephone number and the line #2 LED for the secondary telephone number.

The common trouble relay energizes and the trouble contact active LED illuminates.

The audible device sounds the steady trouble signal.

The programmed (or default YS) comm # trouble event code is transferred to the SIA transmitter, where # is 1 for the primary telephone number, and 2 for the secondary telephone number.

(see dialing operation)

The silence pushbutton may be used to silence the audible. The audible will automatically resound for telephone communication trouble in 24 hours if the trouble condition is still present.

Configuration Trouble

The Keltron S/FDACT stores user programmable settings in non-volatile EEPROM memory. The content of this memory is checked for integrity at power-up or reset, and whenever a new user configuration is programmed. If the configuration memory becomes corrupted, the S/FDACT cannot perform any dialer functions, since the stored telephone numbers and account numbers may be invalid. When configuration trouble is detected:

The eight Class B zone LEDs (4 Red alarm, 4 Yellow trouble) each illuminate. This is to indicate the non-functional status of the dialer, since under normal conditions a zone's alarm and trouble LED will never be lit simultaneously.

The common trouble relay energizes and the trouble contact active LED illuminates.

The audible device sounds the steady trouble signal.

Note that no SIA transmission is initiated.

The silence pushbutton may be used to silence the audible. The audible will automatically resound for configuration trouble in 24 hours if the trouble condition is still present. Configuration trouble can usually be corrected by reprogramming a configuration with the S/FDACT programmer utility. See Chapter 4.

Restore to Normal Operation

Zone Restores

For a status change to a restore condition on a given alarm zone input:

If restoring from alarm:

The alarm LED for that alarm zone input goes out.

If no other monitored conditions require the common alarm relay to be active, it returns to its normal state, and the alarm contact active LED goes out.

If no other monitored conditions require the audible to be active, the audible is silenced.

The programmed (or default) alarm restore event code is transferred to the SIA transmitter. (see dialing operation)

If restoring from trouble:

The trouble LED for that alarm zone input goes out.

If no other monitored conditions require the common trouble relay to be active, it returns to its normal state, and the trouble contact active LED goes out.

If no other monitored conditions require the audible to be active, the audible is silenced.

The programmed (or default) trouble restore event code is transferred to the SIA Transmitter. (see dialing operation)

For a status change to the normal condition on the AC failure (zone 5), low battery (zone 6), or no/missing battery (zone 7) power monitor zone inputs:

If all of the power monitor zones are normal, the power fault LED goes out.

If no other monitored conditions require the common trouble relay to be active, it returns to its normal state, and the trouble contact active LED goes out.

If no other monitored conditions require the audible to be active, the audible is silenced.

The programmed (or default) power monitor restore event code is transferred to the SIA transmitter. (see dialing operation)

Note that the normal condition (normally open or normally closed) for zones 5, 6, and 7 is determined by user jumpers 5, 6, and 7 respectively.

Serial Port Restore (SDACT only)

(For supplementary use only) If a serial port trouble condition was previously detected, and either the condition restores to normal or user jumper J4 is removed to disable serial port supervision:

The serial trouble LED goes out.

If no other monitored conditions require the common trouble relay to be active, it returns to its normal state, and the trouble contact active LED goes out.

If no other monitored conditions require the audible to be active, the audible is silenced.

The ER (expansion restore) event code is transferred to the SIA transmitter. (see dialing operation)

Telephone Line Restore

If a telephone line fault trouble condition was previously detected, and the condition restores to normal:

The Telco fault LED for that line goes out.

If no other monitored conditions require the common trouble relay to be active, it returns to its normal state, and the trouble contact active LED goes out.

If no other monitored conditions require the audible to be active, the audible is silenced.

The programmed (or default LR) line # restore event code is transferred to the SIA transmitter.
(see dialing operation)

Telephone Communication Restore

When the Keltron S/FDACT completes a call to a receiving station DACR, which was previously in communication trouble:

The programmed (or default YK) comm # restore event code is transferred to the SIA transmitter, where # is 1 for the primary telephone number, and 2 for the secondary telephone number.
(see dialing operation)

Daily Test Operation

If the Keltron S/FDACT is configured for 24 hour daily test interval (factory default), the daily test transmission will be sent once per day at the programmed (or default midnight) daily test time. If the S/FDACT is configured for 4 hour daily test interval, the test transmissions will be sent at the programmed daily test time and every 4 hours thereafter.

Daily test transmissions will alternate the telephone line used for each test. Daily tests are only sent to the primary receiving station (primary telephone number), unless the S/FDACT is unable to communicate with the primary receiver.

If the S/FDACT is all normal, the programmed (or default RP) normal test event code will be transferred to the SIA transmitter, otherwise the programmed (or default RY) off-normal test event code will be transferred to the SIA transmitter.

Dialing Operation

Whenever an event code is transferred to the SIA transmitter, either by a change of status of any monitored condition, or for a daily test or manual test, the transmitter initiates the dialing operation.

Line Seizure

To comply with industry standards, the Keltron S/FDACT is equipped with line seizure. Any time the S/FDACT needs to communicate with the receiving station, it will not be possible to use any telephone devices that are on the same line as the S/FDACT. Normally, this condition will last less than one minute, but under adverse telephone circuit conditions, could last as long as 15 minutes. Line seizure requires a connection to an RJ31X jack and the S/FDACT must be upstream, i.e. the first device on the incoming telephone line.

To begin the dialing operation, the S/FDACT seizes telephone line #1. It will wait sufficient time for the telephone network to terminate any call that may have been in progress. The S/FDACT then goes off-hook and blind dials the telephone number of the primary receiving station DACR, i.e. the S/FDACT will pause sufficient time to receive a dial tone but does not require a dial tone to start dialing.

The S/FDACT always dials using dual-tone multi-frequency (DTMF) tones. Please consult the factory for pulse or rotary dialing applications.

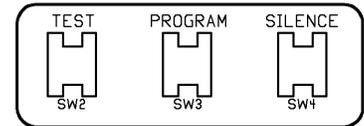
Sequence of Telephone Call Attempts.

Assuming no call attempts are successful, the Keltron S/FDACT will try a total of eight times to complete a call to the central receiving station. The S/FDACT will first try two attempts to the primary telephone number using telephone line #1. Then the S/FDACT will try two attempts to the primary telephone number using telephone line #2. At this point a comm #1 trouble is indicated, i.e. a communication failure to the primary receiving station telephone number. Then the S/FDACT will try two attempts to the secondary telephone number using telephone line #1. Finally, the S/FDACT will try two attempts to the secondary telephone number using telephone line #2. At this point a comm #2 trouble is indicated, and each status change condition that has been attempted the maximum eight times to the primary and secondary receiving station telephone numbers is discarded. Subsequent status change conditions will restart the call attempt sequence.

User Pushbutton Controls

Test

Pressing the 'test' pushbutton will immediately cancel programming mode if active.



Pressing and holding the test pushbutton for more than three seconds will:

- Illuminate all LEDS except the Telco line active and alarm contact active LEDS
- Sound the audible device steady on
- Activate the common trouble relay
- Transfer the programmed (or default RX) manual test event code to the SIA transmitter, which will initiate a dialing operation as described above.

The LEDS, audible and common trouble relay will remain active for as long as the test pushbutton is held.

Program

Pressing the 'program' pushbutton will place the Keltron S/FDACT into programming mode in order to download the configuration program to a PC, or upload a new configuration program from a PC.

When the S/FDACT enters programming mode the serial port baud rate and other settings will automatically change to match those required by the S/FDACT programmer PC software. For SDACT only, the FACP personality software will be disabled, and the serial port supervision feature will be disabled allowing the user to disconnect the FACP, and connect the serial port to his PC or laptop.

While in programming mode, the red and yellow serial port LEDS will alternately light once a second as an indication that programming mode is active.

If there is no serial port activity for 60 seconds, the S/FDACT will time out and resume normal monitoring mode. Pressing the test pushbutton also causes immediate return to normal monitoring mode.

Silence

Pressing the 'silence' pushbutton will silence the audible device.

The audible device will sound immediately if a new initiating condition occurs.

Reset

Additionally, there is a reset pushbutton, which is not meant to be used in normal operation. Pressing this pushbutton will reset the on-board microcontroller, which places both telephone lines on-hook, releases any line seizures, clears all pending events from the SIA transmitter, and clears all memory of off-normal conditions. Any off-normal conditions present after reset are treated as new events.

CAUTION: DO NOT RESET the S/FDACT while it is writing to its EEPROM memory as a result of uploading a new configuration in programming mode. Doing so could corrupt the stored configuration and make it unusable. A "Configuration Trouble" will result. This can be corrected by restarting programming mode, and uploading the new configuration again.

User Jumpers

There are eight user jumpers on the pc board. If the jumpers are changed, the effect is immediate. No reset is required.

J1 and J2 work together to configure which pins in the serial port DB-9 connector are used for the RTS (from SDACT) and CTS (to SDACT) hardware handshake control signals. These should be set appropriately for the specific FACP being monitored. (See Serial Port Installation notes.) The handshake control lines, and therefore J1 & J2, are not used for PC programming mode.

J3 if removed physically disconnects power from the audible device, thereby disabling all local audible signals.

J4 if removed disables supervision of the FACP serial port (SDACT only). J4 should be set appropriately for the specific FACP being monitored. (See Serial Port Installation notes.)

J5, J6, and J7 set the normal condition of the power monitor zones 5, 6, and 7 respectively. Jumper installed sets the zone to normally open. Jumper removed sets the zone to normally closed. The factory default is all zones normally open.

J8 configures the transmission delay for AC power failure events. The delay applies to activations of the AC Fail zone (zone 5) and AC power failure serial data messages from the monitored FACP (SDACT only). J8 installed provides for a 2 Hour Delay for both sources of AC power failure events. J8 removed provides No Delay. Note that removing J8 sets no delay for the next occurrence of an AC power failure event, and will not cancel a 2 hour delay already in progress. (Refer to Programming features table on page 33).

