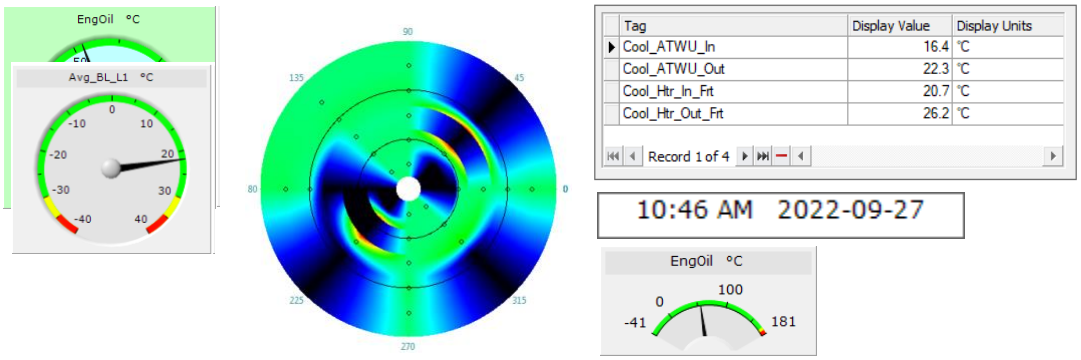
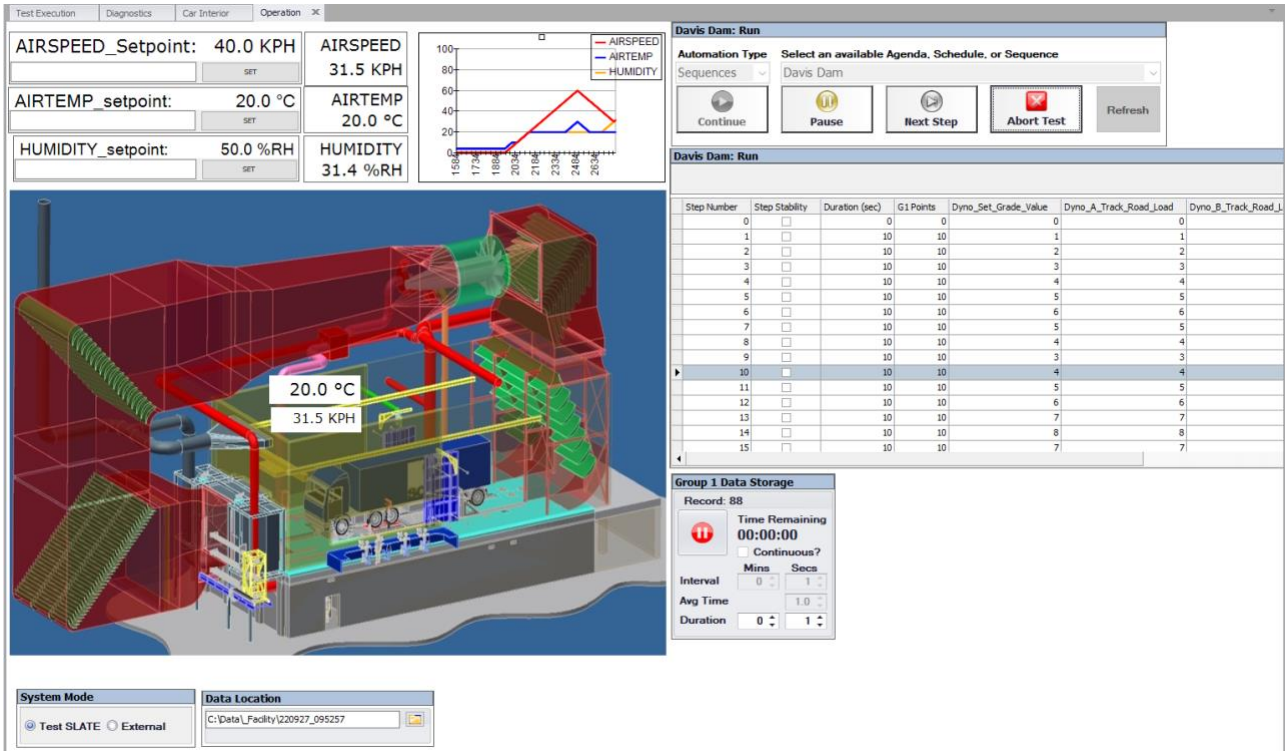
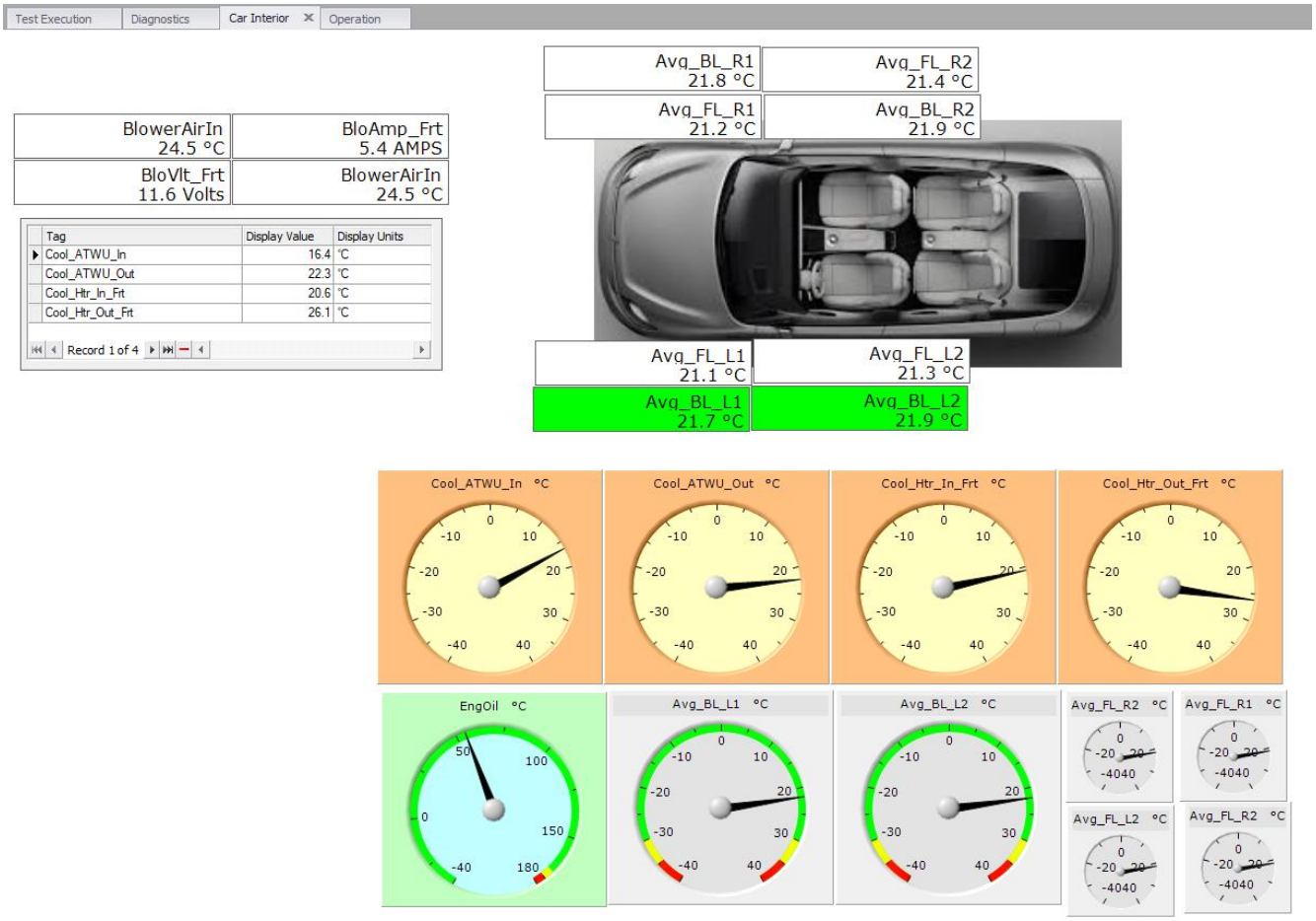
Customizable User Displays have always been key to the utility of Test SLATE. Test SLATE's built-in Display functions enable you to select from an array of display widgets linked to any I/O channel or calculated tag. Display widgets include alphanumeric text and tables, graphic trend plots, and analog gages and meters. Specialized planar displays are available to display pressure or temperature gradients across a test surface in real time. An almost unlimited number of each display widget can be combined on multiple Display windows for each configuration. Custom displays for facility control or other purposes can be developed for each application. At any time – whether before, during, or after a test – a user may configure new displays or modify existing displays.



