HMI-EZS

REMOTE MONITORING & OVERRIDE CONTROL PANEL FOR ENDEAVOUR TEMPERATURE CONTROLLERS

7" PANEL MOUNT HMI TOUCH SCREEN CONTROL PANEL
COMPATIBLE WITH HEVAC "ENDEAVOUR" TEMPERATURE CONTROLLERS

Features

- CONTROL & MONITOR UP TO 32 ZONE CONTROLLERS
- ZONE AUTO/OFF/ON T/SW. OVERRIDE CONTROL.
- BRIGHT COLOURED LED DISPLAY.
- AUTO ILLUMINATION DIMMING FOR LONG LIFE DISPLAY.
- STANDARD 2 WIRE & SHIELD MODBUS CONNECTION.
- TEMPERATURE, CO2 & MODE STATUS FOR EACH ZONE.
- AUTO FULL BRIGHTNESS ON ANY A/C FAULT.
- ZONE & PANEL INDENTIFIERS PROGRAMMABLE
- COMMON MASTER SYSTEM TIME SWITCH CAPABILITY

The Hevac HMI-EZS is intended for use in conjunction with Hevac model "ENDEAVOUR" temperature controllers, as a central master status & control station. The HMI panel allows central control of up to 32 (zone) controllers, read & display the outside air temperature and each controllers operating mode and zone temperatures (& CO2 if connected). The panel allows individual controller Auto/Off/On/AHR **Time Switch Override** & setting the zone **Temperature Set Points**, or the HMI can be set as a **master time switch for centralised time switch control**. Commissioning is extremely simple with setup screens allowing naming of the system, zones, time switch setting etc. Two selectable operating (running) type screens are available ..a **master summary** screen showing basic information for all zones on one easy to read colour coded screen or to display selectable **individual zone screens** for each connected controller showing detailed zone information & control override options. The master summary screen colour code is designed for quick visual checking of the current operating mode of each connected zone controller **-:**
A/C Auto (T/Sw) off **"A-OFF" = Grey**, A/C HMI manual forced off **"M-OFF" = Black**, **"RCYC" (fan only) = Green**, **"HEAT"on = Orange**, **"Econ"** {economy cycle damper system open in F/A mode (if fitted) } **= pale blue**, **"COOL"on = blue** and a A/C unit in **"Fault" mode = red.** Note the HMI has an auto dimming routine to preserve screen life.

Technical Data

Electrical Specifications

|	
Power supply	12 ~ 24 Volts DC +/- 10% 150mA@24vDC
Display	Auto dimming Coloured LED 7" Touch Screen
Power supply Connections	2 terminals +V & 0V
Communication RS484	2 terminals A & B (use 2 core RS485 doubled shielded cable.
Battery backed time switch (estimated life 20 years)	

Environmental Conditions

Operation	Ambient Temperature	0...40oC
	Humidity	< 85 % RH (NonCondensing)
Storage and Transport	Ambient Temperature	-5...60oC
	Humidity	< 90 % RH (Non Condensing)
Weight	Including Packaging	370 grams

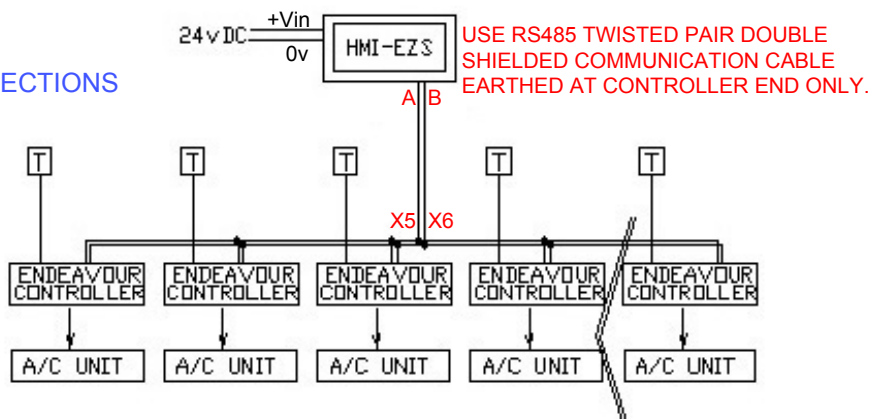**LED Display Life**   Expected ~ Full Brightness ~ 5 years / > 50% ~ 10 years