Chapter 3 – Installation Field Wiring

Installation Overview

Induced noise can interfere with telephone communications. To minimize the potential for induced noise follow these wiring precautions:

- Isolate input wiring from output and power wiring.
- Do not use a common conduit for input, output, or power wiring. If they must be run together, use shielded cable for as short a distance as possible and ground the shield at the panel only.
- Route all wiring around the inside perimeter of the enclosure. Do not cross the PC board.

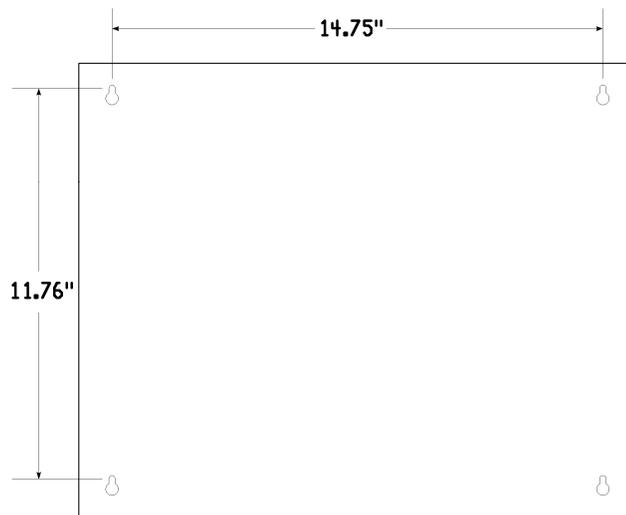
Selecting a Location

The Keltron S/FDACT may be installed in any environment which would be comfortable for a human being. Typically, the S/FDACT will be installed in the same room as the FACP which it is monitoring. Please read the environmental specifications for details. In addition:

- Do not mount on exterior walls, especially masonry walls
- Do not mount directly on exterior walls below grade
- Protect from splashing water
- Protect from water leaks
- Do not mount in areas of high humidity

Wall Mounting

Mount the S/FDACT enclosure securely to a plywood panel or interior wall. The enclosure provides four keyhole shaped mounting holes. If necessary, pre-drill holes separated by 14.75 inches horizontally, and 11.76 inches vertically.



Field Wiring Power Supply Connections

Note that the S/FDACT requires an external power source. The S/FDACT may derive power from the monitored FACP's non-resettable, auxiliary power output circuits if compatible, or from separate power supplies complying with the *Standard for Power Supplies for Fire Protective Signaling Systems*, UL 1481.

The S/FDACT requires 20.4-27.5 VDC filtered (24 VDC nominal), and the maximum load is 200 mA. To determine if the FACP's aux. power output is compatible, the voltage must be non-resettable, within the 20.4-27.5 VDC range, and the available DC current must be rated sufficiently to provide power to the S/FDACT and any other auxiliary devices sharing the aux. power circuit. Also, the installer must include the S/FDACT load current in the FACP's battery calculations.

Connect the 24 VDC supply making sure to observe the correct polarity.

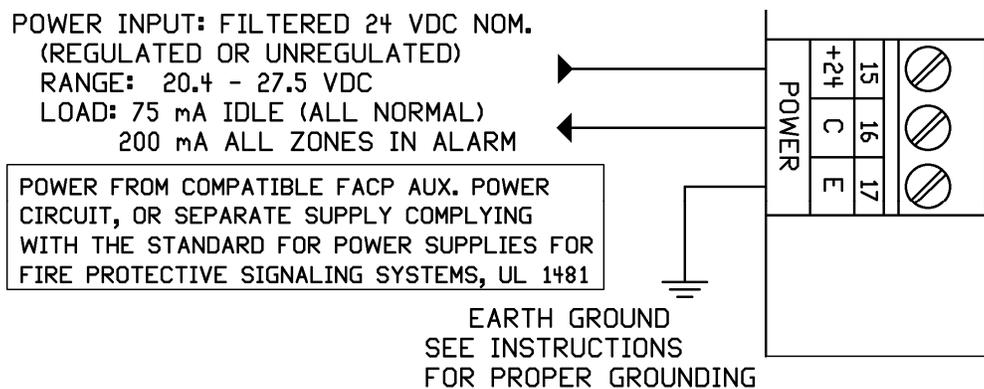
Connect the positive lead to terminal 15.

Connect the return lead (Common) to terminal 16.

Caution: reversing the polarity for long periods of time can damage both the unit and the power source. The S/FDACT is protected by a diode in series with the power input terminal.

IMPORTANT: Connect terminal 17 to a metallic cold-water-pipe, driven ground rod, or other proper earth ground. Transient voltage suppression devices protecting the telephone lines and power supply circuits are intended to shunt excess energy caused by nearby lightning strikes or other electrical surges directly to earth ground. These devices cannot function properly without a solid earth ground connection on terminal 17.

Use #18 wire minimum for all power supply wiring. The terminals will accept wire sizes up to #16.



Using the Fire Control Instruments 7100 Aux. Power Output

The 7100's 24 VDC non-resettable auxiliary power circuit is compatible with the S/FDACT. Connect S/FDACT terminal 15 (+24) to the 7100 BSM terminal TB4-2 (+), and connect S/FDACT terminal 16 (C) to the BSM terminal TB4-3 (-).

Using the Fire Control Instruments 7200 Aux. Power Output

The 7200's 24 VDC non-resettable auxiliary power circuit is compatible with the S/FDACT. Connect S/FDACT terminal 15 (+24) to the 7200 PSU/SPSU terminal TB1-1 or TB1-2 (+), and connect S/FDACT terminal 16 (C) to the PSU/SPSU terminal TB1-3 or TB1-4 (-).

Using the Edwards System Technology EST2 Aux. Power Output

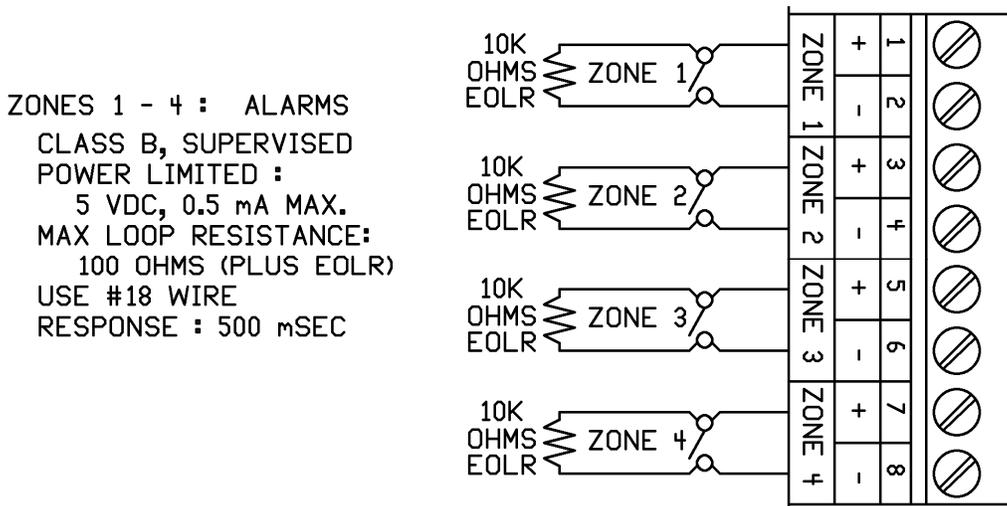
The EST2's 24 VDC non-resettable auxiliary power circuit is compatible with the S/FDACT. Connect S/FDACT terminal 15 (+24) to the EST2 PPS terminal TB3 SMK/AUX PWR (+), and connect S/FDACT terminal 16 (C) to the PPS terminal TB3 SMK/AUX PWR (-). Install PPS jumper JP4 to set the AUX PWR output to non-resettable.

Using the Mirtone MIR2 Aux. Power Output

The MIR2's 24 VDC non-resettable auxiliary power circuit is compatible with the S/FDACT. Connect S/FDACT terminal 15 (+24) to the MIR2 PPS terminal TB3 SMK/AUX PWR (+), and connect S/FDACT terminal 16 (C) to the PPS terminal TB3 SMK/AUX PWR (-). Install PPS jumper JP4 to set the AUX PWR output to non-resettable.

Field Wiring Supervised Hardwired Alarm Zones

The Keltron S/FDACT provides connections for four supervised hardwired alarm zone inputs. These inputs operate as Class B (programmable) normally open dry contact zone inputs. Initiating devices, typically dry contact outputs of FACP control circuits, must have a 10 KOhm end-of-line resistor (EOLR) installed in parallel at the monitored device. Four EOLRs are provided for this purpose, Keltron part number 64K3355-10K.



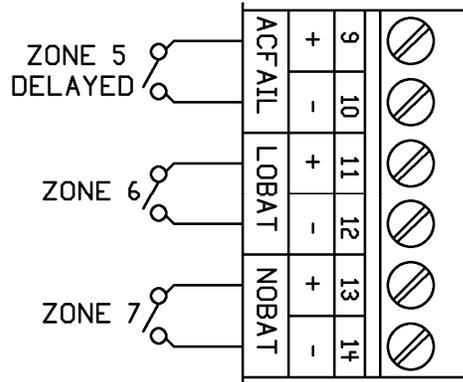
Connections to the alarm zones are as shown above. Input zones are sampled every 62mS. Changes must be present for 8 consecutive samples to pass debounce. This gives each zone a 500mS response time.

IMPORTANT: The hardwired alarm zones are the primary means of alarm signaling via Keltron's SDACT and FDACT dialers. Use of the alarm zone inputs is required for UL Listed installations monitoring FACP'S for Remote Station, Central Station, and Proprietary service.