Sample display widgets



Example integrated display



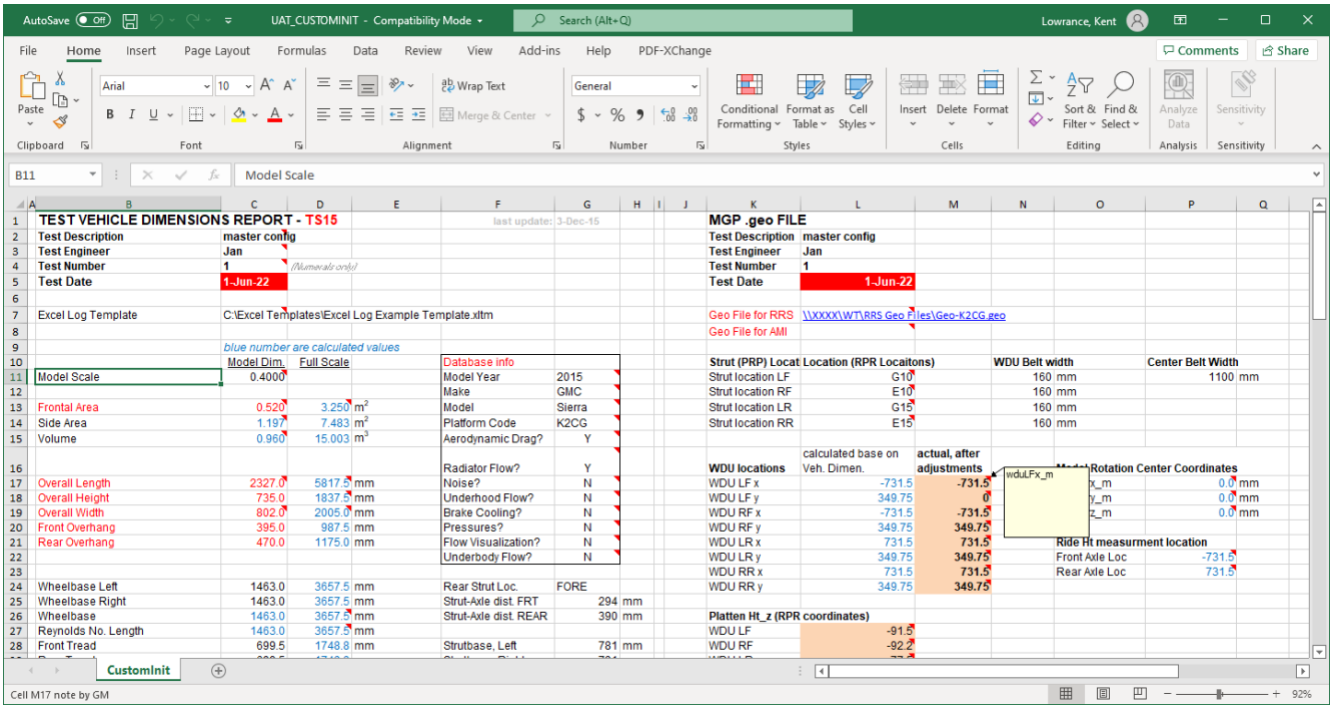
Example integrated display

Test SLATE OPC data server.

