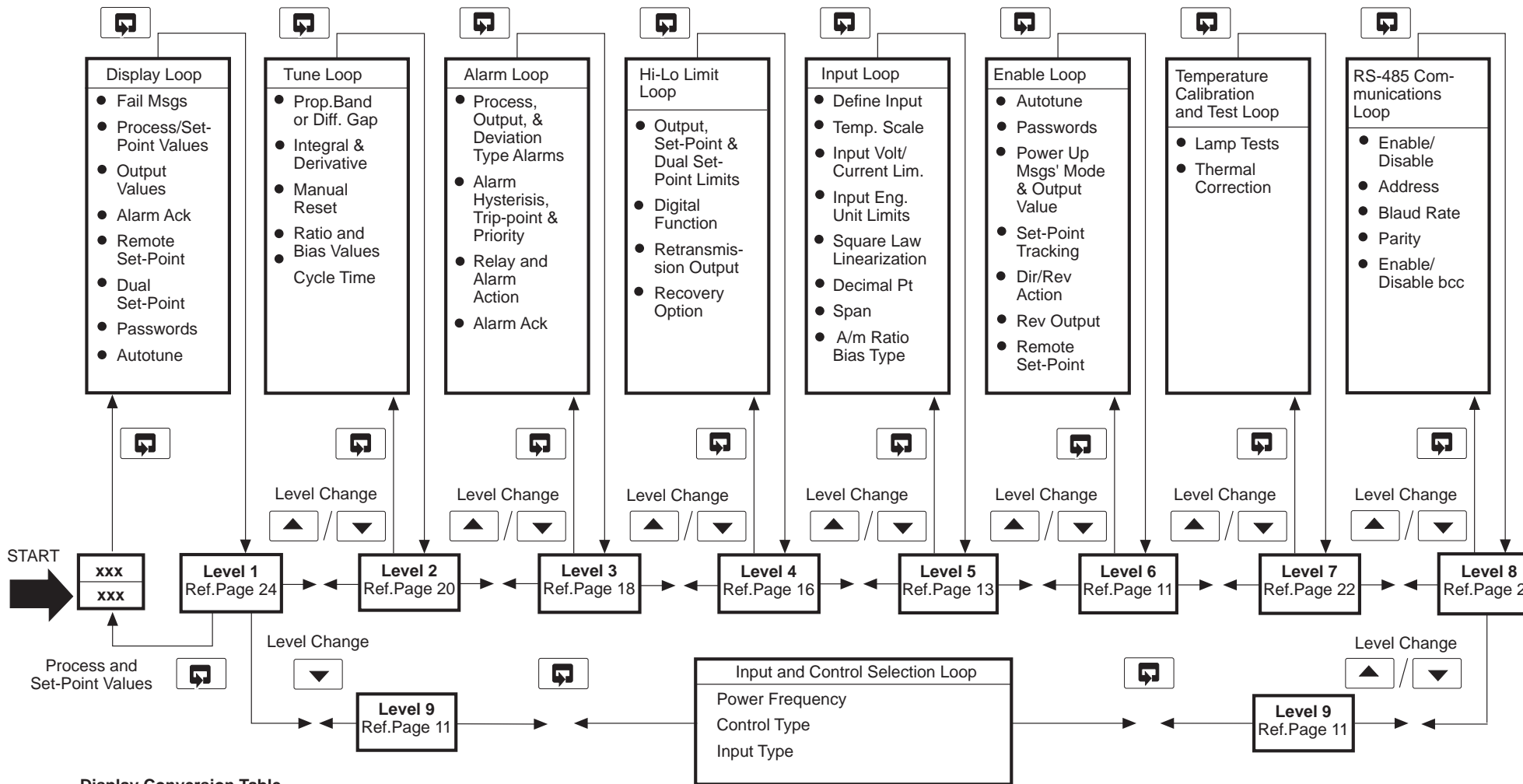
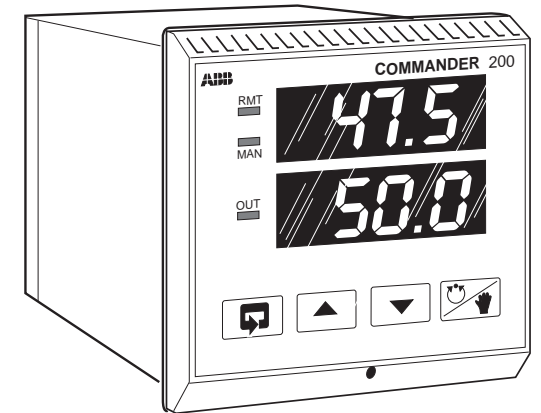