Field Wiring Power Monitor Zones

Power monitor input zones 5, 6 and 7 may be used as external power source monitor input circuits. Each zone is independently configurable for either normally open or normally closed dry contact, programmable, activation. These zones are considered supplementary and unsupervised.

ZONES 5 - 7 : POWER MONITOR
 UNSUPERVISED
 POWER LIMITED :
 5 VDC, 0.5 mA MAX.
 MAX LOOP RESISTANCE: 100 OHMS
 USE #18 WIRE
 NORMALLY OPEN OR CLOSED
 (SEE JUMPERS J5-J7)
 RESPONSE : 500 mSEC
ZONE 5 TRANSMISSIONS DELAYED
 (SEE JUMPER J8)



Field Wiring Telephone Line Connections

Pre-connection Requirements

Please review the FCC requirements listed in the first chapter of this manual.

If requested by the telephone company, the following information must be provided before connecting this device to the telephone lines:

Manufacturer: KELTRON CORPORATION

Model number: SDACT or FDACT

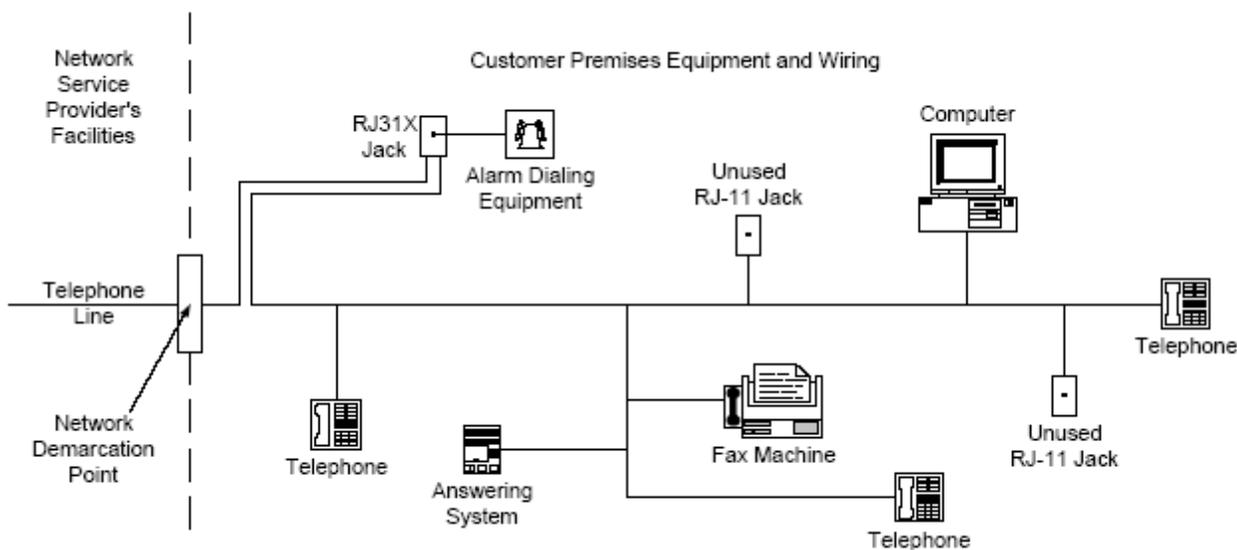
FCC registration number: US: KELAL01ASFDACT

Type of jack (to be installed by telephone company): RJ31X (2 Required)

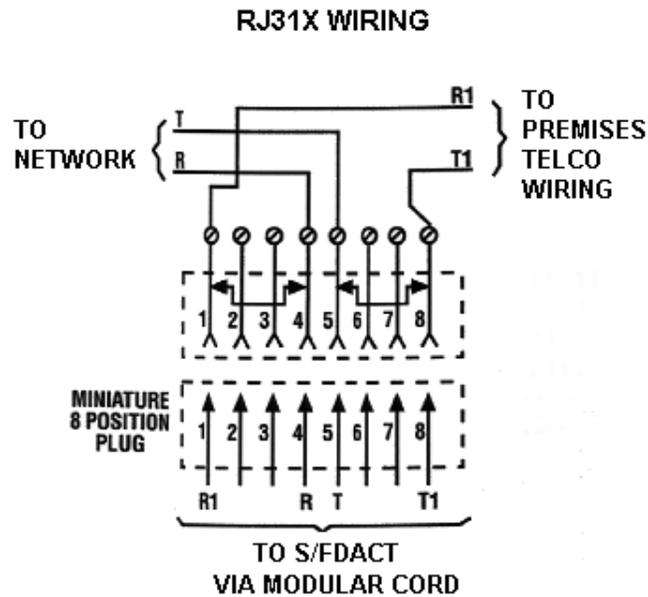
This device may not be directly connected to coin telephone or party line services.

Telephone Line Connection

The Keltron SDACT and FDACT are alarm dialing equipment and must be able to seize the telephone line and place a call in an emergency situation. They must be able to do this even if other equipment (telephone, answering system, computer modem, etc.) already has the telephone line in use. To do so, alarm dialing equipment must be connected to a properly installed RJ31X jack that is electrically in series with and ahead of all other equipment attached to the same telephone line. Series installation is depicted in the figure below. If you have any questions concerning these instructions, you should consult your telephone company or a qualified installer about installing the RJ31X jack and alarm dialing equipment for you.



The Keltron SDACT or FDACT provides two RJ-45 modular jacks for connection to two independent telephone lines. The S/FDACT modular jacks are wired in 1-to-1 correspondence with the RJ31X modular jacks. Connect the S/FDACT to the RJ31X jacks using the 1-to-1 modular patch cords supplied, Keltron part number 63RJ4507. Plug one end of the modular cord into the S/FDACT RJ-45 jack. Plug the other end into the RJ31X jack. For reference, proper wiring of the RJ31X jack is shown in the figure below.



The S/FDACT is electrically isolated from the telephone lines so that a ground fault on a telephone line does not fault the S/FDACT, and the S/FDACT complies with FCC requirements.

Each telephone line interface circuit of the S/FDACT is protected by positive temperature coefficient (PTC) resistors and transient voltage suppression devices.

Field Wiring FACP Serial Data Connections

The Keltron SDACT provides a DB-9 connector for the supplementary RS232 serial data monitoring port.

- 1 - No connection
- 2 - TD (transmit data) From SDACT
- 3 - RD (receive data) To SDACT
- 4 - No connection
- 5 - SG (signal ground)
- 6 - DSR from SDACT (always asserted) (+10V through a 3.3K current limiting resistor)
- 7 - RTS or CTS (set by J1 and J2)
- 8 - CTS or RTS (set by J1 and J2)
- 9 - No connection

IMPORTANT: The FACP serial data connections provide supplementary alarm information only. Use of the hardwired alarm zone inputs is required as the primary means of alarm signaling for UL Listed installations monitoring FACP'S for Remote Station, Central Station, and Proprietary service. To indicate the supplementary and/or redundant nature of the serial data information at the receiving station, all serial port events are transmitted as 'old' events or SIA 'O' blocks.

Connecting to the Fire Control Instruments 7100

Serial data connections are made to the FCI 7100 basic system module (BSM) RJ11 RS232 port. Connection to the RJ11 RS232 supervision pin (SUPV) permits the 7100 to supervise the cable connection and is optional.

7100 RJ11 Connector of BSM			
SDACT DB9 Pin		7100 RJ11 Pin	
RD	3	5	TXD
SG	5	3,4	GND
RTS	7 (or 8)*	6 (optional)	SUPV

As there are no control signals available in the 7100 RJ11 connector, the SDACT cannot supervise the cable connection. Remove user jumper J4 to prevent a serial port trouble condition.

* RTS and CTS pin numbers depend on J1 and J2 jumper settings. The factory default is RTS on Pin 7, CTS on Pin 8.

IMPORTANT: The 7100 baud rate must be 9600 baud.

See Appendix A for information on the SIA event codes and zone numbers used by SDACT when transmitting 7100 events.

Local Trouble Annunciation

For on premises annunciation of S/FDACT trouble conditions, connect the S/FDACT Trouble Relay contacts to the 7100 panel by means of an FCI AMM-2 Monitor Module or equivalent. The AMM-2 is an addressable dry-contact monitoring module compatible with the 7100 Signaling Line Circuits. The AMM-2 is mounted in a standard electrical box adjacent to the S/FDACT enclosure.

- ❑ Connect the S/FDACT Trouble Relay Normally Open contact, terminal 22, to the AMM-2 violet wire.
- ❑ Connect the S/FDACT Trouble Relay Common contact, terminal 21, to the AMM-2 yellow wire.
- ❑ Make sure to install the 4.7K EOL resistor included with the AMM-2.
- ❑ Wire the AMM-2 red and black wires to the 7100's signaling line circuit according to instructions provided in the 7100 installation manual.
- ❑ Set the AMM-2 rotary switches to the address range 50 – 59 to configure it for a non-latching trouble function. S/FDACT trouble conditions will result in an Off Normal signal at the 7100 panel.

Connecting to the Fire Control Instruments 7200

Serial data connections are made to the FCI 7200 system control unit (SCU) RJ11 RS232 port. Connection to the RJ11 RS232 supervision pin (SUPV) permits the 7200 to supervise the cable connection and is optional.

7200 RJ11 Connector of SCU			
SDACT DB9 Pin		7200 RJ11 Pin	
RD	3	5	TXD
SG	5	3,4	GND
RTS	7 (or 8)*	6 (optional)	SUPV

As there are no control signals available in the 7200 RJ11 connector, the SDACT cannot supervise the cable connection. Remove user jumper J4 to prevent a serial port trouble condition.

* RTS and CTS pin numbers depend on J1 and J2 jumper settings. The factory default is RTS on Pin 7, CTS on Pin 8.

IMPORTANT: The 7200 baud rate must be 1200 baud.

