



The Controller

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Ideas for Articles of Interest?

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Logic Announces Newest Engineer

We are pleased to announce Bart Stapelton as the most recent addition to our engineering staff here at LOGIC Technologies Inc. Many of our customers have already worked with Bart. He has been on staff for a little over six months. Bart has over 15 years of experience building control panels and managing a panel shop. Bart has an associates degree in Electronics Technology and will soon complete a Bachelors degree in Technology Management. Bart's duties include new system design, system expansion, software configuration, documentation and technical support. You can reach Bart at extention 6618.

Troubleshooting tip

by Russ Nagel

We are going to cover a feature available in ECON that seldom gets used, but can be quite handy when troubleshooting a problem with your refrigeration system. When trouble shooting an issue, it may become necessary to frequently navigate between two different screens, such as the Vessel Status and the I/O Maintenance Utility (a.k.a. Forced I/O) screen. Rather than pushing buttons, or clicking away with the mouse, you can have both views on the screen at the same time. It is pretty easy to set this up.

Once ECON is running, go to the upper left hand corner of the screen and select **Server**. Then select **Console View** and **Open**. You should get a screen similar to

fig. 1 on the next page. Your system will likely have only one item listed. Highlight the console setup you typically use and select **Copy**. A Console Communication Setup screen will appear. In the upper right hand corner it will say Location Copy as the Location Description. Change Location Copy to another name. Select OK to create a new console communication window. Now, when you open the Console Communication screen, you will see your new console configuration. See figure 2. You will notice that figure 2 has a line called Russ Office OS 2, which is a copy of the second selection in figure 1, Russ Office Os. Now that you have two options on the Console Select screen, simply select the first one as you normally would. Then pull up the Console Select screen again and select the option you just created. Now there are two console

screens available that can be used for independent navigation.

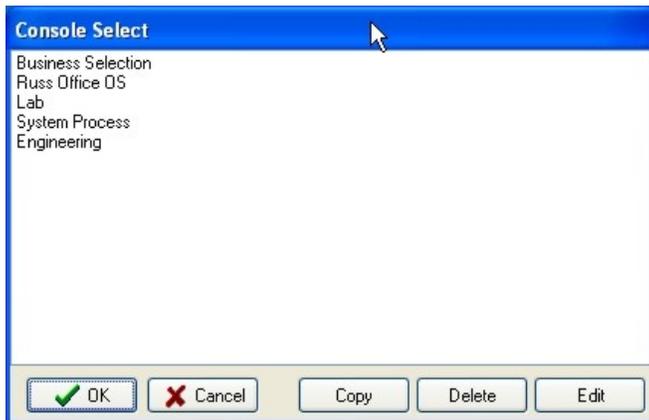


Fig. 1

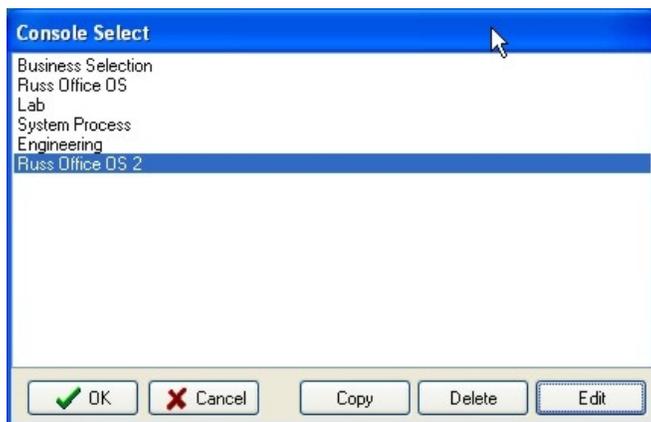


Fig. 2

Installing a New Sensor

by Russ Nagel

This article is going to cover, all the steps necessary to install a new analog sensor. Due to the amount of information involved, this topic will have to be split between two issues of [The Controller](#).

The first consideration is the type of sensor we are using and the availability of inputs for the sensor. Our system is configured to work with sensors that will fit into one of two categories, temperature and everything else. Analog input cards that read temperature have a modification, called a resistor pack, that allows the card to work with very small (0-1mA) values. The resistor pack prevents this module from working with the more common (pressure, level, etc...) 4-20mA sensors.

Review your prints to determine if you have the appropriate analog inputs available. Spare temperature (0-1mA) inputs are listed separately from spare 4-20mA

sensors. To verify available spaces, note the wire number in the prints for the vacant position, then look at the analog terminal block where the field wiring lands and ensure there is no field wiring on the terminal where you want to add the new sensor. If a sensor is already landed where you want to add the new sensor, update your prints and find another channel. If there aren't any available analog inputs, you'll need to add another

analog input module. Give us a call and we'll help with an addition.

Let's review how the sensor wires are landed on the terminal block. The terminal block for analog sensors has three levels; +24VDC, signal and ground. There is also a removable plug in element on the top of the terminal block that is either a fuse or a resistor.

The plug in element for a temperature sensor is a 22k Ohm resistor. The plug in element is gray and you can clearly see the resistor. Temperature sensors are marked as ICTD in the prints. All other sensors (NH3, level, etc..) require a fuse. Different sensors require different fuses. The value of the fuse is shown in the prints. Simply refer to an existing sensor to see the value of the fuse.

The top (of three) layer of the terminal block is the +24VDC supply for the sensor. The DC power supply is located in the cabinet and feeds DC voltage to the red power bar on the cabinet side (typically on the left) of the terminal. The middle level is the signal returning from the sensor. This is the signal that is fed to the input on the PLC rack. The bottom layer is ground. It is used for the shield ground or drain wire. Ammonia sensors also have a ground signal that is connected to the ground layer. The system prints will show all of the necessary signal connections. Now that that the new sensor has been landed on the analog input terminal, it's time to set up the software.