COMMANDER 200 Process Controller

Quick Reference Guide



Display Conversion Table

A	R	G	0	M	-	S	5
B	b	H	H or h	N	n or n	T	t
C	c	I	I	O	0 or o	U	U
D	d	J	J	P	P	V	U.
E	E	K	K	Q	Q.	Y	Y
F	F	L	L	R	r		

Display	Description and Valid Entry
<i>SC..L</i>	Square Law: <i>YES</i> – square law linearization of input, <i>no</i> – square root not extracted.
<i>EnG.H</i>	Engineering Units, Low: –999 to 9999 (applies only when <i>SC..L</i> not selected).
<i>EnG.L</i>	Engineering Units, High: –999 to 9999.
<i>SPRn</i>	Span: 0.001 to 9999 (controller gain calculation: process input span in engineering units is recommended except for a temperature controller gain of 100).
<i>A..rb.</i>	A/M Ratio Bias. <i>YES</i> – A/M ratio bias station enabled <i>no</i> – A/M ratio bias station not enabled.
<i>r.b.tY</i>	Type of Station: <i>rRto</i> , <i>bRS</i> , <i>r.b.</i>
<i>SRC</i>	Source (Ratio or Bias): <i>LoC</i> , <i>rE..</i>
<i>bRL</i>	Balance (Ratio or Bias): <i>StRn</i> , <i>RUto</i> .
<i>r.SrC</i>	Ratio Source (for <i>r.b.</i>): <i>LoC</i> , <i>rE..</i>
<i>b.SrC</i>	Bias Source (for <i>r.b.</i>): <i>LoC</i> , <i>rE..</i>
<i>r.bRL</i>	Ratio Balance (for <i>r.b.</i>): <i>StRn</i> , <i>RUto</i> .
<i>b.bRL</i>	Bias Balance (for <i>r.b.</i>): <i>StRn</i> , <i>RUto</i> .

<i>LEU.6</i>	LEVEL 6 – ENABLE. Point of entry.
<i>EnbL.</i>	
<i>RUto</i>	Automatic Tune Enable. <i>YES</i> or <i>no</i> . See instructions.
<i>tUnE</i>	
<i>t.PRS.</i>	Tune Password: 0 to 9999.
<i>C.PRS.</i>	Configure Password: 0 to 9999.
<i>P.UP..</i>	Power-up Message. <i>YES</i> – power up message displayed <i>no</i> – power up message suppressed.
<i>P..dE</i>	Power-up Mode: <i>LRSt</i> – power up mode is last mode, <i>_Rn</i> – power up mode is manual, <i>RUto</i> – power up mode is auto.
<i>a.UAL</i>	Fixed Power-up Output Value: 0.0 to output high/low
<i>SP.tP.</i>	limit. Set Point Tracking: <i>YES</i> – activates set point tracking, <i>no</i> – no set point tracking.
<i>drcCt</i>	
<i>ACTC</i>	Direct Acting: <i>YES</i> – selects direct control action, <i>no</i> – selects reverse control action.

Display	Description and Valid Entry
<i>LEU.2</i>	LEVEL 2 – TUNE. Point of entry.
<i>tUnE</i>	
<i>d.GAP</i>	Differential Gap: 0 to 100% of span.
<i>P.band</i>	Proportional Band: 0.1 to 999.9%.
<i>IntEr</i>	Integral Response: <i>YES</i> – integral response: reset enabled, <i>no</i> – no reset action.
<i>I.rRE.</i>	Integral Ratio Value: 0.1 to 120 rpt/min.
<i>..r.En</i>	Manual Reset Enable: <i>YES</i> – manual reset enabled (<i>IntEr = no</i>), <i>no</i> – no manual reset action.
<i>dr.IU</i>	Derivative Rate: 0 to 999.9 sec.
<i>..rSt</i>	Manual Reset Value: 0 to 100.0%.
<i>rRto</i>	Ratio Value: 0.01 to 99.99.
<i>bRS</i>	Bias Value: –999 to 9999.
<i>CYC.t</i>	Cycle Time: 1.0 to 300.0 sec.