See Appendix A for information on the SIA event codes and zone numbers used by SDACT when transmitting 7200 events.

Local Trouble Annunciation

For on premises annunciation of S/FDACT trouble conditions, connect the S/FDACT Trouble Relay contacts to the 7200 panel by means of an FCI AMM-2 Monitor Module or equivalent. The AMM-2 is an addressable dry-contact monitoring module compatible with the 7200 Analog Loop Units. The AMM-2 is mounted in a standard electrical box adjacent to the S/FDACT enclosure.

- ❑ Connect the S/FDACT Trouble Relay Normally Open contact, terminal 22, to the AMM-2 violet wire.
- ❑ Connect the S/FDACT Trouble Relay Common contact, terminal 21, to the AMM-2 yellow wire.
- ❑ Make sure to install the 4.7K EOL resistor included with the AMM-2.
- ❑ Wire the AMM-2 red and black wires to the 7200's ALU signaling line circuits according to instructions provided in the 7200 installation manual.
- ❑ Set the AMM-2 rotary switches to the address range 50 – 59 to configure it for a non-latching trouble function. S/FDACT trouble conditions will result in an Off Normal signal at the 7200 panel.

In the event that the 7200 does not have an ALU module, a dedicated QZU/EZU conventional zone input can be used.

- ❑ Connect the S/FDACT Trouble Relay Normally Open contact, terminal 22, to one side of the conventional zone input.
- ❑ Connect the S/FDACT Trouble Relay Common contact, terminal 21, to the other side of the conventional zone input.
- ❑ Make sure to install a 3.9K EOL resistor.
- ❑ Program the 7200 conventional zone for trouble monitoring. S/FDACT trouble conditions will result in a trouble signal at the 7200 panel.

Connecting to the Edwards System Technology EST2

Serial data connections are made to the RS232 section of TB6 on the 2-MCM Main Controller Module. However, the 2-MCM module does not permit SDACT to supervise the cable connection to the EST2. Optionally, cable supervision can be achieved with the addition of an Edwards IOP3A Isolator RS232 card. Follow the instructions in the EST2 system manuals to install the IOP3A. Either RS232 output of the IOP3A may be used. Wire to TB2 when using RS232-1 OUT. Wire to TB3 when using RS232-2 OUT. Make sure to install jumper JP2 for TB2, or JP3 for TB3, to enable the SUPV pin of the IOP3A.

EST2 TB6 of 2-MCM			
SDACT DB9 Pin		2-MCM TB6 Pin	
RD	3		TXD
SG	5		COM

In this configuration, SDACT cannot supervise the cable connection. Remove user jumper J4 to prevent a serial port trouble condition.

EST2 TB2/3 of IOP3A			
SDACT DB9 Pin		IOP3A TB2/3 Pin	
RD	3	3	TXD
SG	5	2	COM
CTS	8 (or 7)*	1	SUPV

To supervise the cable connection at the SDACT, install user jumper J4. Remove jumper J4 to disable cable supervision at the SDACT.

* RTS and CTS pin numbers depend on J1 and J2 jumper settings. The factory default is RTS on Pin 7, CTS on Pin 8.

IMPORTANT: The EST2 baud rate must be 9600 baud.

See Appendix A for information on the SIA event codes and zone numbers used by SDACT when transmitting EST2 events.

Local Trouble Annunciation

For on premises annunciation of S/FDACT trouble conditions, connect the S/FDACT Trouble Relay contacts to the EST2 panel by means of a Signature Series SIGA-CT1 Single Input Module or equivalent. The SIGA-CT1 is an addressable dry-contact monitoring module compatible with the EST2 Signature Loop Controller. The SIGA-CT1 is mounted in a standard electrical box adjacent to the S/FDACT enclosure.

- ❑ Connect the S/FDACT Trouble Relay Normally Open contact, terminal 22, to the SIGA-CT1 TB2 terminal 8.
- ❑ Connect the S/FDACT Trouble Relay Common contact, terminal 21, to the SIGA-CT1 TB2 terminal 7.
- ❑ Make sure to install the 47K EOL resistor included with the SIGA-CT1.
- ❑ Wire the SIGA-CT1 TB1 terminals into the signature loop according to instructions provided in the EST2 installation manual.
- ❑ The EST2 loop controller assigns an address to the SIGA-CT1 module automatically. Program the EST2 panel to download Personality code 3 to the SIGA-CT1 module during system configuration. This sets the module for a N.O. non-latching trouble type application. S/FDACT trouble conditions will result in a trouble signal at the EST2 panel.

Connecting to the Mirtone MIR2

Serial data connections are made to the RS232 section of TB6 on the 2-MCM Main Controller Module. However, the 2-MCM module does not permit SDACT to supervise the cable connection to the MIR2. Optionally, cable supervision can be achieved with the addition of a Mirtone IOP3A Isolator RS232 card. Follow the instructions in the MIR2 system manuals to install the IOP3A. Either RS232 output of the IOP3A may be used. Wire to TB2 when using RS232-1 OUT. Wire to TB3 when using RS232-2 OUT. Make sure to install jumper JP2 for TB2, or JP3 for TB3, to enable the SUPV pin of the IOP3A.

MIR2 TB6 of 2-MCM			
SDACT DB9 Pin		2-MCM TB6 Pin	
RD	3		TXD
SG	5		COM

In this configuration, SDACT cannot supervise the cable connection. Remove user jumper J4 to prevent a serial port trouble condition.

MIR2 TB2/3 of IOP3A			
SDACT DB9 Pin		IOP3A TB2/3 Pin	
RD	3	3	TXD
SG	5	2	COM
CTS	8 (or 7)*	1	SUPV

To supervise the cable connection at the SDACT, install user jumper J4. Remove jumper J4 to disable cable supervision at the SDACT.

* RTS and CTS pin numbers depend on J1 and J2 jumper settings. The factory default is RTS on Pin 7, CTS on Pin 8.

IMPORTANT: The MIR2 baud rate must be 4800 baud.

See Appendix A for information on the SIA event codes and zone numbers used by SDACT when transmitting MIR2 events.

Local Trouble Annunciation

For on premises annunciation of S/FDACT trouble conditions, connect the S/FDACT Trouble Relay contacts to the MIR2 panel by means of a Signature Series GSA-CT1 Single Input Module or equivalent. The GSA-CT1 is an addressable dry-contact monitoring module compatible with the MIR2 Signature Data Circuit. The GSA-CT1 is mounted in a standard electrical box adjacent to the S/FDACT enclosure.

- ❑ Connect the S/FDACT Trouble Relay Normally Open contact, terminal 22, to the GSA-CT1 TB2 terminal 8.
- ❑ Connect the S/FDACT Trouble Relay Common contact, terminal 21, to the GSA-CT1 TB2 terminal 7.
- ❑ Make sure to install the 47K EOL resistor included with the GSA-CT1.
- ❑ Wire the GSA-CT1 TB1 terminals into the signature loop according to instructions provided in the MIR2 installation manual.
- ❑ The MIR2 loop controller assigns an address to the GSA-CT1 module automatically. Program the MIR2 panel to download Personality code 3 to the GSA-CT1 module during system configuration. This sets the module for a N.O. non-latching trouble type application. S/FDACT trouble conditions will result in a trouble signal at the MIR2 panel.

SDACT Field Wiring Connection Diagram

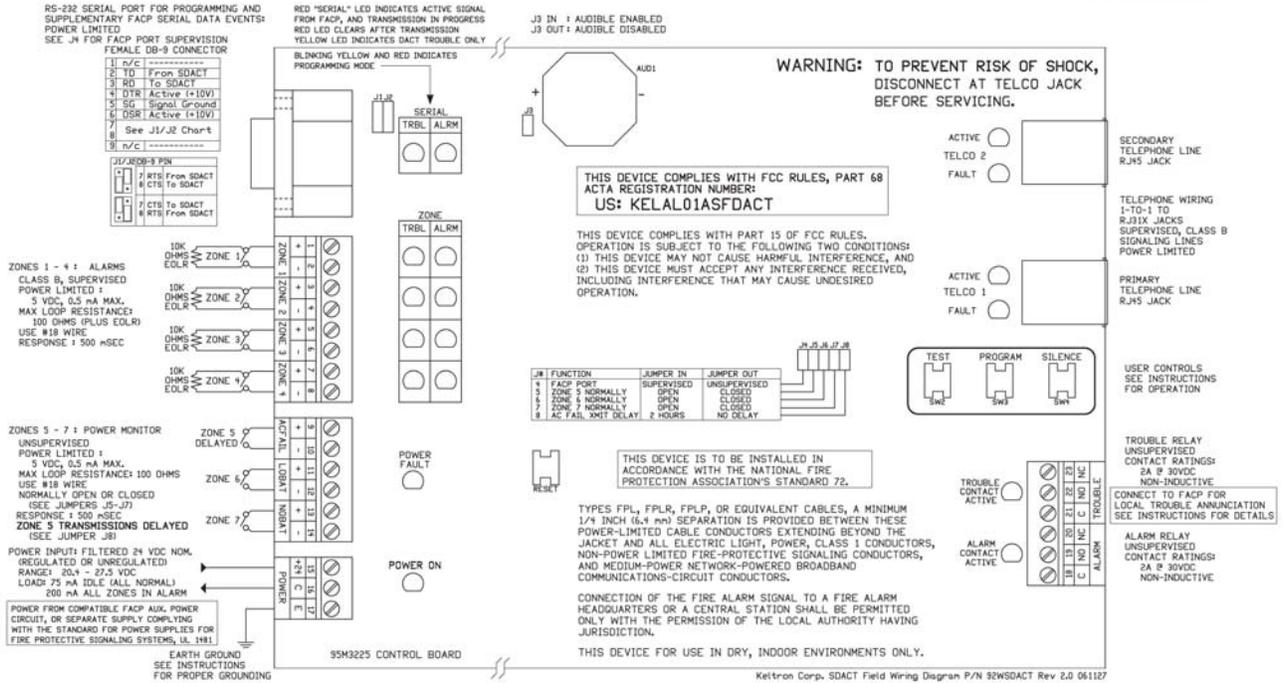
Keltron SDACT Series Fire Dialer



SIGNALING DEVICE Consists of:
 95M3225 Subassembly
 SDACTBX Enclosure
 UL Guide UOXX, File S3081
 Made in U.S.A.