Housing		
	Bezel Colour	Light Grey
	Material	3D PRINTED POLYCARB.
	UV Stabilised	YES
	Product Size	H 130mm x W 205mm x D 25mm
	Panel Cutout	H 116mm x W 190mm
	Mounting Method	4 x Panel Clamping bolts
	Max. Panel Thickness	7mm

NOTE : WALL MOUNT BEZEL AVAILABLE

FRONT VIEW

REAR VIEW

connection terminals
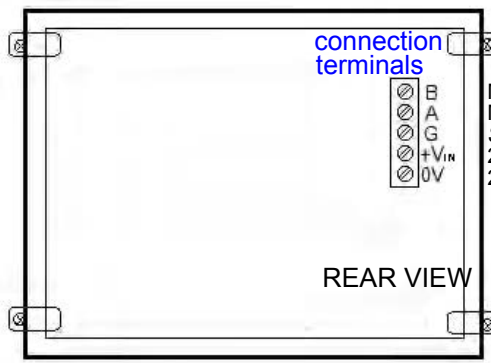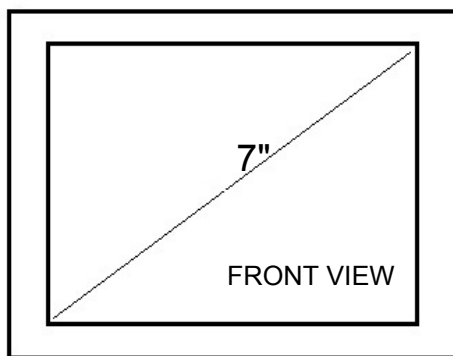
B MODBUS "B" CONNECTION
A MODBUS "A" CONNECTION
G SHIELD - LEAVE OPEN THIS END
+Vin 24V+ DC POWER CONNECTION
0V 24V - DC POWER CONNECTION

panel clamping bolts

TYPICAL CONNECTIONS

24vDC +Vin / 0v HMI-EZS

USE RS485 TWISTED PAIR DOUBLE SHIELDED COMMUNICATION CABLE EARTHED AT CONTROLLER END ONLY.

A B

X5 X6

ENDEAVOUR CONTROLLER   ENDEAVOUR CONTROLLER   ENDEAVOUR CONTROLLER   ENDEAVOUR CONTROLLER   ENDEAVOUR CONTROLLER

A/C UNIT   A/C UNIT   A/C UNIT   A/C UNIT   A/C UNIT

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COMMISSIONING HMI TO SUIT SYSTEM

With <u>DC</u> power supplied to the HMI (12 ~24 DC) the display will show the main operating screen with the existing number of zone summary boxes & a default heading title displayed. To access the commissioning screens press and hold a point in the middle top of the screen for approximately 5 seconds until a beep is heard, the display will jump to the main (commissioning) menu screen.

RED = FAULT
GREEN = RECYCLE (SYSTEM IDLE)
LIGHT BLUE = ECONOMY CYCLE
BLACK = MANUAL OFF
GREY = AUTO (T/SW.) OFF
BLUE = COOLING ON
ORANGE = HEATING ON
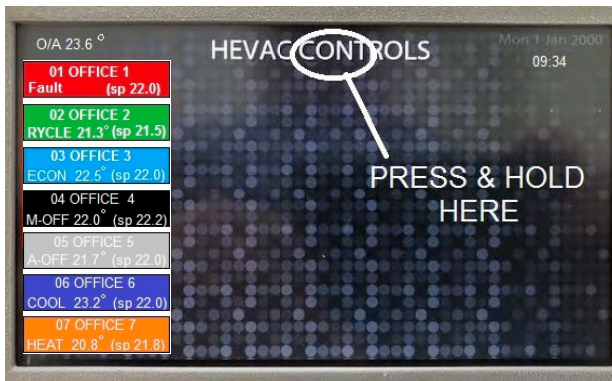
DEFAULT RUNNING DISPLAY SCREEN
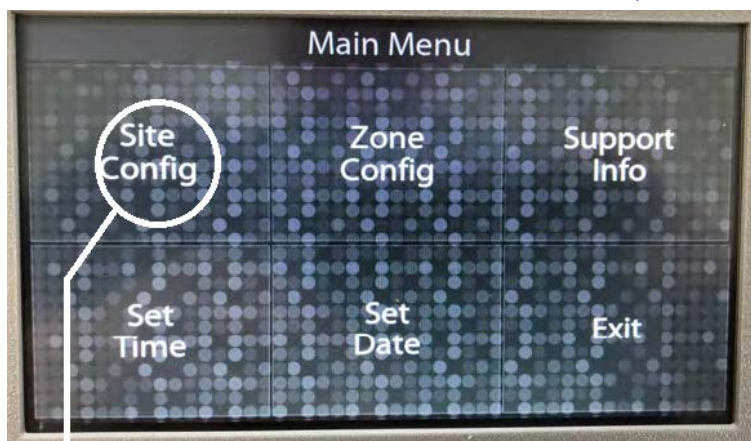
MAIN MENU (COMMISSIONING) SCREEN

