

EMOAC HARDWARE CONFIGURATION

FACTORY DEFAULT HARDWARE CONFIGURATION

N1 BACnet MS/TP Network	NONE. No MS/TP sensors or building automation system connected.
Actuator Type	2-10 VDC proportional actuator
ECO Fault Signal (EMOAC-5000 only)	ON. Actuator feedback signal and active faults passed to economizer controller.
Outdoor Airflow Sensor	Integral, -U or -T, thermal dispersion airflow/temperature probe(s) - Auto detected
Outdoor Air Intake Sensor Area	Null. MUST BE ENTERED FOR OPERATION.
CO2 Sensor	NONE
Occupancy Counter	NONE
Alarm/Mode Relay Assignment	ALRMS (assigned to active alarms bound to N.O. relay, R1)

CUSTOM HARDWARE CONFIGURATION

Open by simultaneously pressing {ESC} {ENT} during normal operation

Use ↑↓ buttons to navigate up/down menu. Press {ENT} to modify (parameter will flash). Use ↑↓ buttons to modify, {ENT} to accept, {ESC} to keep previous.

Fixed parameters (parameters that cannot be changed) will indicate "PARAMETER FIXED"

If LOCK SECURITY<->NONE using the SETUP MENU pressing enter will indicate "CONFIG LOCKED" and only parameter viewing is allowed.

Navigate entire menu to step 29 to save settings. Press {ESC} twice at any time to exit without saving changes.

ITEM #	PARAMETER	VALUE	DESCRIPTION	SKIP TO
1	N1 DEVICES	NONE	No BACnet MS/TP devices connected to network N1.	
		SENS	Approved MS/TP CO2 and/or Occupancy Counters connected to network N1. <i>Note: Approved sensors have network parameters factory preset and autodetected by the EMOAC controller. No configuration is required. If custom configuration of network parameters is desired (baud rate, device MAC address or device/sensor device instance numbers) select BAS rather than SENS.</i>	
		BAS	BAS MS/TP network connected to network N1 <i>Note: MS/TP network parameters should be configured by the network integrator. Choose this setting without a BAS is it is desired to modify network settings (i.e. baud rate, device MAC address, or device instance numbers of device/network sensors).</i>	
2	ACTR SGNL	0-5V	0-5 VDC actuator control signal, 0% to 100% of full span.	
		0-10V	0-10 VDC actuator control signal, 0% to 100% of full span.	
		2-10V	2-10 VDC (can drive a 4-20 mA input) actuator control signal, 0% to 100% of full span. <i>Note: Economizer controller (by others) must be set to match the control signal of the actuator.</i>	
3	ITEM 4 in only visible on the EMOAC-5000 controller.			
4	ECO FAULT	OFF	No fault signal provided to the economizer controller.	
		ON	The actuator feedback signal is passed as the economizer controller fault input unless modified by the MOAC mode or an active fault (EMOAC-5000 only). <i>Note: An analog airflow output and an analog CO2 input are not available when ECO FAULT = ACT FB. The actuator feedback signal must be connected to the EMOAC controller and not the economizer controller for proper operation.</i>	
5	OAF AREA	}	Outdoor airflow measuring device free area, in sq ft [sq m]. Important: Area is required for operation. Leave null field (default) if area is not known during configuration. The device will prompt for area prior to operation.	
6	CO2 TYP	NONE	No CO2 sensor connected.	9
		ANLG	Analog CO2 sensor connected (EMOAC-5000 only). <i>Note: An analog CO2 input is not available when ECO FAULT = ON</i>	
		MS/TP	Approved MS/TP CO2 sensor connected (N1 DEVICES = SENS or BAS).	9

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7	CO2 SGNL	0-5V	0-5 VDC output CO2 sensor installed.	
		0-10V	0-10 VDC output CO2 sensor installed.	
		2-10V	2-10 VDC output CO2 sensor installed.	
		4-20mA	4-20mA (4-wire) output CO2 sensor installed. Jumper required on EMOAC PCB. <i>Note: Factory default output scaling is set to 0-2,000 ppm. The full scale reading of the CO2 sensor can be modified using advanced setup.</i>	
8	CO2 FS	2000	CO2 sensor full scale reading, 1,000 to 10,000 ppm.	
9	CNTR TYP	NONE	No occupancy counter connected.	11
		MS/TP	Approved MS/TP occupancy counter connected (N1 DEVICES = SENS or BAS).	
10	NUM CNTRS	1	Number of counters, 1 to 4. <i>Note: If more than one counter is used, the device instance number additional counters must be modified in each counter. If N1 DEV=SENS, set counter 2 DI=32, counter 3 DI=33 and counter 4 DI=34.</i>	
11	R1 ASGN	NONE	Relay R1 not assigned.	13
		ALRMS	R1 assigned to EMOAC notification alarms bound to R1.	13
		MODE	R1 assigned to the active control mode.	
12	R1 ACTMOD	MOAECO	R1 active during minimum and economizer modes.	
		MOA	R1 active during minimum outdoor air mode.	
		ECO	R1 active during economizer mode.	
13	ITEMS 15 to 27 are only visible if N1 DEVICES is equal to BAS.			
14	N1 BAUD	76800	N1 network baud rate of 76,800 bps.	
		38400	N1 network baud rate of 38,400 bps.	
		19200	N1 network baud rate of 19,200 bps.	
		9600	N1 network baud rate of 9,600 bps.	
15	N1 MAX MAST	7	N1 network max master, 0 to 127. <i>Note: Limiting MAX MAST to the actual number of devices on the network and sequentially addressing each device will limit network overhead and improve network efficiency. The default value for N1 MAX MAST assumes no building automation system is connected to the N1 MS/TP network.</i>	
16	N1 DEV MAC	1	The MAC address of this device on the N1 network, 0 to 127.	
17	DEV DI	1	The device instance number of this device on the N1 network, 0 to 4,194,302.	
18	ITEM 20 is only visible if CO2 TYP is equal to MS/TP.			
19	CO2 DI	21	The device instance number of the CO2 sensor on the N1 network, 0 to 4,194,302	
20	ITEM 22 is only visible if CNTR TYP is equal to MS/TP and NUM CNTRS is greater than or equal to 1.			
21	CNTR1 DI	31	The device instance number of counter 1 on the N1 network, 0 to 4,194,302.	
22	ITEM 24 is only visible if CNTR TYP is equal to MS/TP and NUM CNTRS is greater than or equal to 2.			
23	CNTR2 DI	32	The device instance number of counter 2 on the N1 network, 0 to 4,194,302.	
24	ITEM 26 is only visible if CNTR TYP is equal to MS/TP and NUM CNTRS is greater than or equal to 3.			
25	CNTR3 DI	33	The device instance number of counter 3 on the N1 network, 0 to 4,194,302.	
26	ITEM 28 is only visible if CNTR TYP is equal to MS/TP and NUM CNTRS is equal to 4.			
27	CNTR4 DI	34	The device instance number of counter 4 on the N1 network, 0 to 4,194,302.	
28	DONE	SAVE	Save changes and return to normal operation.	
		CANCEL	Do not save changes and return to normal operation.	
		RESET	Reset to factory default configuration and return to normal operation.	

