ANNUNCIATOR QUICK START

INSTALLATION

Mounting the Module

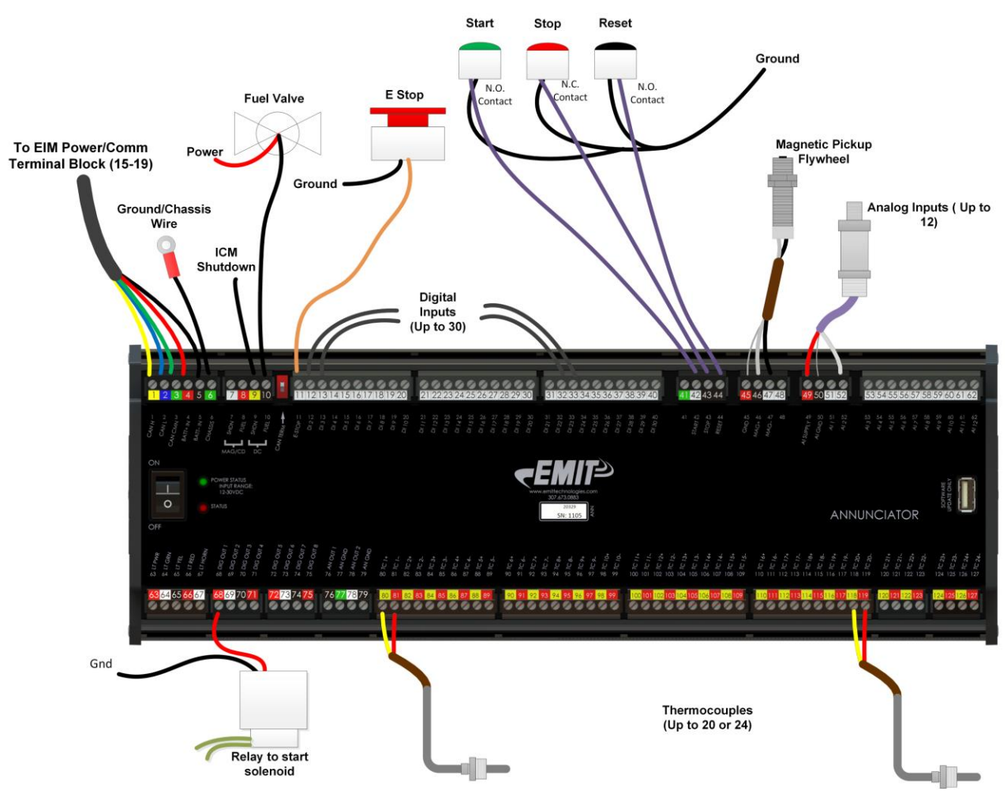
- Snap the annunciator onto a DIN rail in the Panel.
- Add DIN rail stops on each side of the Annunciator module.

Power/Communication Harness Wiring

- Wire a fused power source to the BATT+/- connection on the annunciator module, pins 4/5.
- Wire the CAN connection, pins 1-3, to the EIM display.
  - If more than one module is used with the display, wire the CAN harness in a single chain and set the termination switches appropriately, as described in the installation guide.

Main Shutdown Wiring

- The main shutdown wiring terminal block is pins 7-10. The annunciator should be wired to shut off the ignition, and if present, a fuel valve when the system is stopped. The wiring will be dependent on the fuel valve and ignition type.
- If using a DC ignition shutdown lead and DC powered fuel valve (most common), wire the DC SHDN (Pin 9) to the ignition shutdown, the DC FUEL to the negative terminal of the fuel valve, and the positive terminal of the fuel valve to a power source.
- If using a g-lead powered fuel valve, see the installation guide.



Switch Wiring

- Wire the Start and Reset switches to pins 42 and 44 respectively on the Annunciator module, and the other side of the switch to ground, using the normally open switch contacts.
- Wire the Stop switch to pin 43 of the annunciator module and the other side to ground, using the normally closed switch contacts.
- Connect the E-Stop to pin 11 on the annunciator module.

Digital Input Wiring

- Wire any digital input sensors to pins 12-40 on the annunciator module.
- Any input can later be software-configured to be normally open or normally closed.
- Wire any no-flow proximity switches to the digital input section as well.