Model: _____
 Serial Number: _____
 Software Version: _____
 For Installation and Operating instructions,
 see manual P/N 92MSDACT Rev: _____

AFFIX
UL LABEL
HERE



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Chapter 4 – Installation Programming

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES.			
This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program feature or option	Permitted in UL 864? (Y/N)	Possible settings	Settings permitted in UL 864
AC Delay	Y	2 hours and no delay	1-3 hours

The S/FDACT programmer is a Windows PC application, *SFDPrgrmr.exe*, to configure an SDACT or FDACT for use. The S/FDACT programmer is compatible with Windows XP, Windows 2000, Windows NT, and Windows 98. In many cases, the factory default settings for your S/FDACT will be used, but at a minimum you must program the telephone numbers of the intended receiving stations. You'll probably also want to change the account numbers from their factory defaults. Please refer to the figure below for the feature descriptions that follow.

Set Event Codes

These tabs are used to set the SIA event codes which will be transmitted by the S/FDACT. The 'Use Default Event Codes:' box is checked by default. This sets all programmable event codes to their factory

defaults. While this box is checked, you can view the event codes by clicking on the various tabs, but you cannot modify them. To change any event codes, first click on the 'Use Default Event Codes:' box so it is unchecked. Clicking the box again will reset all codes to the factory defaults. See Appendix B for a list of the defined standard SIA event codes.

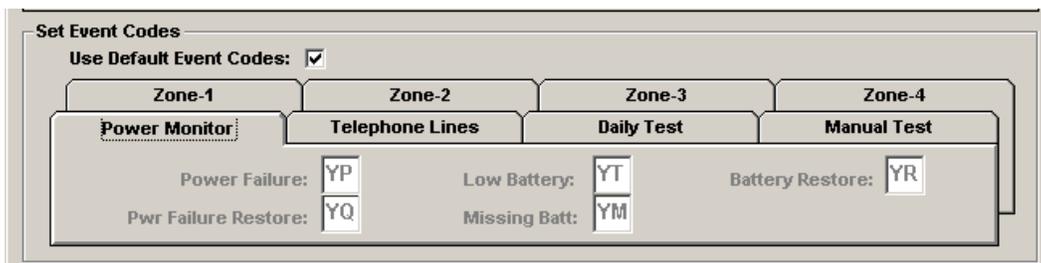
Zone Tabs

As shown in the figure above, the zone 1 through zone 4 tabs are used to set the event codes for the four EOLR-supervised alarm zones. You can set the codes for alarm, trouble, and their respective restores. The factory default codes for each zone are:

FA	“Fire Alarm”	FT	“Fire Trouble”
FH	“Fire Alarm Restore”	FJ	“Fire Trouble Restore”

Power Monitor Tab

As shown in the figure below, the power monitor tab is used to set the event codes for the three, unsupervised power monitor zones.



The AC power monitor input (zone 5) has a programmable fault code and restore code. The low battery input (zone 6) and the missing battery input (zone 7) each have a programmable fault code, but there is a common restore code. The factory default codes are:

YP	“Power Supply Trouble”	YT	“System Battery Trouble”
YQ	“Power Supply Restore”	YM	“System Battery Missing”
		YR	“System Battery Restore”

Telephone Lines Tab

As shown in the figure below, the telephone lines tab is used to set the event codes for line and communication faults, and their respective restores for the two telephone line connections.

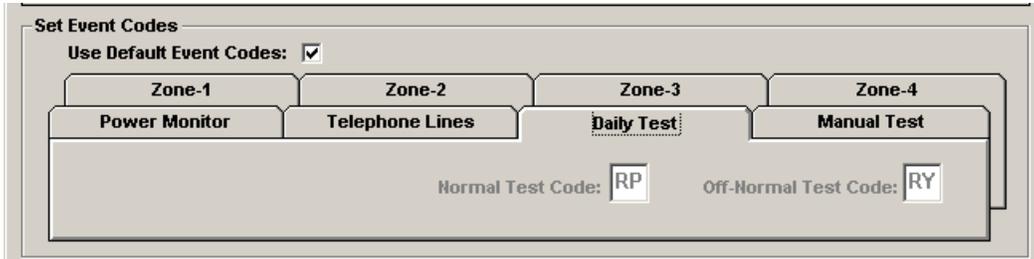


The factory default codes are:

LT	“Phone Line Trouble”	YS	“Communications Trouble”
LR	“Phone Line Restore”	YK	“Communications Restore”

Daily Test Tab

As shown in the figure below, this tab is used to set the codes used for daily test reports. There is a programmable system all normal code and a separate system off-normal code.

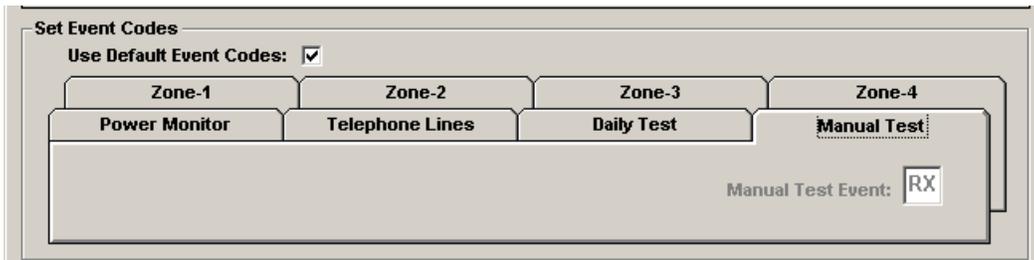


The factory default codes are:

RP "Automatic Test" RY "Test Off Normal"

Manual Test Tab

This tab is used to set the event code transmitted with manual test reports. The factory default code is RX 'manual test'.



Set Telephone Numbers

These boxes are used to set the primary and secondary telephone numbers that S/FDACT will dial when reporting. Both must be set before uploading the configuration to the S/FDACT.

Up to 20 digits or characters may be entered for each telephone number. The "," (comma) character is the SIA standard character for a two second pause during dialing. Each comma counts as one telephone number digit. Each additional comma generates another two second pause, i.e. three sequential commas will generate a six second pause (and will count as three telephone number digits.)

Set Telephone Numbers (20 digits max) Primary Phone Number: <input type="text"/> Secondary Phone Number: <input type="text"/>		Set Account Numbers (6 digits max) Primary Account Number: <input type="text" value="9999"/> Secondary Account Number: <input type="text" value="9998"/>	
Set Options			
Telephone Lines Used Both <input checked="" type="radio"/> Line 1 Only <input type="radio"/>	Send Troubles To 2nd Account <input type="checkbox"/>	Set Daily Test Interval 24 Hr <input checked="" type="radio"/> 4 Hr <input type="radio"/>	Set Daily Test Time hours : minutes <input type="text" value="24"/> : <input type="text" value="00"/>
Set Date and Time			
Change Time Mode	Auto Sync Time Mode	Set Date week day month date year <input type="text" value="Fri"/> <input type="text" value="5"/> <input type="text" value="14"/> <input type="text" value="04"/>	Set Time hrs : min : sec <input type="text" value="14"/> <input type="text" value="28"/> <input type="text" value="49"/>
		Download date/time From S/FDACT	Upload date/time To S/FDACT
Comm Port Settings		Upload / Download	
Port Settings 9600,N,8,1	Port Status open	Port# 1	Download Config From S/FDACT
			Upload Config To S/FDACT

The typical telephone number punctuation characters "(" (left and right parentheses), " " (space), and "-" (dash) are accepted for readability, but ignored during dialing. They count as one telephone digit each. No other, non-numeric characters are allowed.

For example, a telephone number of '9,(781) 899-9652' will dial 9, pause 4 seconds, then finish dialing 7818999652. Note that the example given uses 18 of the 20 available characters.

Set Account Numbers

These boxes are used to set the primary and secondary account numbers that Keltron S/FDACT includes in reports. The primary account number is always used when reporting to the primary telephone number, and the secondary account number is always used when reporting to the secondary telephone number. The same account number may be used for both if desired. The factory defaults are 9999 for the primary and 9998 for the secondary.

Set Options

Telephone Lines Used

The default setting is for S/FDACT to use and supervise both of its telephone line connections. If a second telephone line is not available, checking the "line 1 only" option will prevent S/FDACT from reporting a line fault condition on line 2.

Send Troubles to Second Account

Normally, the Keltron S/FDACT will send all reports to the primary account, i.e. the primary telephone number. S/FDACT will only use the secondary account and telephone number if it is unable to report to the primary. Checking this option box will cause S/FDACT to send troubles, supervisories, and their restores only to the secondary account. This function applies to the hard wired zones only and not the serial port-derived events.

Set Daily Test Interval

The factory default is for the Keltron S/FDACT to send daily test reports once every 24 hours. Per UL 864, if either programmed telephone number is not a direct line to the receiving station (DACR), but is call-forwarded to the line of the DACR, then the test interval must be reduced to once every 4 hours.

Click on the 4 Hr option to configure S/FDACT to send test reports every 4 hours. Note that the test reports will be sent at the programmed daily test time (see next option), and every 4 hours thereafter.

Set Daily Test Time

Use these boxes to set the time of day when daily test reports will be sent. Enter the time in 24 hour (military) format, from 00:00 (midnight) to 23:59. The factory default is 00:00 (midnight).

Set Date and Time

Use these controls to set the real-time clock and calendar in the S/FDACT.