Test SLATE can be configured to act as a data supplier using standard OPC protocol, enabling any off-the-shelf data display or analysis package to be a client to active Test SLATE tags such as analog measurements or calculated values. Standard HMI packages enable you to define custom displays or analyses with the software tool of choice as long as it is OPC compliant. The need to have programming skills to customize is eliminated, and you are able to implement user interface displays as simple or as complex as needed. This also enables other OPC compliant software packages, such as a programmable logic controller (PLC), to share real-time access to any measurement or control tag in the Test SLATE configuration.

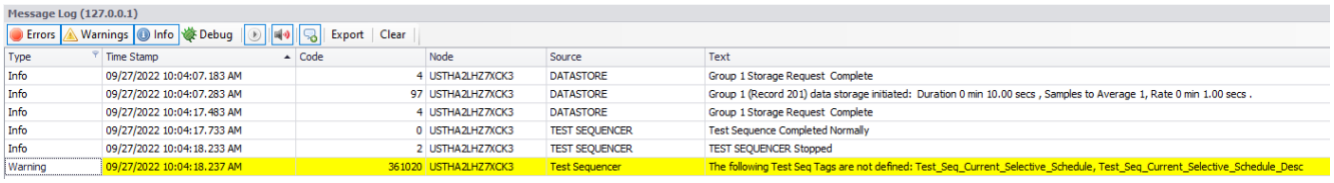
Test SLATE test initialization forms.

Test SLATE includes configurable test initialization forms. A test initialization form allows the storage and printing of user-specified information with the test data. The Test Initialization window is displayed to the test operator when a test is initialized. The standard initialization window contains information such as run number, test number, test engineer, test operator, etc. Test SLATE also allows a user customizable initialization through Excel where Comments mark tag names that can define values imported for use in calculations, stored with test data, used for limit checking, etc.



Test SLATE message logging.

Test SLATE keeps a log of messages that can be viewed through the Test SLATE application and exported into other text formats. Messages can contain information, warnings, and errors that are reported by various components of the system (i.e., drivers, Test SLATE menus, and Test SLATE background processes, etc.). Each entry in the log contains the severity of the message (i.e., information, warning, or error), the date and time of occurrence, the source of the message, a numeric message code, and the text message associated with the error code. Messages may be filtered by selecting options from a filter dialog box available from the Message Log display.