Press the "<u>**Site Config**</u>" (virtual) button to display a menu to configure the following :

1.) The title message of this system (default is HEVAC CONTROLS)
2.) The number of connected Endeavour controllers (default is 5)
3.) Access the optional Master Time Switch to set start /stop times of connected controllers
4.) Access the optional Master Time Switch Holiday OFF override dates editor.
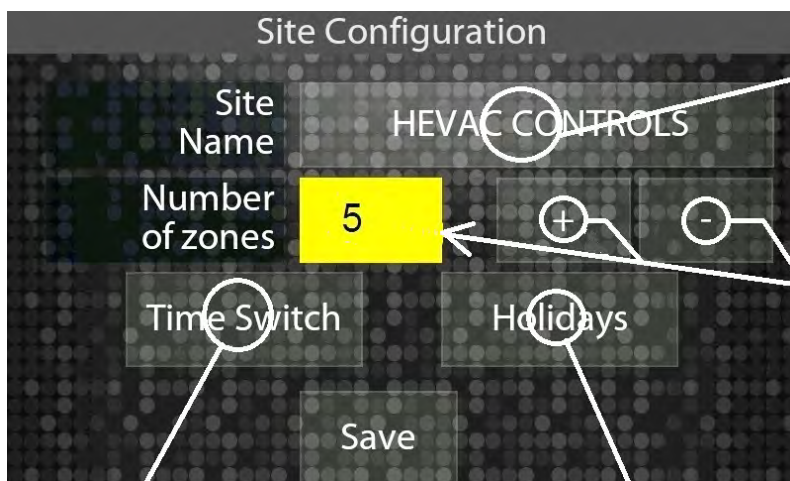
Press to change title

Press + or - to set number of connected controllers

Press to program HMI master time switch on/off control of connected controllers

Press to set holiday OFF override dates

1.) To change the HMI's main system identifier message from the existing to some other message, Press the screen area within the existing title (ie: HEVAC CONTROLS) which will bring up a standard industry type editing screen allowing the use of upper or lower case letters, numbers & characters. Use the backspace key to 1st remove the existing message and then type in a new title ie "AC MASTER CONTROL"

2.) To set the number of connected controllers use the + / - virtual buttons.

3.) The HMI-EZS has a powerful very flexible optional use event based Time Switch, programmed in a similar method as the time switch in the Endeavour controllers but with the additional feature that different controllers can be made to operate due to selectable time & day switching events that are programmed as either ON or OFF switching events.

TIME SWITCH EVENT ENABLE SELECT SCREEN

PRESS HERE TO MOVE TO NEXT TIME SWITCH EVENT PROGRAMMING SCREEN

Press the screen area that displays "**UNUSED**" and the display will change to an "Enabled" Time Switch event editing screen. Note that Time Switch EVENTS can be set as a switching **ON** event **or** a switching **OFF** event.