Change Time Mode

By default this utility starts in 'auto sync time mode', in which the date and time are continually updated by the clock in your PC. In auto sync time mode you cannot modify the values displayed in the set date and set time boxes. Click on the 'change time mode' control to select 'manual time mode'. In manual time mode, you can modify the date and time to values other than your PC's clock. See figure below. Clicking the change time mode control again will return to auto sync time mode, and any values you entered for the date and time will be overwritten by current values from your PC's clock.



Set Date and Set Time

Use these boxes to manually set the date and time to be programmed into the S/FDACT. These boxes are disabled in auto sync time mode.

Download Date/Time from S/FDACT

This control allows you to check the current value of the real-time clock and calendar in the S/FDACT. This function requires that the S/FDACT's serial port be connected to your PC's comm port, and that the S/FDACT is powered-up and in program mode.

Upload Date/Time to S/FDACT

This control will program the S/FDACT's real-time clock and calendar with the date and time values currently displayed in the set date and set time boxes. This function requires that the S/FDACT's serial port be connected to your PC's comm port, and that the S/FDACT is powered-up and in program mode.

Upload/Download

Download Config from S/FDACT

This control will read the configuration program from the Keltron S/FDACT and display the current settings. This function requires that the S/FDACT's serial port be connected to your PC's comm port, and that the S/FDACT is powered-up and in program mode.

Upload Config to S/FDACT

This control will program the S/FDACT with the configuration settings currently in the display. This function requires that the S/FDACT's serial port be connected to your PC's comm port, and that the S/FDACT is powered-up and in program mode. The serial port LEDS will pause their alternating for a few seconds while the S/FDACT writes the new configuration to its EEPROM memory. Also during this time, the S/FDACT will not respond to other upload or download requests.

CAUTION: DO NOT RESET the S/FDACT while it is writing to its EEPROM memory. Doing so could corrupt the stored configuration and make it unusable. A "Configuration Trouble" will result. This can be corrected by restarting programming mode, and uploading the new configuration again.

When the new configuration has been successfully programmed, the serial port LEDS will resume blinking alternately, and the S/FDACT will be ready to accept additional requests.

Comm Port Settings

This area of the display is for information only. It displays the comm port #, whether the port is currently open, and the serial transmission parameters (baud rate, parity, etc.)

File Menu

Open

Displays a standard Windows file open dialog to open a previously saved S/FDACT configuration file.

Save

Saves the current configuration settings to the previously opened file. If no file was opened previously, it displays a standard Windows file save as dialog to save the current configuration settings to a file.

Save As

Displays a standard Windows file save as dialog to save the current configuration settings to a file.

Exit

Closes the open comm port, and exits the S/FDACT programmer utility.

Set Comm Port Menu

Allows the selection of the PC serial port, COM1 through COM16, for connection to the S/FDACT. An error message will be displayed if the serial port does not exist or cannot be opened, for example if the port is already in use by another Windows application.

Help Menu

Version

Displays version information about the S/FDACT programmer utility and versions of configuration files supported.

Chapter 5 – Testing the Installation

Test Instructions

The following test procedure should be performed immediately after installation, and on a periodic basis to ensure that your Keltron S/FDACT fire dialer can successfully report an alarm.

1. Notify the receiving station personnel on duty that a test is in progress.
2. If the test will involve the activation of indicating appliances of an FACP, then the occupants of the protected premises should also be notified that a test is in progress.
3. If the S/FDACT hardwired alarm zones are monitoring the general alarm contacts of an FACP, then trigger any alarm initiating device connected to the FACP. Otherwise, trigger the initiating device connected to the S/FDACT alarm zone.
4. Observe that the zone's alarm LED lights, the audible turns on, and the alarm relay activates. After a few seconds the Telco line active LED should light as the S/FDACT goes off-hook to call the receiving station.
5. After the call completes, check with the receiving station to verify that the correct alarm message was received.
6. For SDACT only, verify that a point specific alarm message was also received. This usually requires the SDACT to place a second call to the receiving station.
7. Reset the initiating device and/or FACP to restore the alarm zone to normal.
8. After the S/FDACT has reported the zone restore to normal, the S/FDACT should return to the idle, all-normal state.

Troubleshooting

In case of trouble...

Check for the proper power input with sufficient voltage and current. Ensure the input voltage does not drop below rated limits when the Keltron S/FDACT is activated for phone line signal transmission.

Observe the condition of all trouble LED's and relays. Ensure the reported condition is in fact faulted. If it is a valid fault external to the S/FDACT, rectify it.

To check the RS232 port for proper operation, place the S/FDACT in programming mode by pressing the program pushbutton. At the PC, set the baud rate, parity, word length, stop bits to 9600,N,8,1 using the terminal emulation program of your choice. (HyperTerminal is usually available on a Windows PC) Type 'ASDF'. If the serial port is functioning and cabling is correct, you should see 'ASDF' appear on your PC screen, as each character is echoed back from the S/FDACT. (If the terminal program is set to local echo typed characters, you should see 'AASSDDFF'.)

Zones one through seven operate similarly. An open circuit will measure approximately 5 VDC across the zone input terminals. A short circuit will measure 0 VDC across the zone input terminals. A restored zone, i.e. with 10K EOLR, will measure approximately 2.5 VDC across the zone input terminals. If an input zone reports a condition that conflicts with the voltage measurements, replace the S/FDACT and return the replaced unit for service.

If telephone line faults are reported and the phone line is operable, measure the voltage across the phone line connection terminals and report the findings to Keltron Corporation technical support.

The S/FDACT may be reset or powered down. This will clear all events pending transmission from memory.

Service

Please refer all service issues to a Keltron certified alarm technician. This device cannot be adjusted or repaired in the field. The S/FDACT does not contain field serviceable components and therefore is not field serviceable.

In case of trouble with the Keltron S/FDACT, notify the installing company or return the S/FDACT to the manufacturer.

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Keltron develops and manufactures secure, reliable, UL-listed fire and security alarm response management systems and components for the municipal and proprietary life safety markets. Products include radio fire alarm, coded fire alarm and high-line security systems, digital alarm receivers, universally compatible fire alarm control panel networking solutions and a full line of alarm annunciators. For more information, visit www.keltroncorp.com or contact us at 781-894-8710 ext 2054, or info@keltroncorp.com.

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Warranty

The Keltron Corporation warrants all products against defects in workmanship, materials, and construction under normal use and service for a period of ONE YEAR, except radio subscriber units which carry a 36-month warranty, from the date of shipment. Keltron Corporation's responsibility under this warranty is limited to the repair or replacement of defective parts that are returned to the factory, freight prepaid. Repaired parts are returned to the customer from the factory, freight prepaid.

This warranty does not extend to any of our products, which in our opinion have been subjected to misuse, neglect, accident, improper installation, or application. The warranty does not extend to products that have been repaired or altered outside our factory without our written approval.

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Appendix A: Information for Receiving Station Operators

This appendix provides information on how the Point ID's of each compatible FACP are converted to SIA Zone numbers, and how the different types of events from each FACP are mapped to the SIA Standard Event Codes. This information will be useful for interpreting or programming the receiving station DACR to which the Keltron SDACT will send SIA transmissions. Note that supplementary serial data events from compatible FACP'S will be received as 'old' events.

Fire Control Instruments 7100

The 7100 provides up to two Signaling Line Circuits (addressable device loops), with up to 99 Sensors and/or 99 Modules each. These point IDs are mapped into SIA Zones 100 to 499 according to the table below.

With the addition of INI-7100 Intelligent Network Interface Modules up to 64 7100 panels can be networked together. SDACT supports up to 15 networked panels by placing the network node number in the thousand's digit of the SIA Zone. Events from the panel directly connected to SDACT, i.e. the (Local) panel, always report on Zones in the 0100 - 0499 range. Networked panels 1 to 15 report on Zone ranges 1000 - 1499 to F000 - F499 respectively.

IMPORTANT: Please assign network node numbers in the 1 to 15 range only, and do not network more than 15 panels. Otherwise, ambiguous SIA Zone numbers will result. Also, please verify that the central station receiver, and central station automation computer are compatible with 4-digit SIA Zone numbers.

3-Digit Option: This option is available for central stations that are NOT compatible with 4-digit zone numbers. With this option, the zone numbers are always reported in the 0100 – 0499 range. The Node number of the networked panels, instead of being placed in the zone number thousand's digit, is added to the field programmed account numbers. For example, if the programmed account number is 1000, then events from the (Local) panel report on account 1000. Events from networked panel Node 01 will report on account 1001, and events from networked panel Node 15 will report on account 1015. The limitation of 15 networked panels maximum still applies. Note that the 3-Digit Option must be specified when ordering your SDACT from the factory. It is not a field configurable option. The designation "(3DO)" will be appended to the model number on the SDACT product labeling.

The conversion rules are summarized in the following table:

CATEGORY	7100 POINT	SIA ZONE
SLC 1	L1	0100
SLC 1 Sensors	L1S01 to L1S99	0101 to 0199
SLC 1 Modules	L1M01 to L1M99	0201 to 0299
SLC 2	L2	0300
SLC 2 Sensors	L2S01 to L2S99	0301 to 0399
SLC 2 Modules	L2M01 to L2M99	0401 to 0499
Node 01 Sensor e.g.	(Node01): L1S99	1199
Node 15 Sensor e.g.	(Node15): L1S99	F199

Following is a table of the SIA event codes transmitted by SDACT for the different types of 7100 events.