EMOAC FIRMWARE CONFIGURATION

FACTORY DEFAULT FIRMWARE CONFIGURATION

Outdoor Air Control (OAC)	FLOW (modulating airflow setpoint outdoor airflow control when MOA mode is active)
OA Airflow Setpoint	0 cfm [lps] (simultaneously press ↑ or ↓ buttons during normal operation to modify)
Unoccupied Airflow Setpoint	0 cfm [lps]
Off-mode Operation (UN/OFF)	OFF (actuator output 0% when economizer controller is "off")
Economizer Controller Minimum Position	10%

CUSTOM FIRMWARE CONFIGURATION

Open by simultaneously pressing ↑↓ during normal operation

Use ↑↓ buttons to navigate up/down menu. Press {ENT} to modify (parameter will flash). Use ↑↓ buttons to modify, {ENT} to accept, {ESC} to keep previous.

Fixed parameters (parameters that cannot be changed) will indicate "PARAMETER FIXED"

If LOCK SECURITY<->NONE using the SETUP MENU pressing enter will indicate "CONFIG LOCKED" and only parameter viewing is allowed.

Navigate entire menu to step 39 to save settings. Press {ESC} twice at any time to exit without saving changes.

ITEM #	PARAMETER	VALUE	DESCRIPTION	SKIP TO
1	OAC	FLOW	Modulate to maintain a fixed, user defined, minimum airflow rate.	9
		CO2	Modulate to maintain a fixed, user defined, CO2 level.	10
		CO2/OAF	Modulate to maintain a calculated minimum airflow rate based on estimated population.	
		COUNT	Modulate to maintain a calculated minimum airflow rate based on measured population.	4
		FIXED	Maintain the fixed minimum position specified by MIN POS.	15
	PASS	Pass the economizer output signal to the actuator at all times (no control by EMOAC). <i>Note: CO2 and CO2/OAF will only be visible if a CO2 sensor was configured during hardware config. COUNT will only be visible if an occupancy counter was configured during hardware config.</i>	16	
2	OA CO2	400	Outdoor air CO2 level, 300 to 700 ppm. <i>Note: Outdoor air CO2 is typically assumed since CO2 sensor technology typically is not accurate in outdoor air applications. OA CO2 can be modified via BACnet if actual CO2 levels are monitored.</i>	
3	MET	1.2	Expected occupant metabolic equivalent based on activity, 0.7 to 10 MET. <i>Note: Sedentary adults have a average MET output of 1.2. Metabolic activity can range between 0.7 (very low activity such as sleeping) to over 10 (very high activity such as jumping rope) and varies with age and diet. Occupant activity significantly affects the relationship between ventilation and indoor CO2 levels.</i>	
4	RP	18 [3.4]	Ventilation zone required airflow rate, 0 to 50 cfm/person [0 to 10 lps/person]. <i>Note: Rp is generally determined using ASHRAE Standard 62.1. The default value is based on the equivalent ventilation rate for 1,000 ppm of sedentary adults and does not meet the requirements of the Standard.</i>	
5	RA	0	Ventilation zone required airflow rate, 0 to 1 cfm/sq ft [0 to 5 lps/sq m]. <i>Note: Ra is generally determined using ASHRAE Standard 62.1. The default value does not meet the requirements of the Standard.</i>	
6	AZ	0	Ventilation zone floor area, 0 to 99,999 sq ft [0 to 9,999 sq m]. <i>Note: Az must be entered if Ra is greater than 0.</i>	
7	EZ	1	Ventilation effectiveness, 0.1 to 1.5. <i>Note: Ez is generally determined using ASHRAE Standard 62.1. It should be used when occupancy counters are used or CO2 sensors are installed in the return air stream.</i>	
8	EVZ	1	Ventilation efficiency, 0.1 to 1. <i>Note: Using an estimated value for Evz can improve DCV performance on multi-zone systems.</i>	11
9	OA SET	0	Minimum outdoor airflow setpoint, 0 to 9,999 cfm [0 to 5,000 lps]. <i>Note: The minimum outdoor air setpoint can be modified at any time during normal operation by pressing the ↑ or ↓ buttons.</i>	13

