CIMCO ELECTRONICS, INC.
www.cimcoelectronics.com
E-MAIL: cimco@cimcoelectronics.com

P.O. Box 1338
McMurray, PA 15317
PHONE (724) 941- 8001
FAX (724) 941- 8002

Series 21 - Field Diagnostics

INDEX

CIMCO ELECTRONICS, INC.
www.cimcoelectronics.com
E-MAIL: cimco@cimcoelectronics.com

P.O. Box 1338
McMurray, PA 15317
PHONE (724) 941- 8001
FAX (724) 941- 8002

Troubleshooting the Model A21

- THIS DOCUMENT DESCRIBES CONDITIONS WHICH CAN BE CORRECTED IN SHOP OR FIELD INSTALLATIONS.
- THOSE CONDITIONS ARE LISTED BY MAJOR INSTRUMENT FUNCTION OR FEATURE CATEGORIES WHICH ARE:
  (1) INPUT VOLTAGE
  (2) TEMPERATURE MEASURE/INDICATION
  (3) SET-POINT ADJUSTMENTS
  (4) FAIL-SAFE FEATURES
- FOR ALL OTHER CONDITIONS CONTACT CIMCO.

SYMPTOM	*POSSIBLE CAUSE*	*RECOMMENDED ACTION*
(1) INPUT VOLTAGE		
NO STATUS LIGHTS	NO INPUT POWER	CHECK INPUT VOLTAGE, FUSES, BREAKERS, AND 120/240 VAC SELECTION
ABNORMAL DISPLAY	LOW INPUT VOLTAGE	CHECK INPUT VOLTAGE
TEMPERATURE INDICATION IS TOO LOW	120 VAC APPLIED WITH 240 VAC CONNECTION	CHECK 120/240 VAC SELECTION AND MEASURE INPUT VOLTAGE
NO FAN POWER OUTPUT BUT INSTRUMENT OPERATES	POWER IS CONNECTED TO TERMINALS T1 AND T4 (CORRECT CONNECTION FOR AC/DC POWER INPUT CONFIGURATION)	CONNECT POWER TO TERMINALS T11 AND T12; CHECK FAN FUSE
RELAYS ARE NOISY	LOW INPUT VOLTAGE	CHECK 120/240 SELECTION MEASURE INPUT VOLTAGE
ALARM ON AT ALL TIMES	LOW INPUT VOLTAGE	CHECK 120/240 SELECTION MEASURE INPUT VOLTAGE
(2) MEASUREMENT/INDICATION (FOR THERMOCOUPLES AND RTD'S)		
ZERO DEGREE C ON DISPLAY AND IS FLASHING	OPEN THERMOCOUPLE OR RTD'S	CHECK THERMOCOUPLE CONNECTIONS AND CONTINUITY OF THERMOCOUPLES
ABNORMAL DISPLAY	NOT USING TYPE E THERMOCOUPLE	CONFIRM PURPLE AND RED T/C LEADS.
TEMPERATURE INDICATION IS WRONG	NOT USING TYPE E THERMOCOUPLE	CONFIRM PURPLE AND RED T/C LEADS.
	THERMOCOUPLE CONNECTIONS ARE REVERSED	CONNECT RED T/C LEAD TO NEGATIVE TERMINAL
	CRIMPED CONNECTIONS ARE LOOSE	DO NOT USE CRIMPED CONNECTIONS

CIMCO ELECTRONICS, INC.
www.cimcoelectronics.com
E-MAIL: cimco@cimcoelectronics.com