7100 Event Word	SIA Code	Code Description	Restore Code	Restore Code Description
FIRST ALARM ALARM P.A.S VERIFY	FA or SA	Fire Alarm or Sprinkler Alarm (if a waterflow device)	FH or SH	Fire Alarm Restore or Sprinkler Alarm Restore
ACTION ALERT	FG	Unverified Event – Fire	FR	Fire Restoral
OFF-NORMAL MLT EVENTS	FS UA	Fire Supervisory Untyped Zone Alarm	FV UH	Fire Supervision Restoral Untyped Alarm Restore
SHORT DISCONNECT MISSING WRONG TYPE EXTRA ADDR CONFIG ERR LOOP BREAK	FT	Fire Trouble	FR	Fire Restoral
TEST FAIL DIRTY VERY DIRTY	AS	Analog Service Needed	AN	Analog Restoral
OUTPT FAIL	YA	Bell Fault (Output Trouble)	YH	Bell Restoral
AC FLT TO	AT	AC Trouble	AR	AC Restoral
FAULT TALLY FLT EEPROM BAD	YX	Service Required	YZ	Service Completed
WALK TEST	TS	Test Start	TE	Test End
ALARM TEST SPVSN TEST FAULT TEST FIRE DRILL	RX	Manual Test	RX	Manual Test
PRGRM MODE	LB	Local Program Begin	LX	Local Program End
RESET	RR	Power Up	RR	Power Up

Fire Control Instruments 7200

The 7200 may have installed analog loop units (ALU) for addressable devices, and Quad zone units (QZU) or eight zone units (EZU) for conventional zones. Up to 15 of each unit type are numbered from 1 to F in hexadecimal, i.e. 123456789ABCDEF.

To convert these point IDs to SIA zone numbers, each type of unit is assigned to a separate block of 100 zone numbers. The thousands digit of the SIA zone number corresponds to the 7200 unit number, but runs from 0 to E in hexadecimal. **Please verify that the central station receiver, and central station automation computer are compatible with 4-digit SIA Zone numbers.** Addressable loop devices are numbered from 01 to 99, but there are two distinct types, Sensors and Modules. Therefore, 200 zones are assigned to each loop. Events pertaining to the entire loop, such as loop break or short circuit, use the xx00 zone numbers. For example, ALU1 Loop 1 uses Zone 0100, ALU1 Loop 2 uses Zone 0300, and ALUF Loop 2 uses Zone E300.

3-Digit Option: This option is available for central stations that are NOT compatible with 4-digit zone numbers. With this option, the zone numbers are always reported in the 0100 – 0608 range. The 7200 unit number minus 1, instead of being placed in the zone number thousand’s digit, is added to the field programmed account numbers. For example, if the programmed account number is 1000, then events from unit number 1 (ALU1, QZU1, EZU1) report on account 1000. Events from unit number 2 will report on account 1001, and events from unit number F will report on account 1014. Note that the 3-Digit Option must be specified when ordering your SDACT from the factory. It is not a field configurable option. The designation “(3DO)” will be appended to the model number on the SDACT product labeling.

The conversion rules are summarized in the following table:

CATEGORY	7200 POINT	SIA ZONE
ALU1 Loop 1 Sensors	L1S01 to L1S99	0101 to 0199
ALU1 Loop 1 Modules	L1M01 to L1M99	0201 to 0299
ALU1 Loop 2 Sensors	L2S01 to L2S99	0301 to 0399
ALU1 Loop 2 Modules	L2M01 to L2M99	0401 to 0499
QZU1 Zones	Zone 1 to Zone 4	0501 to 0504
EZU1 Zones	Zone 1 to Zone 8	0601 to 0608
ALU2 Loop 1 Sensors	L1S01 to L1S99	1101 to 1199
ALU2 Loop 1 Modules	L1M01 to L1M99	1201 to 1299
ALU2 Loop 2 Sensors	L2S01 to L2S99	1301 to 1399
ALU2 Loop 2 Modules	L2M01 to L2M99	1401 to 1499
QZU2 Zones	Zone 1 to Zone 4	1501 to 1504
EZU2 Zones	Zone 1 to Zone 8	1601 to 1608
Etc. for unit numbers 3 to F, with unit F as follows:		
ALUF Loop 1 Sensors	L1S01 to L1S99	E101 to E199
ALUF Loop 1 Modules	L1M01 to L1M99	E201 to E299
ALUF Loop 2 Sensors	L2S01 to L2S99	E301 to E399
ALUF Loop 2 Modules	L2M01 to L2M99	E401 to E499
QZUF Zones	Zone 1 to Zone 4	E501 to E504
EZUF Zones	Zone 1 to Zone 8	E601 to E608

Following is a table of the SIA event codes transmitted by SDACT for the different types of 7200 events.

7200 Event Word	SIA Code	Code Description	Restore Code	Restore Code Description
ALARM P.A.S VERIFY CROSS ZONE	FA or SA	Fire Alarm or Sprinkler Alarm (if a waterflow device)	FH or SH	Fire Alarm Restore or Sprinkler Alarm Restore
PRE-ALARM ACTION ALERT	FG	Unverified Event – Fire	FR	Fire Restoral
OFF-NORMAL	FS	Fire Supervisory	FV	Fire Supervision Restoral
SHORT CM SHORT DISCONNECT MISSING WRONG TYPE EXTRA ADDR CONFIG ERR TROUBLE LOOP BREAK	FT	Fire Trouble	FR	Fire Restoral
TEST FAIL DIRTY VERY DIRTY	AS	Analog Service Needed	AN	Analog Restoral
UNEXPECTED	YA	Bell Fault (Output Trouble)	YH	Bell Restoral
COMM FAULT	YC	Communications Fail	YK	Communications Restoral
FAULT	YX	Service Required	YZ	Service Completed
WALK TEST	TS	Test Start	TE	Test End
ALARM TEST FAULT TEST BATT TEST FIRE DRILL	RX	Manual Test	RX	Manual Test
PRGRM MODE	LB	Local Program Begin	LX	Local Program End
RESET	RR	Power Up	RR	Power Up

Edwards System Technology EST2

The EST2 allocates fixed ranges of 4-digit point IDs to all detectors, modules, and notification appliance circuits either connected directly to the 2-MCM main controller module or to the 2-LCX Expander module. In addition the EST2 assigns unique point IDs to various panel faults, for example point 0003 is assigned to Battery fault and point 0005 is assigned to Ground fault. Please refer to the EST2 System Operations Manual for a complete list of faults and point IDs.

No conversion is necessary for the detectors, modules, and notification appliance circuit point IDs. Those point IDs are transmitted directly as the 4-digit SIA zone number. The EST2 panel fault point IDs are converted to different SIA zone numbers so there is no conflict with the SDACT's hardwired zone numbers.

The conversion rules are summarized in the following table:

CATEGORY	EST2 POINT	SIA ZONE
2-MCM Detectors	0101 to 0196	0101 to 0196
2-MCM NAC	0201 to 0202	0201 to 0202
2-MCM Modules	0203 to 0296	0203 to 0296
2-LCX Detectors	0301 to 0396	0301 to 0396
2-LCX NAC	0401 to 0402	0401 to 0402
2-LCX Modules	0403 to 0496	0403 to 0496
Faults	0001 to 0029	0601 to 0629
Faults	xx97 to xx99	0797 to 0799

Following is a table of the SIA event codes transmitted by SDACT for the different types of EST2 events.

EST2 Event Messages	SIA Code	Code Description	Restore Code	Restore Code Description
1 ST FIRE ALARM FIRE ALARM ALARM- VERIFICATION	FA	Fire Alarm	FH	Fire Alarm Restore
MONITOR EVENT	UA	Untyped Zone Alarm	UH	Untyped Alarm Restore
SUPERVISORY	FS	Fire Supervisory	FV	Fire Supervision Restore
SHORT FAULT OPEN FAULT	FT	Fire Trouble	FR	Fire Restoral
OPEN FAULT (Battery)	YT	System Battery Trouble	YR	System Battery Restoral
OPEN FAULT (Primary Power)	AT	AC Trouble	AR	AC Restoral
MAINTENANCE- REQUIRED	AS	Analog Service Needed	AN	Analog Restoral
COMMUNICATION- FAULT	YC	Communications Fail	YK	Communications Restoral
GROUND FAULT	YP	Power Supply Trouble	YQ	Power Supply Restored
INTERNAL FAULT INTERNAL RESTART CLASS A FAULT DIALER xx FAULT	YX	Service Required	YZ	Service Completed

Mirtone MIR2

The MIR2 allocates fixed ranges of 4-digit point IDs to all detectors, modules, and notification appliance circuits either connected directly to the MIR2-MCM main controller module or to the MIR2-LCX Expander module. In addition the MIR2 assigns unique point IDs to various panel faults, for example point 0003 is assigned to Battery fault and point 0005 is assigned to Ground fault. Please refer to the MIR2 System Operations Manual for a complete list of faults and point IDs.

No conversion is necessary for the detectors, modules, and notification appliance circuit point IDs. Those point IDs are transmitted directly as the 4-digit SIA zone number. The MIR2 panel fault point IDs are converted to different SIA zone numbers so there is no conflict with the SDACT's hardwired zone numbers.

The conversion rules are summarized in the following table:

CATEGORY	MIR2 POINT	SIA ZONE
MIR2-MCM Detectors	0101 to 0196	0101 to 0196
MIR2-MCM NAC	0201 to 0202	0201 to 0202
MIR2-MCM Modules	0203 to 0296	0203 to 0296
MIR2-LCX Detectors	0301 to 0396	0301 to 0396
MIR2-LCX NAC	0401 to 0402	0401 to 0402
MIR2-LCX Modules	0403 to 0496	0403 to 0496
Faults	0001 to 0029	0601 to 0629
Faults	xx97 to xx99	0797 to 0799

Following is a table of the SIA event codes transmitted by SDACT for the different types of MIR2 events.