EMOAC FIRMWARE CONFIGURATION

10	CO2 SET	1000	CO2 setpoint, 500 to 2,000 ppm. <i>Note: The CO2 setpoint can be modified at any time during normal operation by pressing the ↑ or ↓ buttons.</i>	
11	DCV MIN	0	Lower ventilation rate limit during DCV, 0 to DCV MAX cfm [lps] <i>Note: DCV MIN limits the minimum ventilation rate setpoint rather than fixed damper position. Set to equal the minimum required ventilation rate or local exhaust rate, whichever is greater.</i>	
12	DCV MAX	NONE 9999	Upper ventilation rate limit during DCV, NONE or DCV MIN to 9,999 cfm [5,000 lps] <i>Note: DCV MAX limits the maximum ventilation rate setpoint rather than fixed damper position. Set to equal the ventilation required for the maximum expected population. This limit may result in higher than expected CO2 levels and activate the CO2 alarm if the CO2-DCV method uncertainly would result in over-ventilation at high occupancy levels. Setting DCV MAX to NONE will not limit ventilation and maintain the CO2 level specified.</i>	
13	UNOC SET	0	Unoccupied mode airflow setpoint, 0 to 9,999 cfm [0 to 5,000 lps]. <i>Note: The unoccupied airflow setpoint will be maintained whenever the economizer controller is in off mode and UN/OFF is set to UNOC in step 14 or via BACnet.</i>	
14	UN/OFF	OFF UNOC	The actuator output signal will be set to 0% when the economizer controller is "off". Modulate to maintain UNOC SET when the economizer controller is "off".	
15	MIN POS	10%	Minimum fixed damper position, 0% to 100% of full stroke. <i>Note: MIN POS must match the economizer controller minimum position output for proper operation. Set the economizer controller up for fixed airflow control (no DCV) and a one speed supply fan. MIN POS is also used as the default damper position during active fault conditions when UNOC or MOA modes are active.</i> <i>Tip: Find MIN POS for a specific airflow rate using the FIND MIN POS tool or read the minimum position output of the economizer controller using the READ MIN POS tool. See "Advanced Setup, Tools and Diagnostics" for more information.</i>	
16	ITEMS 17 to 21 are only visible if OAC is set to FLOW, CO2, CO2/OAF or COUNT.			
17	UNOC ALARM	OFF MAN AUTO	UNOC mode airflow notification alarm disabled. UNOC mode airflow notification alarm enabled. Manual reset required. UNOC mode airflow notification alarm enabled. Automatic reset with return to in tolerance.	23
18	R1 BIND	NO YES	Do not bind active alarm to relay, R1. Bind active alarm to relay, R1 (requires R1 ASGN=ALRMS during hardware config.).	
19	TYPE	LO HI HI/LO	Low airflow alarm. Active below SETPNT - TOL after specified DELAY. High airflow alarm. Active above SETPNT + TOL after specified DELAY. High/Low airflow alarm. Active above/below SETPNT ± TOL after specified DELAY.	
20	SETPNT	{}	Alarm setpoint, in cfm [lps]. <i>Note: The default {} value for SETPNT is UNOC SET.</i>	
21	TOL	20%	Alarm tolerance, ½ OAF PID deadband tolerance to 50%	
22	DELAY	1	Delay, 0 to 30 minutes, after alarm is "outside" of tolerance before alarm is active.	
23	ITEMS 24 to 29 are NOT visible if OAC is set to CO2 (OA airflow alarm is not available when OAC is set to CO2).			
24	OA ALARM	OFF MAN AUTO	MOA mode airflow notification alarm disabled. MOA mode airflow notification alarm enabled. Manual reset required. MOA mode airflow notification alarm enabled. Automatic reset with return to in tolerance.	30
25	R1 BIND	NO YES	Do not bind active alarm to relay, R1. Bind active alarm to relay, R1 (requires R1 ASGN=ALRMS during hardware config.).	
26	TYPE	LO HI HI/LO	Low airflow alarm. Active below SETPNT - TOL after specified DELAY. High airflow alarm. Active above SETPNT + TOL after specified DELAY. High/Low airflow alarm. Active above/below SETPNT ± TOL after specified DELAY.	
27	SETPNT	{}	Alarm setpoint, in cfm [lps]. <i>Note: The default {} value for SETPNT is MOA SET when MOAC is set to FLOW, the calculated active airflow setpoint when MOAC is set to OAF/CO2 or COUNT, or 0 when MOAC is set to FIXED or PASS.</i>	
28	TOL	15%	Alarm tolerance, ½ OAF PID deadband tolerance to 50%	
29	DELAY	1	Delay, 0 to 30 minutes, after alarm is "outside" of tolerance before alarm is active.	