<i>LEU.3</i>	LEVEL 3, ALARMS. Point of entry.
<i>ALr.5.</i>	
<i>dISP</i>	Display Alarms. Point of entry.
<i>ALr.5.</i>	
<i>ALr.1</i>	Alarm 1 setup. Point of entry.
<i>SEt</i>	
<i>tYPE</i>	Alarm Type. <i>H.PrC</i> – High process (<i>L.PrC</i> +3 to 9999) <i>L.PrC</i> – Low process (–999 to <i>H.PrC</i> –3) <i>H.dEU</i> – High deviation (0.1 to 9999) <i>L.dEU</i> – Low deviation (0.1 to 9999) <i>H.oUt</i> – High output (10 to <i>oP.HI</i>) <i>L.oUt</i> – Low output (<i>oP.Lo</i> to <i>oP.HI</i>) <i>nonE</i> – No alarm setting
<i>tRIP</i>	Trip Point (see <i>tYPE</i>).
<i>Pr.tY</i>	Alarm Priority: 1 (higher) or 2 (lower).
<i>HYS.t</i>	Alarm Hysteresis: Dead band value in engineering units.
<i>ALr.2</i>	Alarm 2 Setup. Point of entry. See <i>ALr.1</i> .
<i>SEt</i>	
<i>ALr.3</i>	Alarm 3 Setup. Point of entry. See <i>ALr.1</i> .
<i>SEt</i>	
<i>ALr.4</i>	Alarm 4 Setup. Point of entry. See <i>ALr.1</i> .
<i>SEt</i>	

Display	Description and Valid Entry
<i>rELY</i> <i>SEt</i>	Relay Setup. Point of entry.
<i>rLY.b</i> <i>SEt</i>	Relay B Setup. Point of entry.
<i>r.RCt</i>	Relay Action: <i>nonE</i> , <i>RLrS</i> , <i>rS</i> , <i>totL</i> , <i>t.RCt</i> .
<i>t.RCt</i>	Trip Action: Alarm set 1, 2, 3, 4, or any combination of 1 through 4.
<i>rLY.C</i> <i>SEt</i>	Relay C Setup. Point of entry. See <i>rLY.b</i> .
<i>ACKP-</i>	Acknowledge Alarms. Point of entry. <i>none</i> – no alarm acknowledgment. <i>NOr-</i> – relay follows alarm action. <i>LtCH</i> – alarm relay latches until acknowledged.

<i>LEU.4</i> <i>HI.Lo</i>	LEVEL 4 – HIGH AND LOW LIMIT. Point of entry.
<i>oP.HI</i>	Output High Limit: 10.0 to 100.0% relay output span. 10.0 to 110.0% mA output span.
<i>oP.Lo</i>	Output Low Limit: 0 to <i>oP.HI</i> –.1=% relay output span. –10.0 to <i>oP.HI</i> –.1=% mA output span..
<i>SP-H</i>	Local Set Point High Limit: <i>SP-L</i> to 9999.
<i>SP-L</i>	Local set point low limit: –999 to <i>SP-H</i> .
<i>d.SP.E</i>	Dual Set Point Enable: <i>YES</i> – dual set point selectable in Level 1. <i>no</i> – dual set point not enabled.
<i>SP.2.H</i>	Dual Set Point 2 High: <i>SP.2.L</i> to 9999.
<i>SP.2.L</i>	Dual Set Point 2 Low: –999 to <i>SP.2.H</i> .
<i>SP.2</i>	Dual Set Point 2 Start Value: <i>SP.2.L</i> to <i>SP.2.H</i> .
<i>dIG</i> <i>InPt</i>	Digital Input. Point of entry.
<i>LP.oE</i>	Lockout. <i>YES</i> – lockout front panel changes to digital input action, <i>no</i> – disable lockout.
<i>dI.FC</i>	Digital Input Function: A.M(auto/manual), Lr(local/remote), F.d.SP (Fixed dual set point), A.Ack (alarm acknowledge), rS (ramp/soak), tot (totalizer), or nonE.
<i>C.oUt</i>	Configured Output. <i>YES</i> – Use configured output value when transferring to manual, <i>no</i> – do not use value.