Analog Input Wiring

- Wire any analog inputs to the section from pins 45-62 on the annunciator module.
- Any analog input can be software configured to be 4-20mA, 0-5V, or 1-5V.
- The analog supply pins are 12V, for sensors with other power requirements use another power source.

Thermocouple Wiring

- Thermocouples should be wired to the block from pins 80-127.
- Thermocouple inputs can be software-configured to be Type K or Type J.
- If using a Type J themocouple, wire the white wire to the yellow terminal on the thermocouple input.

Start Relay

- If the Annunciator is controlling a start solenoid directly, wire pin 69 to the control side of a relay with the other control relay pin wired to ground. Wire the control side of a relay to power and one side of a magnetic switch (master solenoid), or as required for the start circuit
- If another ECU is controlling the crank (e.g. CAT ADEM) digital output #2 will control engine RUN rather than the momentary crank.

Magnetic Pickup

- A magnetic pickup can be wired to pins 46 and 47 of the annunciator.
- If an EMIT governor or ignition is present in the system, a magnetic pickup is not required since the engine speed can be shared over the communication bus. No setup is required in this case.
- If an EDT is pulling data from an ECU the MPU is not needed.

Pre/Post Lube Output (Optional)

- If using a Pre/Post Lube system, wire pin 68 to the control side of a relay with the other pin of the relay coil to ground.
- Wire the output side of the relay to control the lube pump as required
- The LUBE output will run for a user-configured amount of time before the engine starts, and after the engine stops.

ECU Integration (Optional)

- If using a non-EMIT ECU, such as a Caterpillar ADEM or Waukesha ESM, follow the included wiring diagram if possible, but the general wiring setup is listed here.
- Set up a digital output to function DRIVEN EQUIPMENT READY to drive the relevant input on the ECU
- Wire the STARTER output to a relay as described above, then to the START or RUN input of the ECU.
- If an idle permissive is needed, wire one of the digital outputs to a relay and to the IDLE/RATED SPEED or REMOTE SPEED ENABLE input of the ECU.
- Wire the RUN or FAULT status from the ECU to DI27 on the annunciator.
- If using remote speed control, wire an analog output to the remote speed input of the ECU (Additional relays may be needed for switching between auto and manual speed).

CONTINUED ON REVERSE SIDE

QUICK START GUIDE

SETUP AND CONFIGURATION

General Input Notes

Annunciator inputs are set each set up to have an input class, which determines when the input is armed, and an input action which determines what happens when the input is faulted while armed.

The available input classes are:

- Class ESD: The input is always armed.
- Class A: The input is always armed, except during testing mode.
- Class B1: The input is armed after the "Class B Timer" expires, which begins counting down after "Reset" press.
- Class B2: The input is armed after the "Class B2 Timer" expires, which begins counting down after "Reset" press.
- Class C: The input is armed whenever it first becomes not faulted after the "Reset" button is pressed.

The available alarm actions are:

- Shutdown: Shut down the engine.
- Warning: Illuminate the warning lamp while faulted.
- No Action: The alarm has no action, but the input is still present in the system to view for gauges, etc.
- Disabled: The input is not used.

Annunciator Setup Wizard

The best way to set up the annunciator for the first time is to use the setup wizard, which will help step through all the required setup screens. To access the setup wizard (if using a DCT):

1. Enter the Setup or Engineering password.
2. Select “Settings”
3. Select “System / Global Settings”
4. Select “Compressor quick setup”

The setup wizard will ask some questions about the general system setup and go through setup steps as needed. The wizard will fill in default values for most items, then the inputs can be edited to get the specifics.

Input Setup Options

Digital Inputs

- Name: Choose or type in a name for the input.
- Type: Choose normally open or normally closed, based on the sensor type.
- Alarm action and class: Choose as needed based on the descriptions in the previous section.

Analog Inputs

- Name: Choose or type in a name for the input.
- Type: Choose 0-5V, 1-5V, or 4-20mA based on the sensor type.
- Value at (low) and (high): Enter the full range of the sensor. This should be printed on the sensor itself or can be found in the sensor documentation.
- Units: Enter the unit of the sensor (e.g. PSI, KPA, …).
- Alarm low and high: Enter the low and high alarm for the sensor. If either the low or high is not needed, it can be put at the limit or out of range of the sensor to keep it from ever faulting.
- Alarm action and class: Choose as needed based on the descriptions in the previous section. The class for the low vs. high alarm can be different if needed.
- Optional secondary warning: If an extra warning is desired, it can be added here.