EMOAC FIRMWARE CONFIGURATION

30	ITEM 31 to 36 are only visible if CO2 TYP is equal to ANLG or MS/TP (i.e. a CO2 sensor is installed).			
31	CO2 ALARM	<p style="text-align: right; color: red;">OFF</p> <p style="text-align: right;">MAN</p> <p style="text-align: right;">AUTO</p>	<p>All mode CO2 notification alarm disabled.</p> <p>All mode CO2 notification alarm enabled. Manual reset required.</p> <p>All mode CO2 notification alarm enabled. Automatic reset with return to in tolerance.</p>	36
32	R1 BIND	<p style="text-align: right; color: red;">NO</p> <p style="text-align: right;">YES</p>	<p>Do not bind active alarm to relay, R1.</p> <p>Bind active alarm to relay, R1 (requires R1 ASGN=ALRMS during hardware config.).</p>	
33	TYPE	HI	High CO2 alarm. Active below SETPNT - TOL after specified DELAY.	
34	SETPNT	{ }	<p>Alarm setpoint, in ppm.</p> <p><i>Note: The default { } value for SETPNT is CO2 SET when MOAC is set to CO2, or 1,000 when MOAC is set to FLOW, CO2/OAF, COUNT, FIXED or PASS.</i></p> <p>Important: 1,000 ppm may be exceeded whenever 18 cfm [3.4 lps] or less is provided to sedentary adults even though the ventilation rate provided may meet the requirement of ASHRAE standard 62.1.</p>	
35	TOL	15%	Alarm tolerance, ½ CO2 PID deadband tolerance to 50%	
36	DELAY	10	Delay, 0 to 30 minutes, after alarm is "outside" of tolerance before alarm is active.	
37	TRBL ALARM	<p style="text-align: right;">OFF</p> <p style="text-align: right;">MAN</p> <p style="text-align: right; color: red;">AUTO</p>	<p>System status notification alarm disabled.</p> <p>System status notification alarm enabled. Manual reset required.</p> <p>System status notification alarm enabled. Automatic reset with return to in tolerance.</p>	39
38	R1 BIND	<p style="text-align: right; color: red;">NO</p> <p style="text-align: right;">YES</p>	<p>Do not bind active alarm to relay, R1.</p> <p>Bind active alarm to relay, R1 (requires R1 ASGN=ALRMS during hardware config.).</p>	
39	DONE	<p style="text-align: right; color: red;">SAVE</p> <p style="text-align: right;">CANCEL</p> <p style="text-align: right;">RESET</p>	<p>Save changes and return to normal operation.</p> <p>Do not save changes and return to normal operation.</p> <p>Reset to factory default configuration and return to normal operation.</p>	

EMOAC CONTROLLER - ADVANCED SETUP

Open by simultaneously pressing {ESC} ↑ during normal operation. Follow navigation rules below.

↑ or ↓ Move up/dwn	↑ or ↓ Move up/dwn	↑ or ↓ Move up/dwn	↑ or ↓ Modify (Parameter Flashes)	Range/Units (if applicable)		Notes/Comments
{ENT} Move right	{ENT} Move right	{ENT} Move right	{ENT} Accept, move left	IP Min/Max	SI Min/Max	
{ESC} Exit menu	{ESC} Move left	{ESC} Move left	{ESC} Cancel, move left			
ADVANCED ↓	SYSTEM ↓	U/M=IP ↓	U/M=IP ↓			Imperial/US customary units (ft, fpm, cfm, °F) International system of units (m, m/s, lps, °C)
			U/M=SI ↑			
		AF METH=ACT ↑↓	AF METH=ACT ↓			Actual air velocity or volumetric flow Standard (mass) air velocity or volumetric flow
			AF METH=STD ↑			
		ALT=0 ↑	ALT=0 ↑↓	-200/20000 ft	-60/6000 m	Altitude
	ECONOMIZER ↑↓	ECO OFF=1 ↓	ECO OFF=1 ↑↓	0/10 %		Economizer controller off-threshold
		MIN POS TOL=10 ↑↓	MIN POS TOL=10 ↑↓	0/100 %		MIN POS tolerance (±)
		STROKE=100 ↑	STROKE=100 ↓	25/100 %		Damper stroke at full open position
	OAF SENSOR ↑↓	LCD INT=300 ↓	LCD INT=300 ↑↓	1/3000		Integration buffer size for airflow on LCD
		GAIN=1 ↑↓	GAIN=1 ↑↓			Gain adjustment for OAF flow
		OFFSET=0 ↑↓	OFFSET=0 ↑↓	±20000 cfm	±10000lps	Offset adjustment for OAF flow
		ADJUST=OFF ↑↓	ADJUST=OFF ↓			Disable offset/gain adjustments Enable offset/gain adjustments
			ADJUST=ON ↑			
		EXT CAB=0 ↑↓	EXT CAB=0 ↑	0/40 ft	0/12.2 m	Extension cable added to original flow probes
		RESET PROBES ↑	RESET=N ↓			Do not clear probe cal data Clear probe cal data and read/re-write one wire memory data
			RESET=Y ↑			

EMOAC CONTROLLER - ADVANCED SETUP

	OAF PID	↑↓	DEADBAND=10	↓	DEADBAND=10	↑↓	10/50%	Deadband (centered)
			RESPONSE=5	↑↓	RESPONSE=5	↑↓	1/10 or CUS	PID response time (recommended)
RESPONSE=CUS			P=10	↑↓	P=10	↑↓	1 to 100%	Proportional term
			I=5	↑↓	I=5	↑↓	1 to 100%	Integral term
			D=25	↑↓	D=25	↑↓	1 to 100%	Derivative term
			FLT ACT=5	↑↓	FLT ACT=5	↑↓	1/30 minutes	Delay before "far out" goes to active "fault"
			FLT DEACT=1	↑↓	FLT DEACT=1	↓	1/30 minutes	Delay after return to "outside" or "normal" to deactivate "fault"
			RETRY DEL=1	↑↓	RETRY DEL=1	↓	1/30 minutes	Delay before clearing "fault" to "normal" for control retry
			RETRIES=MAX	↑	RETRIES=MAX	↑	0/999 or MAX (no limit)	Number of retries allowed for control retry
CO2 TYPE<->NONE	CO2 PID	↑	DEADBAND=10	↓	DEADBAND=10	↑↓	10/50%	Deadband (centered)
			RESPONSE=5	↑↓	RESPONSE=5	↑↓	1/10 or CUS	PID response time (recommended)
RESPONSE=CUS			P=10	↑↓	P=10	↑↓	1 to 100%	Proportional term
			I=5	↑↓	I=5	↑↓	1 to 100%	Integral term
			D=25	↑↓	D=25	↑↓	1 to 100%	Derivative term
			FLT ACT=5	↑↓	FLT ACT=5	↑↓	1/30 minutes	Delay before "far out" goes to active "fault"
			FLT DEACT=1	↑↓	FLT DEACT=1	↓	1/30 minutes	Delay after return to "outside" or "normal" to deactivate "fault"
			RETRY DEL=1	↑↓	RETRY DEL=1	↓	1/30 minutes	Delay before clearing "fault" to "normal" for control retry
			RETRIES=MAX	↑	RETRIES=MAX	↑	0/999 or MAX (no limit)	Number of retries allowed for control retry

EMOAC CONTROLLER - TOOLS

Open by simultaneously pressing {ESC} ↑ during normal operation. Follow navigation rules below.