Often, experienced users can add a sensor (typically a temperature sensor) without any assistance from us. The sensor works properly and has an analog page that shows the proper value. The analog page still has some fields that aren't what they should be. There are software changes that still have to be made before the addition is complete.

Now it's time to configure the software to monitor the sensor that has been added. The first step is to go to the screen (F1,F1) that displays the analog sensors. Select the <PgDn> key until the final sensor is displayed. Use the mouse to select the final sensor, then select the <N>ext button along the bottom. This will present the user with an unpopulated (blank) analog sensor page. This page has to be filled in with the correct values.

Fill in line two first. Use your mouse

to select line two. This line requires the I/O# for the input you are using. The I/O# can be found in your system prints. It is the number in the box on the spare input you are using. Typically, our analog I/O#s start at 500.

Select line one to fill in the description and units of measurement. At this point you may still be in **edit** mode. If so, hit the Esc key to exit edit mode. Now it is necessary to enter the formula. First write down the formula needed. The best way to do that is, go to an existing sensor that is the same as the one we are adding. Select the <C>alibrate button and a new screen will pop up (next page). To the right of the word **Norm**, you will see the formula for the sensor. This formula will need to be added to your new sensor. Write this formula down. Once you

Training Info & Schedule

Operator Level Sessions

This class session provides in-depth coverage of the use of our system to maintain the daily operations of a refrigerated facility. The class is conducted by Gordon Simpson who has many years of experience designing refrigeration control systems. In effect, the classes are taught in layman's terms by someone who fully understands the issues faced by refrigeration operators.

**Wednesday, June 8 thru
Friday, June 10.**
**Wednesday, July 13 thru
Friday, July 15.**

Advanced SST Sessions

This class session provides in-depth coverage of the screen and report development tools provided by our system. These classes also briefly cover the script language used to develop control algorithms. These classes are conducted by senior members of our engineering staff. Prior technical expertise is a pre-requisite for this course.

**Wednesday, Aug 10 thru
Friday, Aug 12**

Training Enrollment

Operator training sessions are \$450 per person and advanced training sessions are \$750 per person. We provide lunch for each class day; however, all other travel expenses are your responsibility.

Seating is limited so make your reservations early by contacting Kim Smith or Cindy Gaffney @ 770-389-4964

```

Analog Signal Setup Utility
(1) ..... Description:                               Raw Value: NDF
      Current Value:                               0.00
(2) ... Signal Database #: 0 = No Signal Definition
(3) ..... Scan Mode Flag: INACTIVE
(4) ... Alarm Mode Change: None (INA)
(5) ... Min/Max Mode Flag: INACTIVE
(6) ..... Low Alarm: 0.00 db: 0.0 Lv: 0 Job: VZc: 0
(7) ..... High Alarm: 0.00 db: 0.0 Lv: 0 Job: VZc: 0
      Alarm Status: NO ALARM
      Minimum Value: 0.00
      Maximum Value: 0.00

(8) .. Control: 0 & 0 On > 0.00 Dead Band: 0.00 Job:
              0 & 0 Off > 0.00 Dead Band: 0.00 Job:

(9) Group:

Analog ID # 593      Scan = 0.76      04-27-2011 11:05:50
Last Message :

<ESC>ape To Menu, <P>revious, <N>ext, <E>dit, <T>rend
On-line Using UDP Port: 1012
  
```

Figure 3

navigate back to the sensor you are adding, you'll add it to the new sensor. Write this formula down, once we navigate back to the sensor you are adding you'll add it to the new sensor. As promised, this article covers too much information to fit in one issue

of the The Controller. We'll pick this up in the next issue and complete the job.

Caution! The Following Alarm is Important!

ANASCAN Invalid Command Syntax (***)

This means your system is no longer scanning your analog inputs. Which means levels, pressures and temperatures are no being updated properly. Once you acknowledge this alarm, don't do anything else until you know you have completely recovered from the error. Make sure your analog sensor page is being updated!

Intellectual growth should begin at birth and cease only at death.

Albert Einstein

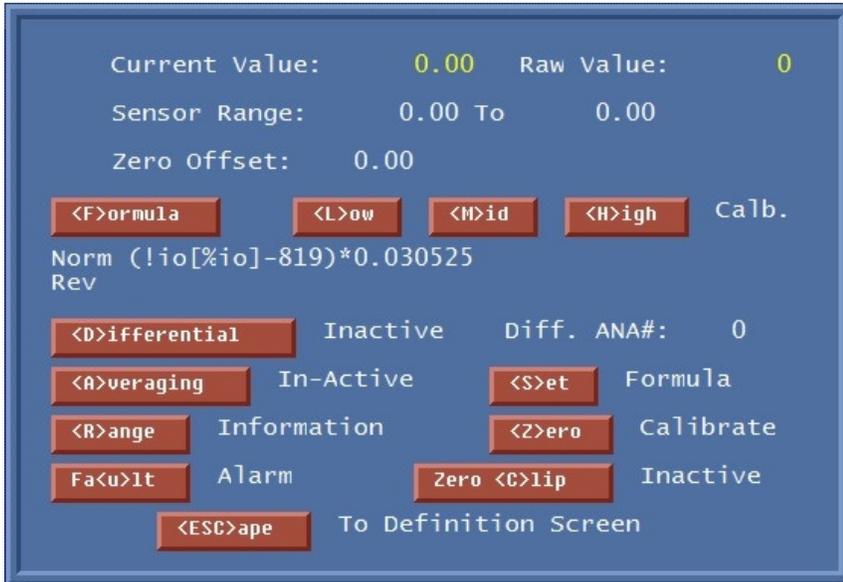


Figure 4



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Place
Stamp
Here

Place Address Label Here