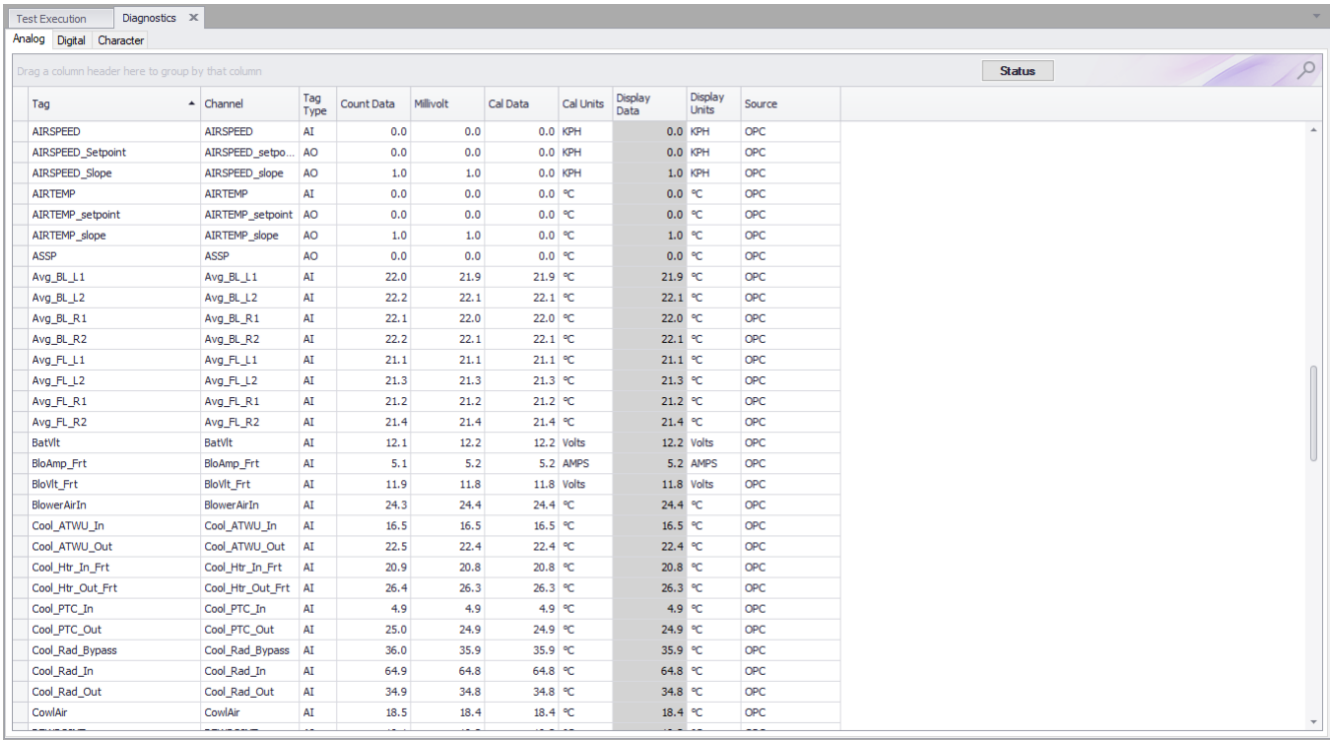


Type	Time Stamp	Code	Node	Source	Text
Info	09/27/2022 10:04:07.183 AM	4	USTHA2LHZ7XCK3	DATASTORE	Group 1 Storage Request Complete
Info	09/27/2022 10:04:07.283 AM	97	USTHA2LHZ7XCK3	DATASTORE	Group 1 (Record 201) data storage initiated: Duration 0 min 10.00 secs , Samples to Average 1, Rate 0 min 1.00 secs .
Info	09/27/2022 10:04:17.483 AM	4	USTHA2LHZ7XCK3	DATASTORE	Group 1 Storage Request Complete
Info	09/27/2022 10:04:17.733 AM	0	USTHA2LHZ7XCK3	TEST SEQUENCER	Test Sequence Completed Normally
Info	09/27/2022 10:04:18.233 AM	2	USTHA2LHZ7XCK3	TEST SEQUENCER	TEST SEQUENCER Stopped
Warning	09/27/2022 10:04:18.237 AM	361020	USTHA2LHZ7XCK3	Test Sequencer	The following Test Seq Tags are not defined: Test_Seq_Current_Selective_Schedule, Test_Seq_Current_Selective_Schedule_Desc