↓
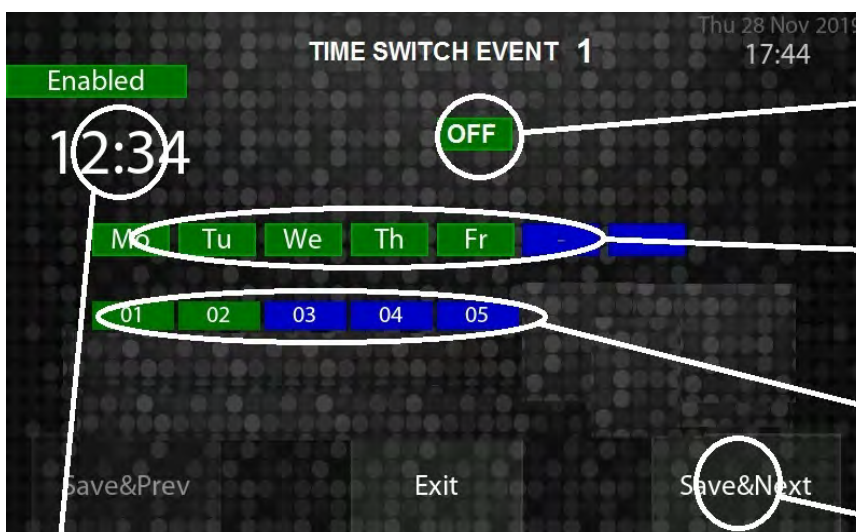
PRESS HERE TO SET EVENT AS A SWITCHING ON EVENT OR A SWITCHING OFF EVENT

SELECT WHICH DAY(s) THAT THIS EVENT INTERLOCKS WITH. GREEN = EVENT INTERLOCKED

SELECT WHICH CONNECTED CONTROLLERS OBEY THIS EVENT

PRESS HERE TO SAVE & JUMP TO NEXT EVENT EDITING SCREEN

PRESS HERE TO SET EVENT SWITCHING TIME

Press the "Save & Next" button to jump to the next programmable Time Switch Event editing screen which would normally be used to set a matching OFF event with times & days as per Time Switch Event 1 ON event, **but** the on/off events can actually be programmed in any sequence of any combination of days, times & selected controllers, ie all ON events for selected controllers & selected days could be programmed by separate time switch events programmed as ON events followed by events programmed as OFF events - which makes individual time switch control of the connected controllers very flexible and powerful with no issue switching past midnight. ie all controllers could be programmed to turn on Monday at 08:00 as EVENT 1 & remain on until EVENT 2 set to turn all controllers OFF at Friday 18:00.

In summary : at an event screen set **: the event switching time**
: set the event as ON or OFF
: select the day(s) that obey this event
: select the controllers that obey this event

example project with 5 controllers needing different operating times & days :

EVENT	TIME	ACTION	DAY(s)	CONTROLLER(s)
1	08:00	ON	M,Tu,W,Th	1,2,3
2	06:00	ON	M,Tu,W,Th	5
3	18:00	OFF	M,Tu,W,Th	1,2,3 & 5
4	07:30	ON	M,Tu,W,Th,F,Sa,Su	4
5	22:00	OFF	M,Tu,W,Th,F,Sa,Su	4
6	09:00	ON	F,Sa,Su	1,2,3
7	15:00	OFF	F,Sa,Su	1,2,3

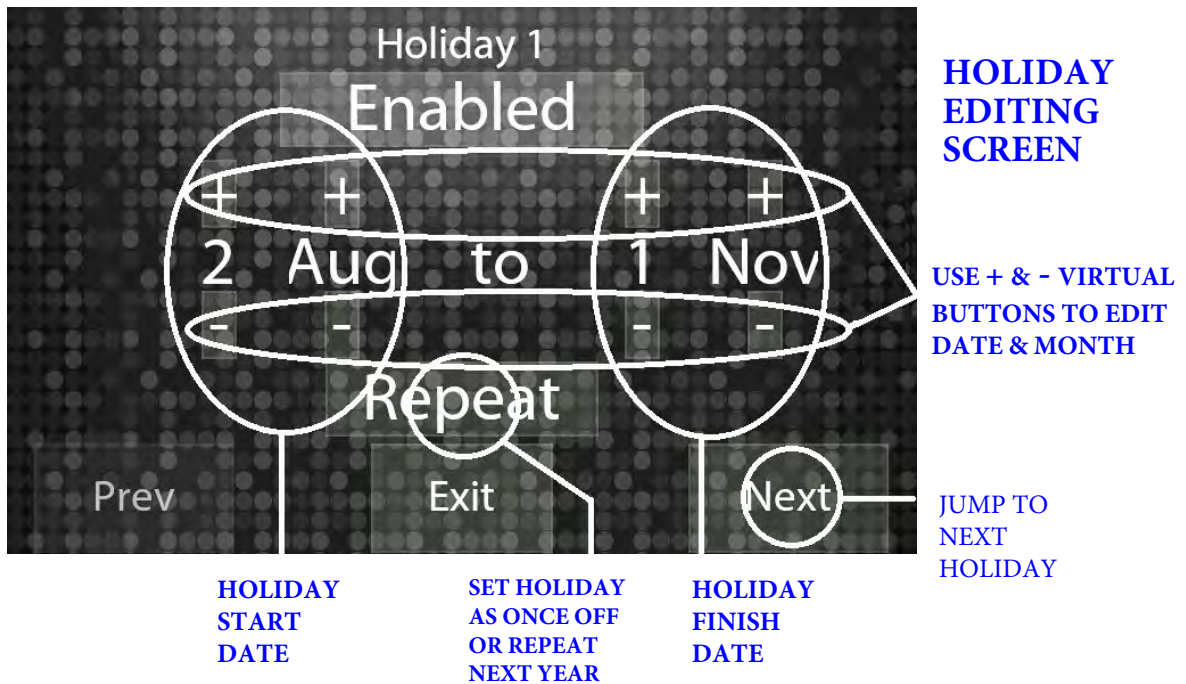*Up to 18 switching events can be programmed.*