MIR2 Event Messages	SIA Code	Code Description	Restore Code	Restore Code Description
1 ST FIRE ALARM FIRE ALARM ALARM- VERIFICATION	FA	Fire Alarm	FH	Fire Alarm Restore
MONITOR EVENT	UA	Untyped Zone Alarm	UH	Untyped Alarm Restore
SUPERVISORY	FS	Fire Supervisory	FV	Fire Supervision Restore
SHORT FAULT OPEN FAULT	FT	Fire Trouble	FR	Fire Restoral
OPEN FAULT (Battery)	YT	System Battery Trouble	YR	System Battery Restoral
OPEN FAULT (Primary Power)	AT	AC Trouble	AR	AC Restoral
MAINTENANCE- REQUIRED	AS	Analog Service Needed	AN	Analog Restoral
COMMUNICATION- FAULT	YC	Communications Fail	YK	Communications Restoral
GROUND FAULT	YP	Power Supply Trouble	YQ	Power Supply Restored
INTERNAL FAULT INTERNAL RESTART CLASS A FAULT DIALER xx FAULT	YX	Service Required	YZ	Service Completed

Appendix B: SIA Standard Event Codes

AA	Alarm – Panel Substitution	DA	Card Assigned
AB	Abort	DB	Card Deleted
AN	Analog Restoral	DC	Access Closed
AR	AC Restoral	DD	Access Denied
AS	Analog Service	DE	Request to Enter
AT	AC Trouble	DF	Door Forced
BA	Burglary Alarm	DG	Access Granted
BB	Burglary Bypass	DH	Door Left Open - Restoral
BC	Burglary Cancel	DI	Access Denied – Passback
BD	Swinger Trouble	DJ	Door Forced - Trouble
BE	Swinger Trouble Restore	DK	Access Lockout
BG	Unverified Event - Burglary	DL	Door Left Open - Alarm
BH	Burglary Alarm Restore	DM	Door Left Open - Trouble
BJ	Burglary Trouble Restore	DN	Door Left Open (non-alarm, non-trouble)
BM	Burglary Alarm - Cross Point	DO	Access Open
BR	Burglary Restoral	DP	Access Denied - Unauthorized Time
BS	Burglary Supervisory	DQ	Access Denied - Unauthorized Arming
BT	Burglary: Trouble	DR	Door Restoral
BU	Burglary Unbypass	DS	Door Station
BV	Burglary Verified	DT	Access Trouble
BX	Burglary Test	DU	Dealer ID
BZ	Missing Supervision	DV	Access Denied - Unauthorized Entry Level
CA	Automatic Closing	DW	Access Denied - Interlock
CD	Closing Delinquent	DX	Request to Exit
CE	Closing Extend	DY	Door Locked
CF	Forced Closing	DZ	Access Denied - Door Secured
CG	Close Area	EA	Exit Alarm
CI	Fail to Close	EE	Exit Error
CJ	Late Close	EJ	Expansion Tamper Restore
CK	Early Close	EM	Expansion Device Missing
CL	Closing Report	EN	Expansion Missing Restore
CM	Missing Alarm - Recent Closing	ER	Expansion Restoral
CO	Command Sent	ES	Expansion Device Tamper
CP	Automatic Closing	ET	Expansion Trouble
CQ	Remote Closing	EX	External Device Condition
CR	Recent Closing	EZ	Missing Alarm - Exit Error
CS	Closing Keyswitch	FA	Fire Alarm
CT	Late to Open	FB	Fire Bypass
CW	Was Force Armed	FC	Fire Cancel
CX	Custom Function Executed	FG	Unverified Event – Fire
CZ	Point Closing	FH	Fire Alarm Restore
		FI	Fire Test Begin

FJ Fire Trouble Restore
FK Fire Test End
FL Fire Alarm Silenced
FM Fire Alarm - Cross Point
FQ Fire Supervisory Trouble Restore
FR Fire Restoral
FS Fire Supervisory
FT Fire Trouble
FU Fire Unbypass
FV Fire Supervision Restore
FW Fire Supervisory Trouble
FX Fire Test
FY Missing Fire Trouble
FZ Missing Fire Supervision

GA Gas Alarm
GB Gas Bypass
GH Gas Alarm Restore
GJ Gas Trouble Restore
GR Gas Restoral
GS Gas Supervisory
GT Gas Trouble
GU Gas Unbypass
GX Gas Test

HA Holdup Alarm
HB Holdup Bypass
HH Holdup Alarm Restore
HJ Holdup Trouble Restore
HR Holdup Restoral
HS Holdup Supervisory
HT Holdup Trouble
HU Holdup Unbypass

IA Equipment Failure Condition
IR Equipment Fail - Restoral

JA User Code Tamper
JD Date Changed
JH Holiday Changed
JK Latchkey Alert
JL Log Threshold
JO Log Overflow
JP User On Premises
JR Schedule Executed
JS Schedule Changed
JT Time Changed
JV User Code Changed

JX User Code Deleted
JY User Code Added
JZ User Level Set

KA Heat Alarm
KB Heat Bypass
KH Heat Alarm Restore
KJ Heat Trouble Restore
KR Heat Restoral
KS Heat Supervisory
KT Heat Trouble
KU Heat Unbypass

LB Local Program
LD Local Program Denied
LE Listen-in Ended
LF Listen-in Begin
LR Phone Line Restoral
LS Local Program Success
LT Phone Line Trouble
LU Local Program Fail
LX Local Programming Ended

MA Medical Alarm
MB Medical Bypass
MH Medical Alarm Restore
MI Message
MJ Medical Trouble Restore
MR Medical Restoral
MS Medical Supervisory
MT Medical Trouble
MU Medical Unbypass

NA No Activity
NC Network Condition
NF Forced Perimeter Arm
NL Perimeter Armed
NM Perimeter Armed, User Defined
NR Network Restoral
NS Activity Resumed
NT Network Failure

OA Automatic Opening
OC Cancel Report
OG Open Area
OH Early to Open from Alarm
OI Fail to Open
OJ Late Open

OK	Early Open	SR	Sprinkler Restoral
OL	Late to Open from Alarm	SS	Sprinkler Supervisory
OP	Opening Report	ST	Sprinkler Trouble
OQ	Remote Opening	SU	Sprinkler Unbypass
OR	Disarm From Alarm		
OS	Opening Keyswitch	TA	Tamper Alarm
OT	Late To Close	TB	Tamper Bypass
OU	Output State – Trouble	TC	All Points Tested
OV	Output State – Restore	TE	Test End
OZ	Point Opening	TH	Tamper Alarm Restore
		TJ	Tamper Trouble Restore
PA	Panic Alarm	TP	Walk Test Point
PB	Panic Bypass	TR	Tamper Restoral
PH	Panic Alarm Restore	TS	Test Start
PJ	Panic Trouble Restore	TT	Tamper Trouble
PR	Panic Restoral	TU	Tamper Unbypass
PS	Panic Supervisory	TW	Area Watch Start
PT	Panic Trouble	TX	Test Report
PU	Panic Unbypass	TZ	Area Watch End
QA	Emergency Alarm	UA	Untyped Zone Alarm
QB	Emergency Bypass	UB	Untyped Zone Bypass
QH	Emergency Alarm Restore	UG	Unverified Event – Untyped
QJ	Emergency Trouble Restore	UH	Untyped Alarm Restore
QR	Emergency Restoral	UJ	Untyped Trouble Restore
QS	Emergency Supervisory	UR	Untyped Zone Restoral
QT	Emergency Trouble	US	Untyped Zone Supervisory
QU	Emergency Unbypass	UT	Untyped Zone Trouble
		UU	Untyped Zone Unbypass
RA	Remote Programmer Call Failed	UX	Undefined
RB	Remote Program Begin	UY	Untyped Missing Trouble
RC	Relay Close	UZ	Untyped Missing Alarm
RD	Remote Program Denied		
RN	Remote Reset	VI	Printer Paper In
RO	Relay Open	VO	Printer Paper Out
RP	Automatic Test	VR	Printer Restore
RR	Power Up	VT	Printer Trouble
RS	Remote Program Success	VX	Printer Test
RT	Data Lost	VY	Printer Online
RU	Remote Program Fail	VZ	Printer Offline
RX	Manual Test		
RY	Test Off Normal	WA	Water Alarm
		WB	Water Bypass
SA	Sprinkler Alarm	WH	Water Alarm Restore
SB	Sprinkler Bypass	WJ	Water Trouble Restore
SC	Change of State	WR	Water Restoral
SH	Sprinkler Alarm Restore	WS	Water Supervisory
SJ	Sprinkler Trouble Restore	WT	Water Trouble

WU	Water Unbypass	ZT	Freeze Trouble
XA	Extra Account Report	ZU	Freeze Unbypass
XE	Extra Point		
XF	Extra RF Point		
XH	RF Interference Restoral		
XI	Sensor Reset		
XJ	RF Receiver Tamper Restoral		
XL	Low Received Signal Strength		
XM	Missing Alarm - Cross Point		
XQ	RF Interference		
XR	Transmitter Battery Restoral		
XS	RF Receiver Tamper		
XT	Transmitter Battery Trouble		
XW	Forced Point		
XX	Fail to Test		
YA	Bell Fault		
YB	Busy Seconds		
YC	Communications Fail		
YD	Receiver Line Card Trouble		
YE	Receiver Line Card Restored		
YF	Parameter Checksum Fail		
YG	Parameter Changed		
YH	Bell Restored		
YI	Overcurrent Trouble		
YJ	Overcurrent Restore		
YK	Communications Restoral		
YM	System Battery Missing		
YN	Invalid Report		
YO	Unknown Message		
YP	Power Supply Trouble		
YQ	Power Supply Restored		
YR	System Battery Restoral		
YS	Communications Trouble		
YT	System Battery Trouble		
YU	Diagnostic Error		
YW	Watchdog Reset		
YX	Service Required		
YY	Status Report		
YZ	Service Completed		
ZA	Freeze Alarm		
ZB	Freeze Bypass		
ZH	Freeze Alarm Restore		
ZJ	Freeze Trouble Restore		
ZR	Freeze Restoral		
ZS	Freeze Supervisory		