Example message log

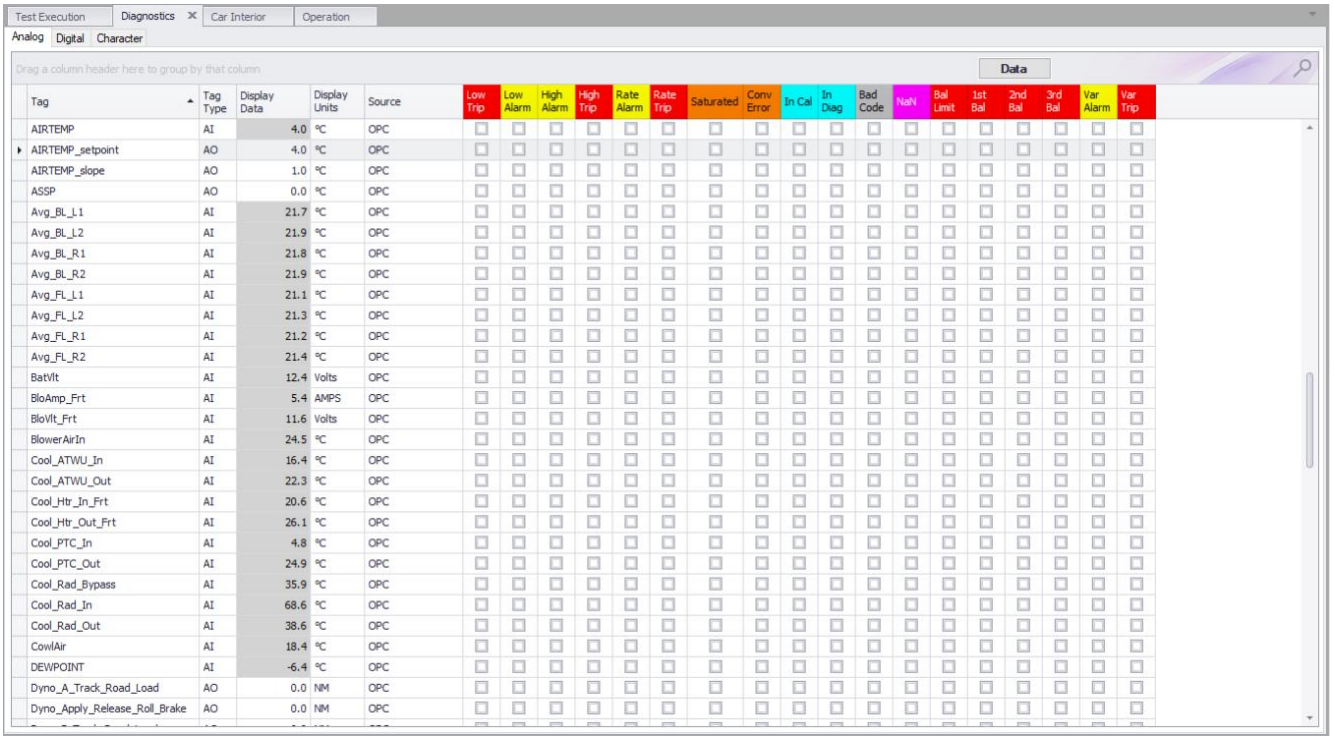
Test SLATE diagnostics.

Diagnostic displays provide the capability to isolate problems using software tools that display raw inputs as well as engineering unit data. These features are important to avoid costly downtime and excessive operational complexities. Test SLATE's diagnostic capabilities enable you to view all values for analog input, digital input, analog output, digital output, frequency input, and calculated tags. Test SLATE also provides control of analog output and digital output tags and reports the status of all tags (i.e., high trip, high alarm, low alarm, low trip, etc.).