↑ or ↓ Move up/dwn
 {ENT} Move right
 {ESC} Exit menu

↑ or ↓ Move up/dwn
 {ENT} Move right
 {ESC} Move left

↑ or ↓ Move up/dwn
 {ENT} Run tool
 {ESC} Cancel, move left

Notes/Comments

ADVANCED ↓

TOOLS ↑↓

TEST ECON ↓

{RUN TOOL}

Set damper between 0 and 100% open and display airflow

FIND MIN POS ↑↓

{RUN TOOL}

Enter desired minimum nominal airflow rate to find MIN POS. Write MIN POS to memory.

READ MIN POS ↑↓

{RUN TOOL}

Read AO1 when economizer controller output is set to MIN POS. Write measured MIN POS to memory.

ECO FAULT=ON

FIND STROKE ↑↓

{RUN TOOL}

Set damper to 100% open. Read AI2 and calculate STROKE. Write STROKE to memory.

ADJUST OAF ↑

{RUN TOOL}

Run outdoor air field adjust wizard and write GAIN and OFFSET to memory.

EMOAC CONTROLLER - DIAGNOSTICS

Open by simultaneously pressing {ESC} ↑ during normal operation. Follow navigation rules below.

↑ or ↓ Move up/dwn
{ENT} Move right
{ESC} Exit menu

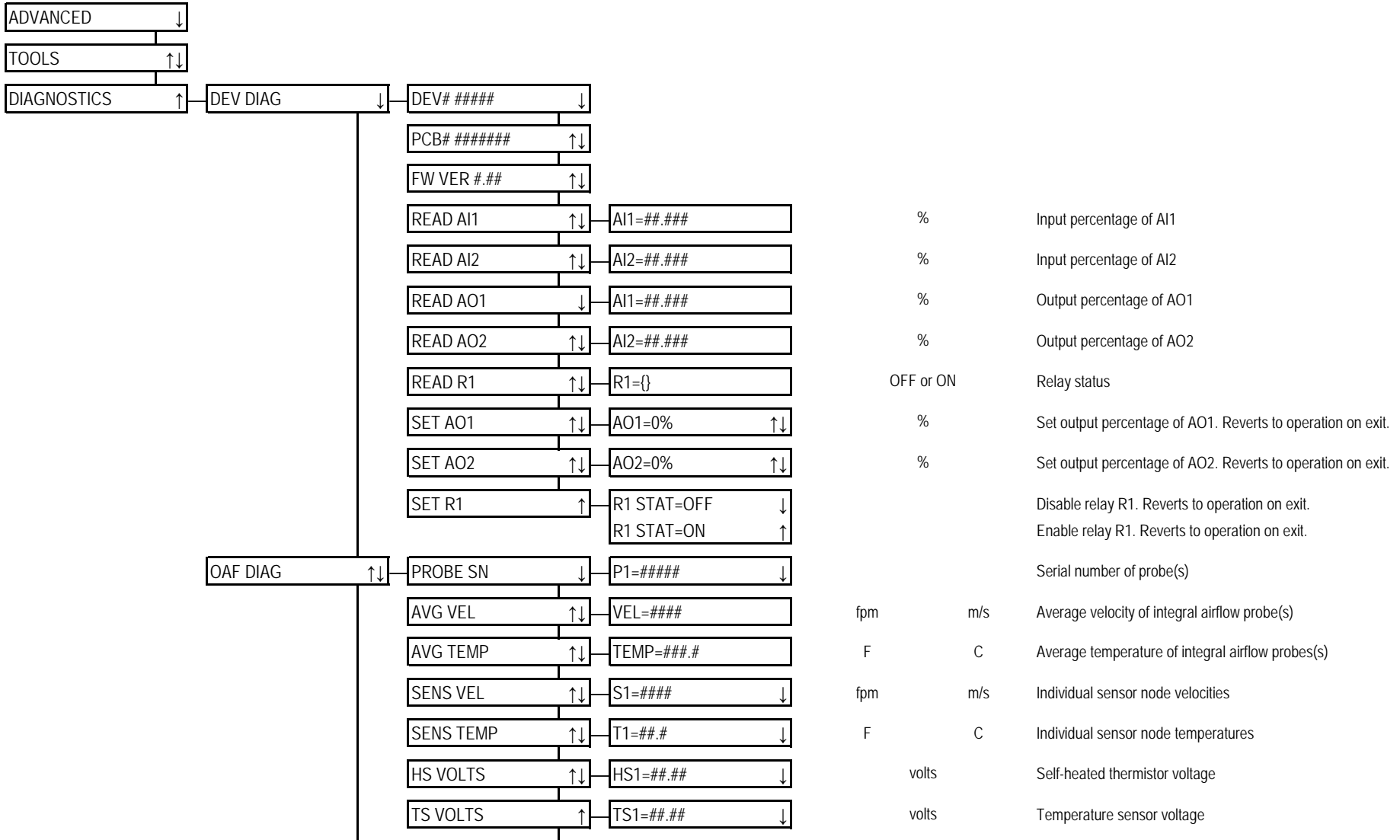
↑ or ↓ Move up/dwn
{ENT} Move right
{ESC} Move left