4.) PROGRAMMING HOLIDAYS into HMI
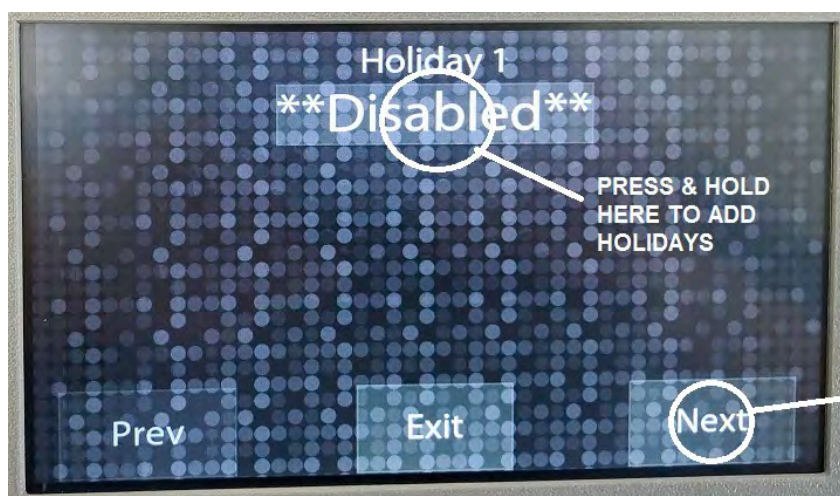
HOLIDAY EDITING SCREEN

TO MOVE TO NEXT HOLIDAY

To add holiday OFF overrides to the HMI time switch program, press & hold on the screen where it currently displays "DISABLED" or to add or edit existing holidays push on the screen where "NEXT" is displayed.

HOLIDAY EDITING SCREEN

USE + & – VIRTUAL BUTTONS TO EDIT DATE & MONTH

JUMP TO NEXT HOLIDAY

HOLIDAY START DATE

SET HOLIDAY AS ONCE OFF OR REPEAT NEXT YEAR

HOLIDAY FINISH DATE

NOTE : If HOLIDAYS are programmed into the HMI, they only affect controllers that **are using** the HMI time switch events. If a particular controller is not to react to the HMI holidays program that controller should be set to use the HMI events & use its own internal time switch (which also has the choice of holidays) or its run timer or its manual 24/7 mode.

Holidays can be programmed as singular date holidays with the same start & finish date **or** as a group of days as for example the Easter holidays with a start date & a finish date (inclusive). 12 holidays (single or groups) can be programmed. Each holiday can be set to automatically repeat on the same date(s) next year as for example Christmas 25 DEC. , or to only operate once then auto delete- for example as required to suit the changing dates for school holidays.

ZONE CONFIG

Press the "Zone Config" (virtual) button from the main menu to display & alter the zone identifier names.

ZONE NUMBER

SELECT ZONE NUMBER TO BE EDITED

EDITABLE ZONE TITLE PRESS HERE TO BRING UP STANDARD EDITOR PAGE

Press on the existing zone descriptor to trigger an editor page to appear to allow user programming of a suitable zone name.

setting the HMI's internal Clocks TIME

Press the "Set Time" (virtual) button from the main menu to display & alter the HMI's internal real time clock.