Tag	Channel	Tag Type	Count Data	Millivolt	Cal Data	Cal Units	Display Data	Display Units	Source
AIRSPEED	AIRSPEED	AI	0.0	0.0	0.0	KPH	0.0	KPH	OPC
AIRSPEED_Setpoint	AIRSPEED_setpo...	AO	0.0	0.0	0.0	KPH	0.0	KPH	OPC
AIRSPEED_Slope	AIRSPEED_slope	AO	1.0	1.0	0.0	KPH	1.0	KPH	OPC
AIRTEMP	AIRTEMP	AI	0.0	0.0	0.0	°C	0.0	°C	OPC
AIRTEMP_setpoint	AIRTEMP_setpoint	AO	0.0	0.0	0.0	°C	0.0	°C	OPC
AIRTEMP_slope	AIRTEMP_slope	AO	1.0	1.0	0.0	°C	1.0	°C	OPC
ASSP	ASSP	AO	0.0	0.0	0.0	°C	0.0	°C	OPC
Avg_BL_L1	Avg_BL_L1	AI	22.0	21.9	21.9	°C	21.9	°C	OPC
Avg_BL_L2	Avg_BL_L2	AI	22.2	22.1	22.1	°C	22.1	°C	OPC
Avg_BL_R1	Avg_BL_R1	AI	22.1	22.0	22.0	°C	22.0	°C	OPC
Avg_BL_R2	Avg_BL_R2	AI	22.2	22.1	22.1	°C	22.1	°C	OPC
Avg_FL_L1	Avg_FL_L1	AI	21.1	21.1	21.1	°C	21.1	°C	OPC
Avg_FL_L2	Avg_FL_L2	AI	21.3	21.3	21.3	°C	21.3	°C	OPC
Avg_FL_R1	Avg_FL_R1	AI	21.2	21.2	21.2	°C	21.2	°C	OPC
Avg_FL_R2	Avg_FL_R2	AI	21.4	21.4	21.4	°C	21.4	°C	OPC
BatVlt	BatVlt	AI	12.1	12.2	12.2	Volts	12.2	Volts	OPC
BloAmp_Frt	BloAmp_Frt	AI	5.1	5.2	5.2	AMPS	5.2	AMPS	OPC
BloVlt_Frt	BloVlt_Frt	AI	11.9	11.8	11.8	Volts	11.8	Volts	OPC
BlowerAirIn	BlowerAirIn	AI	24.3	24.4	24.4	°C	24.4	°C	OPC
Cool_ATWU_In	Cool_ATWU_In	AI	16.5	16.5	16.5	°C	16.5	°C	OPC
Cool_ATWU_Out	Cool_ATWU_Out	AI	22.5	22.4	22.4	°C	22.4	°C	OPC
Cool_Htr_In_Frt	Cool_Htr_In_Frt	AI	20.9	20.8	20.8	°C	20.8	°C	OPC
Cool_Htr_Out_Frt	Cool_Htr_Out_Frt	AI	26.4	26.3	26.3	°C	26.3	°C	OPC
Cool_PTC_In	Cool_PTC_In	AI	4.9	4.9	4.9	°C	4.9	°C	OPC
Cool_PTC_Out	Cool_PTC_Out	AI	25.0	24.9	24.9	°C	24.9	°C	OPC
Cool_Rad_Bypass	Cool_Rad_Bypass	AI	36.0	35.9	35.9	°C	35.9	°C	OPC
Cool_Rad_In	Cool_Rad_In	AI	64.9	64.8	64.8	°C	64.8	°C	OPC
Cool_Rad_Out	Cool_Rad_Out	AI	34.9	34.8	34.8	°C	34.8	°C	OPC
CowlAir	CowlAir	AI	18.5	18.4	18.4	°C	18.4	°C	OPC