Thermocouples

- Name: Choose or type in a name for the input.
- Type: Choose Type K or Type J based on the thermocouple type.
- Display range: Choose the low and high display range for the input. This only limits how the gauges and graphs will be drawn, and does not have any effect on actual system operation. For example, one might want to have jacket water temperature use a range of 100-200 degrees, but postcat temp have a range of 300 to 1300 degrees.
- Alarm low/ high: Choose the low and high alarms if required. An unneeded limit can be set to zero to be disabled.
- Alarm action and class: Choose as needed based on the descriptions in the previous section.
- Optional secondary warning: If an extra warning is desired, it can be added here.

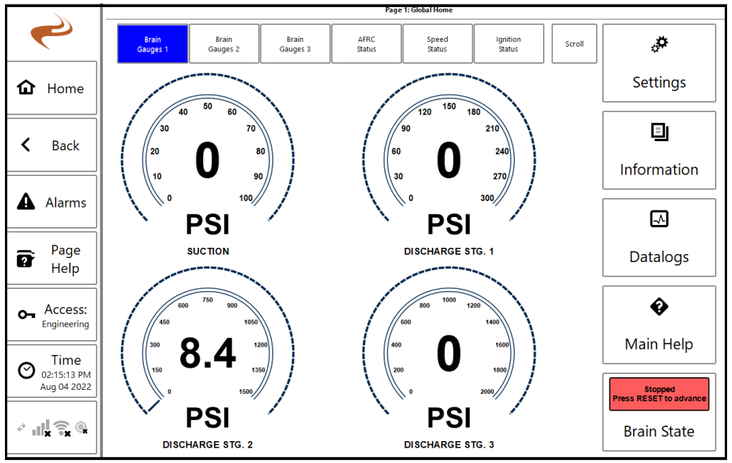
Magnetic Pickup

- Number of flywheel teeth: Enter the number of teeth expected on the MPU.
- Low/high alarm values: Enter limits as required.

BASIC ANNUNCIATOR USER INTERFACE OVERVIEW

Brain /Annunciator Home (DCT)

The home page shows a series of tabs along the top for connected modules. The Brain gauges are relevant to this module.



Up to five sets of nine gauges each can be shown on the home screen. Selecting a gauge will show the previous minute of runtime data as a graph, along with some input statistics from the datalog.
The run status on the bottom-right will show if the annunciator is running. Selecting the run status box will switch to the Input and Timer Status screen.

The gauges shown can be changed under “Settings” -> “Brain” -> “Gauges Setup”.

Input and Timer Status Screen

The input and timer status screen will show the status of any faulted inputs for the “faults” category. There are other status categories for the state information, Timers, Outputs, and loops.

Start/Stop/Reset of Annunciator

With the Annunciator in the "Stopped" state, pressing the panel RESET button, or pressing "Reset" on the Annunciator home screen will reset the annunciator. This will cause the annunciator to go to the STANDBY state if using another ECU or auto-crank. On basic engines a reset will go directly to RUN state. From STANDBY the START button can be used to advance the start sequence.

If not in the stopped state, pressing RESET will only restart the B timers.

Pressing the panel STOP button or selecting the "STOP" button on the annunciator home screen will always cause the annunciator to go to the "Stopped" state.

If autostart is used, then pressing the panel START button will begin the auto start process. This can be done from the Standby state and all A contacts have to be clear for autostart to begin.
If autostart or another ECU is not used then holding the START button will run the starter, if the annunciator is in a run state.

Panel Light Tower

If using an EMIT panel, the light tower has the following functions.

- **Red Light:** Solid red when annunciator is stopped or faulted
- **Yellow Light:** Solid yellow if the engine is running with warnings, flashes yellow during autostart, and flashes yellow during last 5 seconds of B1 timer to warn the user it is about to expire
- **Green Light:** Solid green while annunciator is running (ignition / fuel enabled)
- **Siren:** Solid siren during autostart warn phase, quick beeps a few seconds before a auto-blowdown