↑ or ↓ Move up/dwn
{ENT} Move right
{ESC} Move left

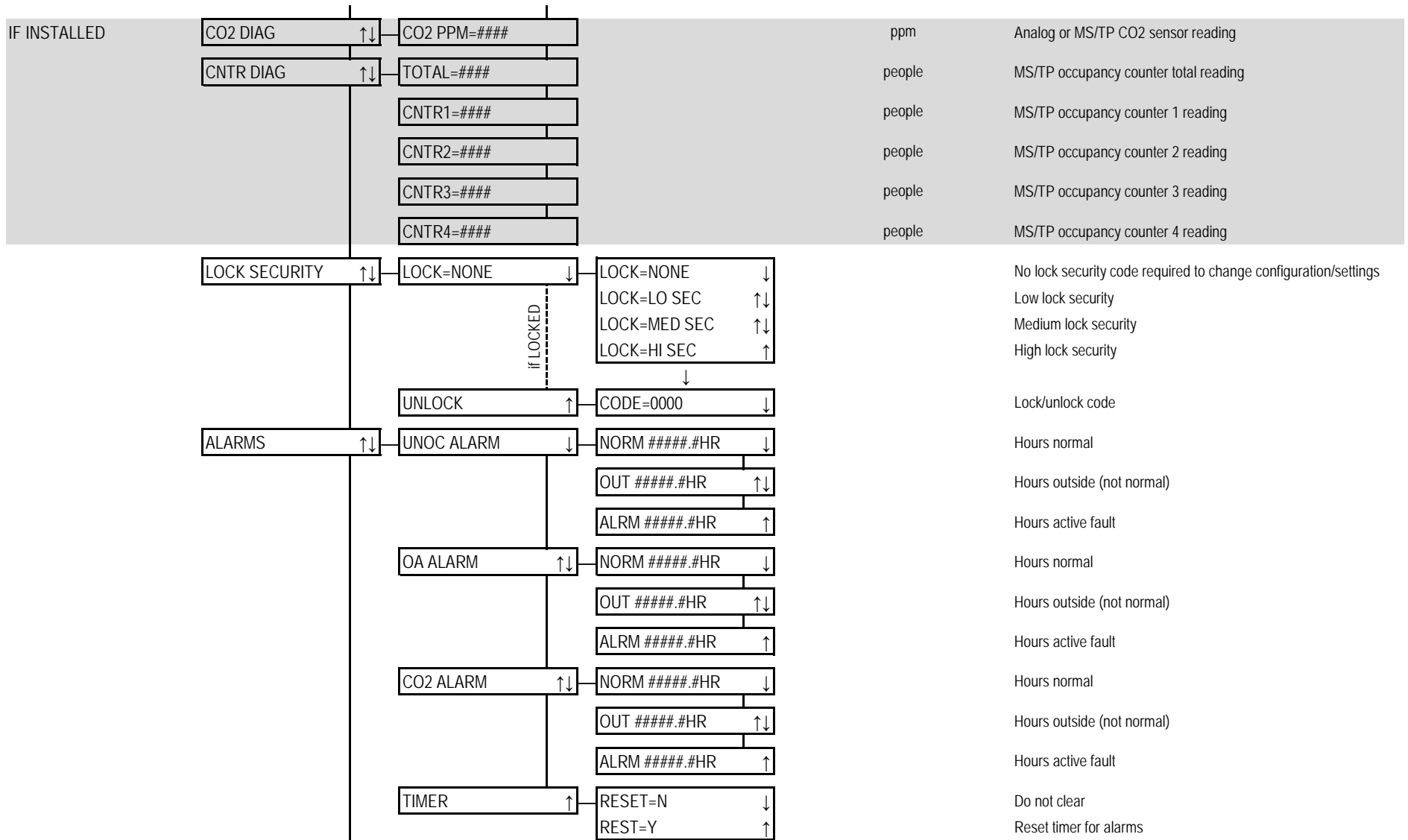
↑ or ↓ Modify/Scroll, Parameter Flashes
{ENT} Accept/Hold Last
{ESC} Cancel, move left