Display	Description and Valid Entry
<i>oUt.U</i>	Configured Output Value: 0 to 100%.
<i>F.SP.1</i>	Fixed Dual Set Point 1: <i>SP-H</i> to <i>SP-L</i> .
<i>F.SP.2</i>	Fixed Dual Set Point 2: <i>SP-H</i> to <i>SP-L</i> .
<i>rS.F</i>	Ramp/Soak Function: <i>run.Hd</i> (run/hold) or <i>St.St</i> (start/stop).
<i>t.st.F</i>	Totalizer Function: rS.St (reset/start) or St.St (start/stop).
<i>t.oGL</i>	Toggle Action: <i>YES</i> – set toggle action for A/M and L/R, <i>no</i> – dissable toggle.
<i>d.RCt</i>	Digital Action: <i>dir</i> (direct), <i>rEU</i> (reverse).
<i>rR.P</i> <i>SoAP.</i>	Ramp/Soak Profile. Point of entry.*
<i>t.st.L</i> <i>CnFG</i>	Totalizer Configuration. Point of entry.*
<i>r.t.En</i>	Retransmission Output Enable. <i>YES</i> or <i>no</i> . Set at <i>no</i> for <i>H.c.d.</i> .
<i>P.U.HI</i>	Retransmission process high. –999 to 9999 (20 mA retransmission output).
<i>P.U.Lo</i>	Retransmission process low. –999 to 9999 (4mA retransmission output).
<i>F.oUt</i>	Fault Output: 0 to 100% output.
<i>F.PEr</i>	Fault detection level % of volt input span (limits: –.05 to 6.45V, –48.3 to 193mV, .02 to 49.6mA): 0 to 100%.
<i>r.oPt</i>	Recovery Option: <i>_Rn</i> – remains in manual after input failure, <i>LRSt</i> – Returns to auto after input failure

<i>LEU.5</i> <i>InPt.</i>	LEVEL 5 – INPUT. Point of entry.
<i>tYPE</i>	Type Thermocouple: <i>J-tC</i> , <i>P-tC</i> , <i>E-tC</i> , <i>r-tC</i> , <i>S-tC</i> , <i>t-tC</i> , <i>b-tC</i> , or <i>n-tC</i> .
<i>dEG.C</i>	Degrees Celsius: <i>YES</i> – selects Celsius, <i>no</i> – selects Fahrenheit.
<i>InP.H</i>	Input High Value: 5.00 to 20.00mA d.c., 10.0 to 150.0mV d.c., or 0.1 to 5.00V d.c.
<i>InP.L</i>	Input Low Value: 4.00 to 19.00mA, 0.0 to 140.0mV, or 0.00 to 4.90V.
<i>d.P.</i>	Decimal Point: 0., 0.0, 0.00, 0.000 positions (units, tenths, etc.) for mA, mV, V: 0., 0.0 for THC, RTD.

DISPLAYS AND ENTRIES

The Commander C200 generates display prompts to make set-up and operation fast and easy. The appearance of specific prompts depends upon input selection, output form, and operating configuration. Refer to appropriate instruction manual for details.

- Up key: Selects *YES* response. Increases value or level.
- Down key: Selects *no* response. Decreases value or level.
- Scroll key: Press to enter level or move through prompts.

Display	Description and Valid Entry
<i>R.C.</i>	Diagnostic message. Starting point at start-up.
<i>FRIL</i>	See back cover for other diagnostic messages.

<i>LEU.1</i> <i>dSPL</i>	LEVEL 1 – DISPLAY. Point of entry.
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<i>xxx</i>	Process value and set point or output display, or totalized value display.
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<i>x.x.xx</i> <i>xxx</i>	Alarm Status (see ALARM MESSAGES).
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<i>r-SP</i>	Remote Set Point (<i>d-SP</i> must be no): <i>no</i> – remote set point not required, <i>YES</i> – remote set point active.
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<i>d-SP</i>	Dual set point (<i>r-SP</i> must be no): <i>no</i> – dual set point not required, <i>YES</i> – dual set point active.
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<i>bAL</i> <i>xxx</i>	Balance. Difference between remote/local or dual/local set point values.
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<i>d.EbL</i> <i>no</i>	Digital Input Enable. <i>YES</i> = enable.
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<i>totL</i> <i>dSPL</i>	Totalizer Status. See instructions.
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<i>rR_P</i> <i>SoRk.</i>	Ramp/Soak Status. See instructions.
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<i>Code</i> <i>xxx</i>	Access code required for tune or configure entry to other levels.
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	See instructions for description of ramp/soak reset (<i>r-5.r-5</i>), ramp/soak skip (<i>r-5.k</i>), or totalizer reset (<i>r-totL</i>).
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<i>Auto</i> <i>tune</i>	Auto tune procedure. See instructions.
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Display	Description and Valid Entry
<i>r.U.oP.</i>	Reverse Output: <i>YES</i> – selects reverse output (20 to 4 mA), <i>no</i> – selects direct output (4 to 20 mA).