The display shows the existing time ,if not correct simply type in the 4 digits that set the correct current local time and press save. Time is set in a 24hr format - ie 3:30pm is 15:30.
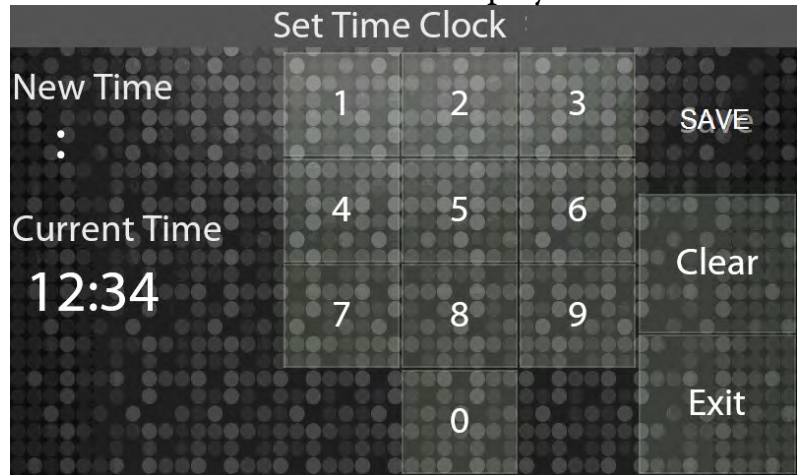
setting the HMI's internal Clocks DATE

Press the "Set Date" button from the main menu to display & alter the HMI's internal time clocks DATE.

The display shows the date edit page. Press "DAY" to set the day of the month number, Press "Month" to set the current month and press "Year" to set the last two year date numbers. Press "Save" to save & exit.
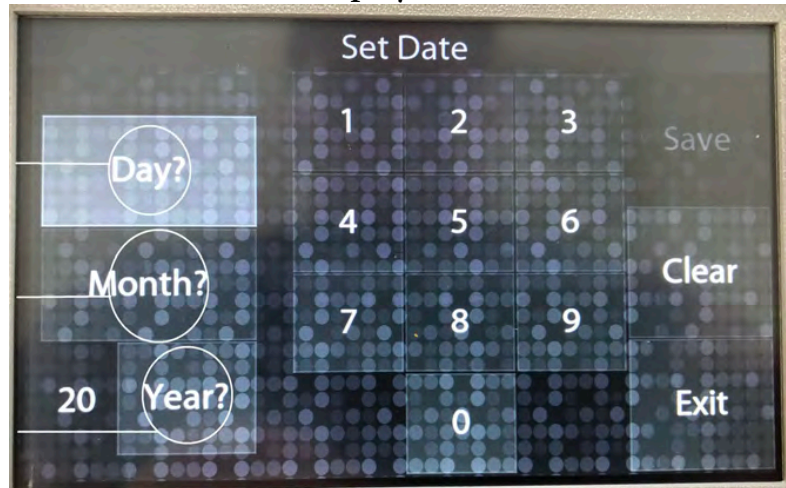
OPERATION

As stated on page 1&3 the displayed zone boxes on the main running screen give quick visual colour indication for the current operating mode. Also on the main running screen the time & date is displayed plus the outside air temperature **if** an O/A temperature sensor is connected to the controller with modbus address 1. Each zone box also displays the actual measured temperature & current setpoint. Pressing on a particular zone box opens up a detailed expanded zone screen for that zone, allowing setpoint editing, Auto/On/Off /AHR override control plus display the values of a connected CO2 sensor if installed plus any sensor installed in the Endeavours auxiliary input X4 terminal.

INDIVIDULE ZONE CONTROL SCREEN

Support Infomation button

The main menu also incorporates a button that opens up a page giving basic Hevac controls contact information, software version number & other software details for this product, also on this page is a reset button to wipe all loaded data from the HMI memory & reload factory defaults.

Site Programming Information Data

HMI main screen system indentifier name : _____

ModBus #	S/P	ZONE NAME	HMI T/SW. EVENTS	COMMENTS
1				.
2				.
3				.
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32				.

EVENT #	TIME	ACTION	INTERLOCKED CONTROLLERS	COMMENTS
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3				.
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