P.O. Box 1338
McMurray, PA 15317
PHONE (724) 941- 8001
FAX (724) 941- 8002

SYMPTOM	*POSSIBLE CAUSE*	*RECOMMENDED ACTION*
(2) MEASUREMENT/INDICATION (FOR THERMOCOUPLES AND RTD'S) (continued)		
INTERMITTENT INDICATION	LOOSE T/C CONNECTIONS	TIGHTEN T/C CONNECTIONS
		RESET INSTRUMENT BY PRESSING, HOLD, AND RELEASE READ MAX. TEMP.AND FANS AUTO AND SILENCE LOCAL ALARM.
INSTRUMENT DOES NOT RESPOND TO CONTROL PANEL COMMANDS	SOFTWARE IS "LOCKED"	MUST RESET SOFTWARE OR
		REMOVE AND REPLACE INSTRUMENT FUSE.
(3) SET-POINT ADJUSTMENTS		
ALL SET-POINTS ARE FIELD PROGRAMMABLE. ACCESS CODE IS CONTROLLED BY THE TRANSFORMER MANUFACTURER.		
DO NOT CHANGE SET-POINTS WITHOUT APPROVAL OF TRANSFORMER MANUFACTURER.		
A SYSTEM TEST FEATURE IS INCLUDED ON MOST STANDARD MODELS.		
USE THIS TEST FEATURE TO EXAMINE THE SET-POINT ON AND OFF TEMPERATURES		
FANS, ALARM OR TRIP LIGHTS WILL NOT ENERGIZE	SET-POINTS ARE TOO HIGH	RESET SET-POINTS AUTO CHANGE TO DEFAULT SETTING
(4) FAIL SAFE FEATURES		
ALARM, FAN, OR FIFTH SET-POINT RELAYS STAY ON.	LOW INPUT VOLTAGE	CHECK INPUT VOLTAGE
FANS AND ALARM STAY ON PLUS THREE ZEROES ON TEMPERATURE DISPLAY	OPEN THERMOCOUPLE (OR RTD)	CHECK SENSOR CONNECTION AND RESISTANCE
TRIP LIGHT TURNS ON BUT TRIP RELAY DOES NOT ENERGIZE	OPEN THERMOCOUPLE (OR RTD)	CHECK SENSOR CONNECTION AND RESISTANCE
INSTRUMENT WILL NOT ENERGIZE	INPUT VOLTAGE TOO LOW OR HIGH	CHECK INSTRUMENT FUSE
FAN RELAY WILL NOT ENERGIZE	INPUT VOLTAGE TOO LOW OR HIGH---POSSIBLE VOLTAGE "SPIKES"	SOME INSTRUMENTS MAY HAVE VARISTORS MOUNTED NEAR THE TRANSFORMER. CHECK VARISTOR CONDITION.
	OVERLOAD ON FAN RELAYS	CHECK FAN FUSE

CIMCO ELECTRONICS, INC.
www.cimcoelectronics.com
E-MAIL: cimco@cimcoelectronics.com

P.O. Box 1338
McMurray, PA 15317
PHONE (724) 941- 8001
FAX (724) 941- 8002

Fail Safe Features

1. Loss of power to instrument
    1. Alarm relay turns on.
    2. Fan relays turn on.
    3. Optional 5th Set-point relay turns on.
    4. Trip relay does not turn on.

2. Power supply brown-out
    1. Power supply supervisor
    2. Automatic restart

3. Open temperature sensor
    1. Alarm relay turns on.
    2. Local alarm turns on.
    3. Alarm on status LED turns on.
    4. Fan relays turn on.
    5. Fan on status LED turns on.
    6. Digital display blinks.
    7. Phase LED associated with open sensor blinks.
    8. Press phase selector with blinking LED and digital display will indicate three zeroes.
    9. Functional sensors continue with normal operation.
    10. Trip relay is managed by operating sensors

4. Trip relay with open temperature sensor:
    1. Open temperature sensor does not energize trip relay.
    2. Trip relay will turn on if one or both of the other phase sensors indicate temperatures above the trip set-points.