Diagnostics value screen

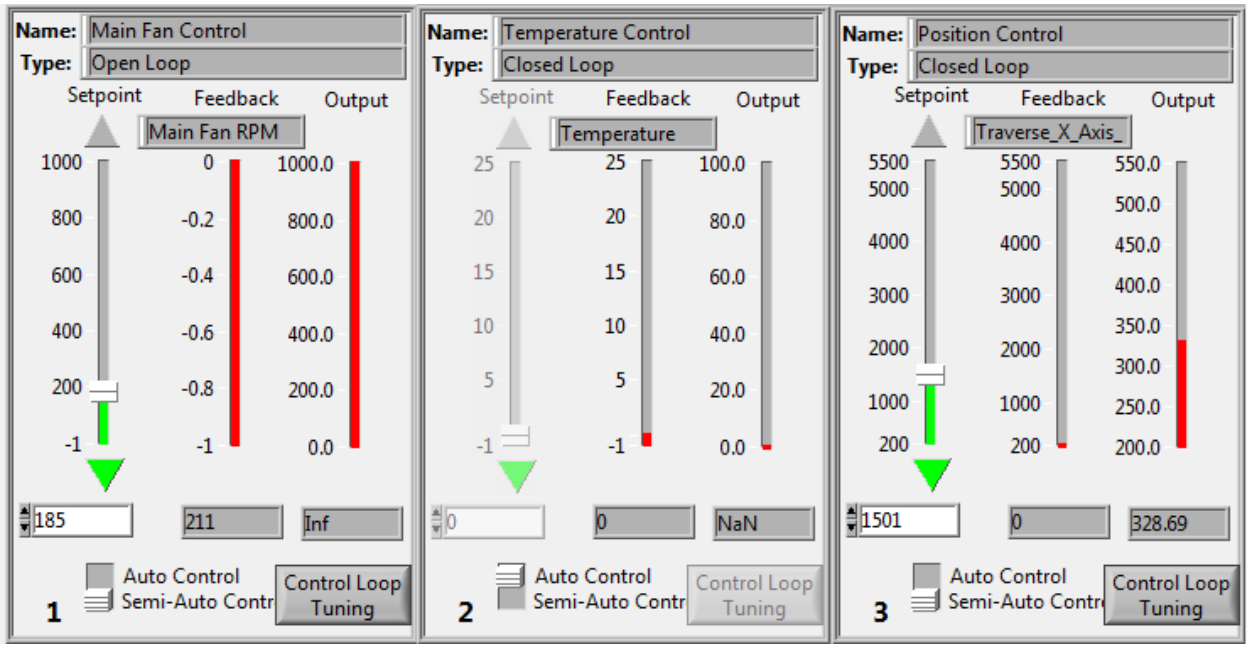


Tag	Tag Type	Display Data	Display Units	Source	Low Trip	Low Alarm	High Alarm	High Trip	Rate Alarm	Rate Trip	Saturated	Conv Error	In Cal	In Diag	Bad Code	NaN	Bal Limit	1st Bal	2nd Bal	3rd Bal	Var Alarm	Var Trip
AIRTEMP	AI	4.0	°C	OPC																		
AIRTEMP_setpoint	AO	4.0	°C	OPC																		
AIRTEMP_slope	AO	1.0	°C	OPC																		
ASSP	AO	0.0	°C	OPC																		
Avg_BL_L1	AI	21.7	°C	OPC																		
Avg_BL_L2	AI	21.9	°C	OPC																		
Avg_BL_R1	AI	21.8	°C	OPC																		
Avg_BL_R2	AI	21.9	°C	OPC																		
Avg_FL_L1	AI	21.1	°C	OPC																		
Avg_FL_L2	AI	21.3	°C	OPC																		
Avg_FL_R1	AI	21.2	°C	OPC																		
Avg_FL_R2	AI	21.4	°C	OPC																		
BatVlt	AI	12.4	Volts	OPC																		
BloAmp_Frt	AI	5.4	AMPS	OPC																		
BloVlt_Frt	AI	11.6	Volts	OPC																		
BlowerAirIn	AI	24.5	°C	OPC																		
Cool_ATWU_In	AI	16.4	°C	OPC																		
Cool_ATWU_Out	AI	22.3	°C	OPC																		
Cool_Htr_In_Frt	AI	20.6	°C	OPC																		
Cool_Htr_Out_Frt	AI	26.1	°C	OPC																		
Cool_PTC_In	AI	4.8	°C	OPC																		
Cool_PTC_Out	AI	24.9	°C	OPC																		
Cool_Rad_Bypass	AI	35.9	°C	OPC																		
Cool_Rad_In	AI	68.6	°C	OPC																		
Cool_Rad_Out	AI	38.6	°C	OPC																		
CowlAir	AI	18.4	°C	OPC																		
DEWPOINT	AI	-6.4	°C	OPC																		
Dyno_A_Track_Road_Load	AO	0.0	NM	OPC																		
Dyno_Apply_Release_Roll_Brake	AO	0.0	NM	OPC																		

Diagnostics status screen

Test SLATE control loops.

Test SLATE features user-definable PID loops and control loop tuning/troubleshooting tools. In-test controls are provided for the transfer between automatic, semi-automatic, and manual modes. You can define PID loops attributes, such as loop type (e.g., open and closed), loop activation tag, loop disabled tag, output tag, and feedback tag. Depending on the hardware being used in the application, sophisticated or high-speed PID controls may be implemented with external hardware and coordinated through Test SLATE.



Control loop tuning window