Range/Units (if applicable)
IP Min/Max SI Min/Max

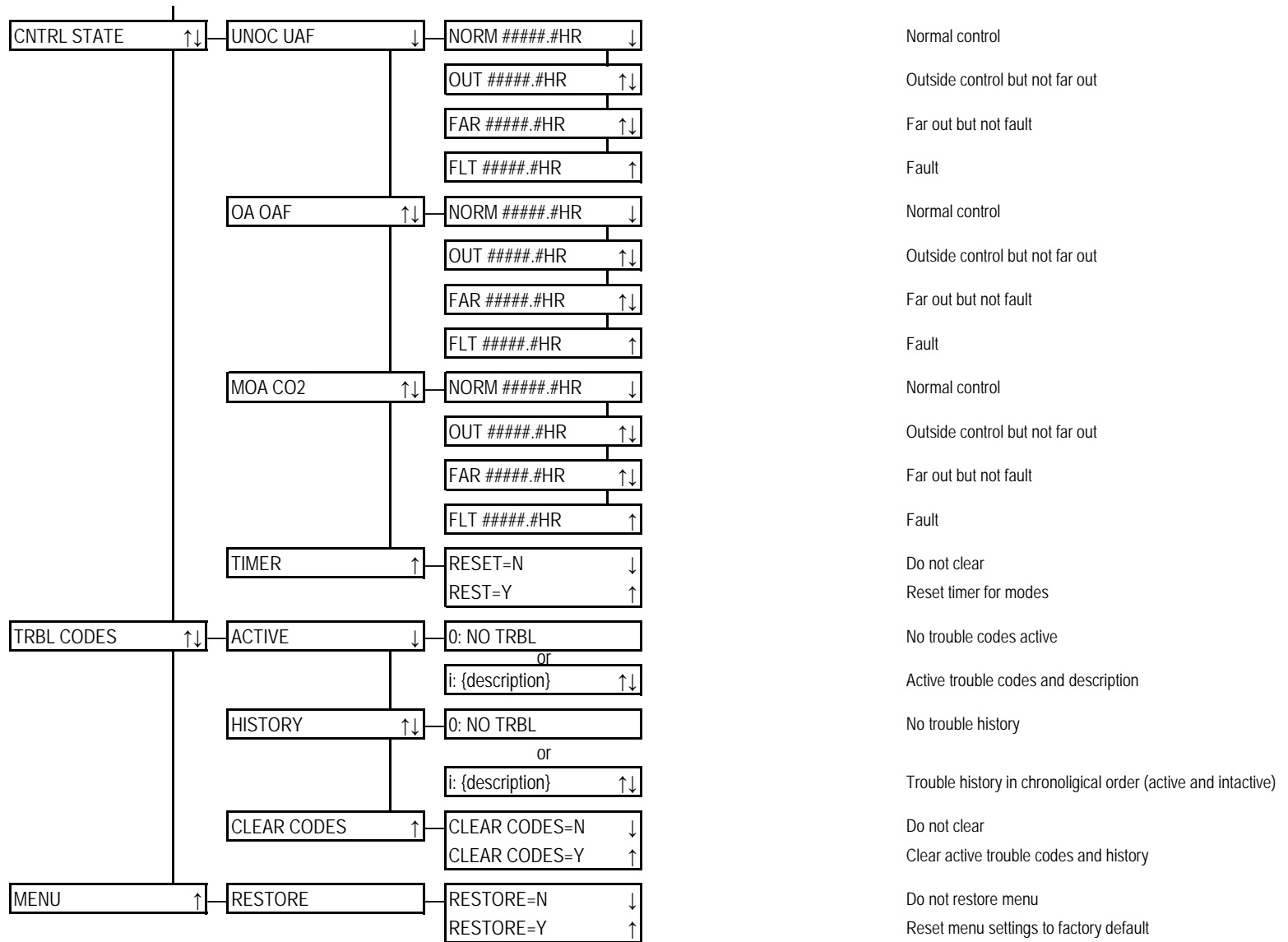
Notes/Comments



EMOAC CONTROLLER - DIAGNOSTICS



EMOAC CONTROLLER - DIAGNOSTICS



DISPLAY FUNCTION

POWER UP DISPLAY

Automatic after power up. {ESC} changes to normal or after 30 second timeout.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	E	M	O	A	C	-	5	0	0	0							Display Series and Board Model
	F	I	R	M	W	R	E		#	#	.	#	#				Display Firmware Version
	O	A	F		P	1								#	#	#	P1 Presence: YES, NO
	O	A	F		P	2								#	#	#	P1 Presence: YES, NO
	E	C	O		F	A	U	L	T					#	#	#	ECO Fault: OFF, ON
	C	O	2		T	Y	P	E			#	#	#	#	#		CO2 Type: NONE, ANLG, MS/TP
	N	1		D	E	V	I	C	E	S				#	#	#	N1 DEVICES (N1 DEV): NONE, SENS, BAS
Visible if N1 DEV <> NONE	C	O	2		M	S	/	T	P					#	#	#	NONE, ERR or Last 4 digits of DI*
	C	N	T	R	1		M	S	/	T	P			#	#	#	NONE, ERR or Last 4 digits of DI*
	C	N	T	R	2		M	S	/	T	P			#	#	#	NONE, ERR or Last 4 digits of DI*
	C	N	T	R	3		M	S	/	T	P			#	#	#	NONE, ERR or Last 4 digits of DI*
	C	N	T	R	4		M	S	/	T	P			#	#	#	NONE, ERR or Last 4 digits of DI*
	R	1		A	S	G	N							#	#	#	R1 Assignment: ALRMS or MODE

* Notes:

NONE - Sensor not configured

ERR - Configured sensor not found when N1 DEVICES=BAS (Operate in PASS MODE if MOAC = CO2 or OAF/CO2)

ERR - Configured sensor not found after discovery delay when N1 DEVICES=SENS (Operate in PASS MODE if MOAC = CO2 or OAF/CO2)

Last 4 digits of DI - Configured sensor found

DISPLAY FUNCTION

SETPOINT DISPLAY (OAC=FLOW)

Press ↑ or ↓ arrow to enter setpoint display mode. Use ↑ or ↓ to change setpoint. Exit setpoint mode after 15 seconds.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
S	E	T	P	N	T		#	#	#	#	C	F	M	↑	↓

Display Active Setpoint

NORMAL OPERATING DISPLAY (OAC=FLOW, CO2/OAF or COUNT)

↑ or ↓ arrows changes setpoint.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
#	#	#	#	C	F	M						X	X	X	X
#	#	#	#	C	F	M	+					X	X	X	X
#	#	#	#	C	F	M	-					X	X	X	X
#	#	#	#	C	F	M	+	+				X	X	X	X
#	#	#	#	C	F	M	-	-				X	X	X	X
#	#	#	#	C	F	M	+	+				X	X	X	X
#	#	#	#	C	F	M	-	-				X	X	X	X
#	#	#	#	C	F	M	??		T			X	X	X	X
#	#	#	#	C	F	M	??		U			X	X	X	X
#	#	#	#	C	F	M	??		M			X	X	X	X
#	#	#	#	C	F	M	??		C			X	X	X	X