5. Micro-processor failure
    1. Alarm relay turns on.
    2. Fan relays turn on.
    3. Power on led stays on.

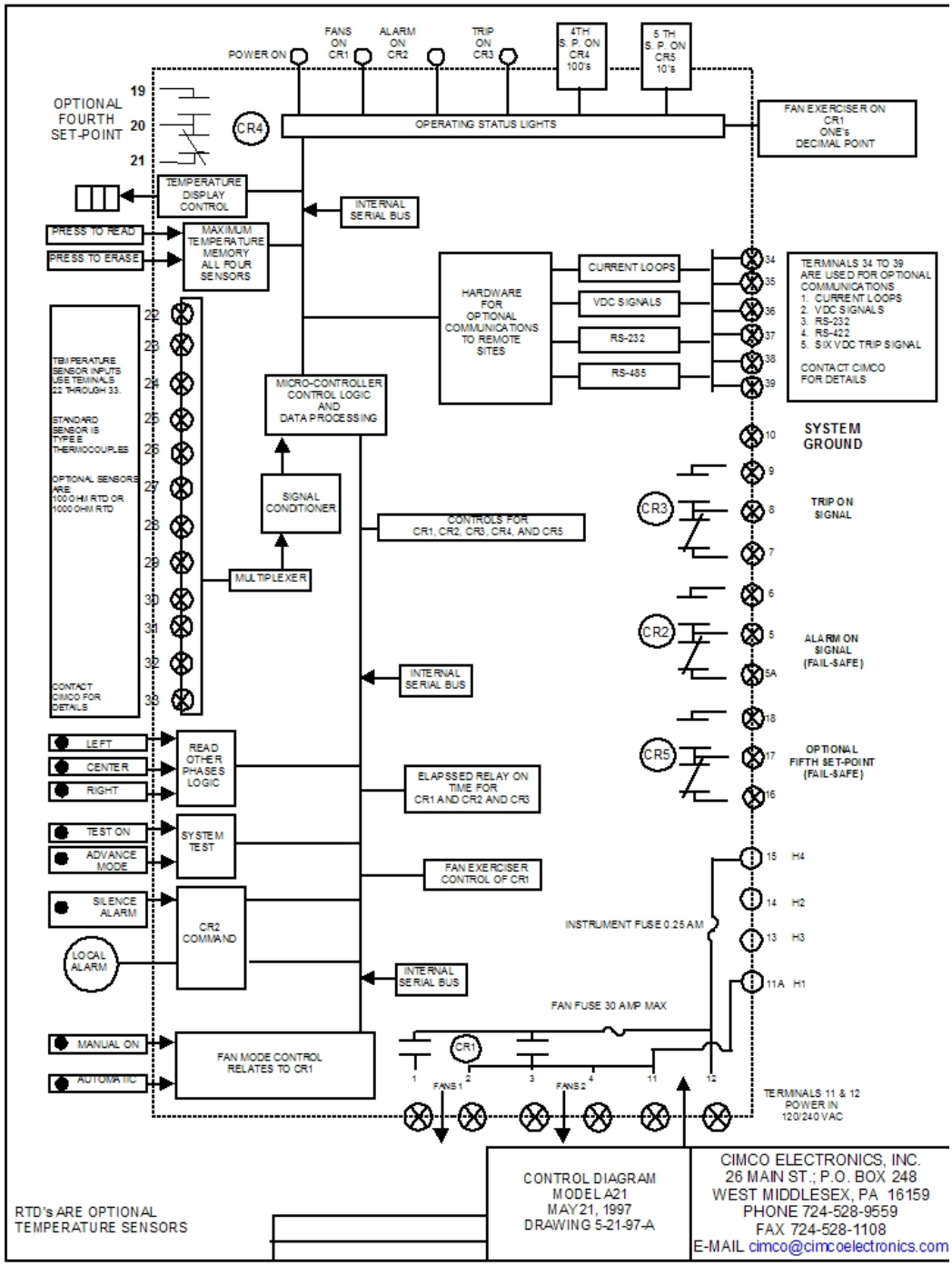
6. On set-points are limited to
    1. Minimum set-point on is 50 C and
    2. Maximum set-point on is 230 C.

7. EE Prom failure instructions
    1. EE Prom remembers user selected set-points.
    2. If EE Prom fails, operating software will use:
        1. 190 Degrees C for Fans On
        2. 200 Degrees C for Alarm On
        3. 210 Degrees C for Trip On
        4. 230 Degrees C for 4th Set-point On (Option)
        5. 230 Degrees C for 5th Set-point On (Option)

CIMCO ELECTRONICS, INC.
www.cimcoelectronics.com
E-MAIL: cimco@cimcoelectronics.com

P.O. Box 1338
McMurray, PA 15317
PHONE (724) 941- 8001
FAX (724) 941- 8002

CONTROL DIAGRAM



RTD's ARE OPTIONAL TEMPERATURE SENSORS