<i>r.SP.E</i>	Remote Set Point Enable: <i>YES</i> – remote set point selectable in Level 1, <i>no</i> – remote set point not enabled.
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<i>r.SPH.</i>	Remote Input High: –999 to 9999. High engineering unit value of remote set point at 20 mA input.
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<i>r.SPL.</i>	Remote Input High: –999 to 9999. Low engineering unit value of remote set point at 4 mA input.
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<i>r.F.R.</i>	Remote Input Fault Action: <i>no tH.</i> (nothing), or <i>LoL</i> (local).
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<i>F.SP.L</i>	Fault Input Fault Value (Local): limited by local set point.
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<i>F.P.E.r</i>	Fault Detection Level Percentage: 0 to 100% of mA input span.
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<i>LEU.7</i> <i>dIAG</i>	LEVEL 7 – DIAGNOSTICS. Point of entry.
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<i>L.tSt</i>	Lamp Test: <i>YES</i> – lamp test performed, <i>no</i> – skip lamp test.
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<i>b.rGL</i> <i>ADJSt</i>	Brightness Adjustment: adjusts display brightness.
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<i>t.CAL</i>	Temperature Calibration: <i>YES</i> – temperature calibration point of entry, <i>no</i> – skip calibration procedure.
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<i>32.0</i>	Calibration Correction: 15.0 to –15.0 degrees. Temperature correction applied to input (shown at 32 degrees).
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<i>LEU.8</i> <i>485</i>	LEVEL 8 – RS485 COMMUNICATION. Point of entry. Refer to Instructions.
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<i>LEU.9</i> <i>Ctrl.</i>	LEVEL 9 – CONTROL AND INPUT TYPE. Point of entry.
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<i>H.rL</i>	Hertz: source frequency, 50 or 60Hz.
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<i>Ctrl.</i> <i>tYPE</i>	Control Type: <i>on.oF</i> (on/off), <i>CP.</i> (current proportioning), <i>tPE</i> (time proportioning).
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<i>InPt.</i> <i>tYPE</i>	Input Type: <i>U.o t.</i> , <i>tCPL</i> (thermocouple), <i>r.t.d.</i> (RTD), <i>_U.L.</i> (millivolt), <i>_R_P</i> (milliamp).
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DIAGNOSTIC MESSAGES

Message	Explanation and Action
<i>R.C.</i> <i>FRIL</i>	Power failure power-up message
<i>Ctrl.</i> <i>CHng</i>	Program change, defaults loaded
<i>FRIL</i> <i>F.bdC</i>	A/D converter failure
<i>FRIL</i> <i>F.bC.o</i>	Option board A/D converter failure
<i>FRIL</i> <i>rR_</i>	RAM failure
<i>FRIL</i> <i>F.tC.L</i>	Failed thermocouple, low
<i>FRIL</i> <i>F.tC.H</i>	Failed thermocouple, high
<i>FRIL</i> <i>F.r.t.d</i>	Failed RTD
<i>FRIL</i> <i>F.r.t.L</i>	Failed RTD, low
<i>FRIL</i> <i>F.r.t.H</i>	Failed RTD, high
<i>FRIL</i> <i>F.CJC</i>	Failed cold junction compensating resistor
<i>FRIL</i> <i>F._R.L</i>	Failed 4 to 20 mA input, low
<i>FRIL</i> <i>F._R.H</i>	Failed 4 to 20 mA input, high
<i>FRIL</i> <i>F.Lo</i>	Under voltage
<i>FRIL</i> <i>F.Hi</i>	Over voltage
<i>FRIL</i> <i>F.r-5.L</i>	Failed remote set point, low
<i>FRIL</i> <i>F.r-5.H</i>	Failed remote set point, high

ERROR MESSAGES

Message	Explanation and Action
<i>x.x.xx</i> <i>xxx</i>	Process value and alarm message flash while set point or output are displayed. See alarm message breakdown below.
<i>x.x.xx</i> <i>n.RCk.</i>	Alarm not acknowledged
<i>x.x.xx</i> <i>ACKd</i>	Alarm acknowledged
<i>1.x.xx</i>	Alarm 1 set alarm
<i>2.x.xx</i>	Alarm 2 set alarm
<i>3.x.xx</i>	Alarm 3 set alarm
<i>4.x.xx</i>	Alarm 4 set alarm
<i>x.H.xx</i>	High alarm
<i>x.L.xx</i>	Low alarm
<i>x.x.Pr</i>	Process alarm
<i>x.x.dU</i>	Deviation alarm
<i>x.x.oP</i>	Output alarm