Display Airflow (Control state=Normal) and Mode

Display Airflow + (Control state=Outside High) and Mode

Display Airflow - (Control state=Outside Low) and Mode

Display Airflow ++ (Control state=Far Out High) and Mode

Display Airflow -- (Control state=Far Out Low) and Mode

Display Airflow ++ flashes (Control state=Active Control Fault High) and Mode

Display Airflow -- flashes (Control state=Active Control Fault Low) and Mode

Display Airflow, {?? = control state}, TRBL Alarm Active and Mode

Display Airflow, {?? = control state}, UNOC Alarm Active and Mode

Display Airflow, {?? = control state}, MOA Alarm Active and Mode

Display Airflow, {?? = control state}, CO2 Alarm Active and Mode

Note: Multiple active alarms will cycle on display. Escape clears manual active alarms.

DISPLAY FUNCTION

SETPOINT DISPLAY (OAC=CO2)

Press ↑ or ↓ arrow to enter setpoint display mode. Use ↑ or ↓ to change setpoint. Exit setpoint mode after 15 seconds.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
S	E	T	P	N	T		#	#	#	#	P	P	M	↑	↓

Display Active Setpoint

NORMAL OPERATING DISPLAY (OAC=CO2)

↑ or ↓ arrows changes setpoint.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
#	#	#	#	P	P	M						X	X	X	X

Display CO2 (Control state=Normal) and Mode

#	#	#	#	P	P	M	+					X	X	X	X
---	---	---	---	---	---	---	---	--	--	--	--	---	---	---	---

Display CO2 + (Control state=Outside High) and Mode

#	#	#	#	P	P	M	-					X	X	X	X
---	---	---	---	---	---	---	---	--	--	--	--	---	---	---	---

Display CO2 - (Control state=Outside Low) and Mode

#	#	#	#	P	P	M	+	+				X	X	X	X
---	---	---	---	---	---	---	---	---	--	--	--	---	---	---	---

Display CO2 ++ (Control state=Far Out High) and Mode

#	#	#	#	P	P	M	-	-				X	X	X	X
---	---	---	---	---	---	---	---	---	--	--	--	---	---	---	---

Display CO2 -- (Control state=Far Out Low) and Mode

#	#	#	#	P	P	M	+	+				X	X	X	X
---	---	---	---	---	---	---	---	---	--	--	--	---	---	---	---

Display CO2 ++ flashes (Control state=Active Control Fault High) and Mode

#	#	#	#	P	P	M	-	-				X	X	X	X
---	---	---	---	---	---	---	---	---	--	--	--	---	---	---	---

Display CO2 -- flashes (Control state=Active Control Fault Low) and Mode

#	#	#	#	P	P	M	??		T			X	X	X	X
---	---	---	---	---	---	---	----	--	---	--	--	---	---	---	---

Display CO2, {?? = control state}, TRBL Alarm Active and Mode

#	#	#	#	P	P	M	??		U			X	X	X	X
---	---	---	---	---	---	---	----	--	---	--	--	---	---	---	---

Display CO2, {?? = control state}, UNOC Alarm Active and Mode

#	#	#	#	P	P	M	??		C			X	X	X	X
---	---	---	---	---	---	---	----	--	---	--	--	---	---	---	---

Display CO2, {?? = control state}, CO2 Alarm Active and Mode

Note: Multiple active alarms will cycle on display. Escape clears manual active alarms.

DISPLAY FUNCTION

NORMAL OPERATING DISPLAY (OAC=FIXED or PASS)

MOAC=FIXED: Setpoint changed in SETUP CONFIG (MIN POS).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

#	#	#	#	C	F	M							X	X	X	X
---	---	---	---	---	---	---	--	--	--	--	--	--	---	---	---	---

Display airflow and Mode

#	#	#	#	C	F	M				T			X	X	X	X
---	---	---	---	---	---	---	--	--	--	---	--	--	---	---	---	---

Display Airflow, TRBL Alarm Active and Mode

#	#	#	#	C	F	M				M			X	X	X	X
---	---	---	---	---	---	---	--	--	--	---	--	--	---	---	---	---

Display Airflow, MOA Alarm Active and Mode

#	#	#	#	C	F	M				C			X	X	X	X
---	---	---	---	---	---	---	--	--	--	---	--	--	---	---	---	---

Display Airflow, CO2 Alarm Active and Mode

Note: Multiple active alarms will cycle on display. Escape clears manual active alarms.

DISPLAY FUNCTION

DETAIL DISPLAY

Press {ENT} to show itemized, {ESC} from itemized returns to normal or after 60 second timeout.
 Display will step through the following items. Some items are OAC dependent.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
M	O	D	E									X	X	X	X	
O	A	C								X	X	X	X	X	X	
D	M	P	R									#	#	#	%	
S	E	T	P	N	T							#	#	#	%	
S	E	T	P	N	T					#	#	#	#	C	F	M
O	A	F								#	#	#	#	C	F	M
S	E	T	P	N	T					#	#	#	#	P	P	M
C	O	2								#	#	#	#	P	P	M
P	O	P		E	S	T						#	#	#	#	
C	O	U	N	T	E	R						#	#	#	#	

Active Mode, OFF, UNOC, MOA, ECON, FRZE

OAC method

Current Damper Position

Setpoint if OAC=FIXED

Setpoint if OAC=FLOW, CO2/OAF, or COUNT

Measured airflow

Setpoint if OAC=CO2

Display measured CO2 level (if CO installed)

Display calculated occupancy using CO2/OAF (if CO2 installed)

Display counter occupancy (if counter installed)