



Consolidator+

MasterClass

Week 4 – Misc. Applications

Today's Key Topics

- Pressure Monitoring
- Leak Detection
- Temperature Monitoring
- pH/Analytical Monitoring
- Speed/Frequency Monitoring
- Timers
- Scheduling (with real-time clock)



ConsoliDator+

MasterClass

PRECISION DIGITAL

Pressure Monitoring!

Inlet Pressure psi
8,082.4

Outlet Pressure psi
5,392.9

Average Reading psi
6,737.66

Menu



Scan

Ack

All

MENU

F1

F2

F3

F4

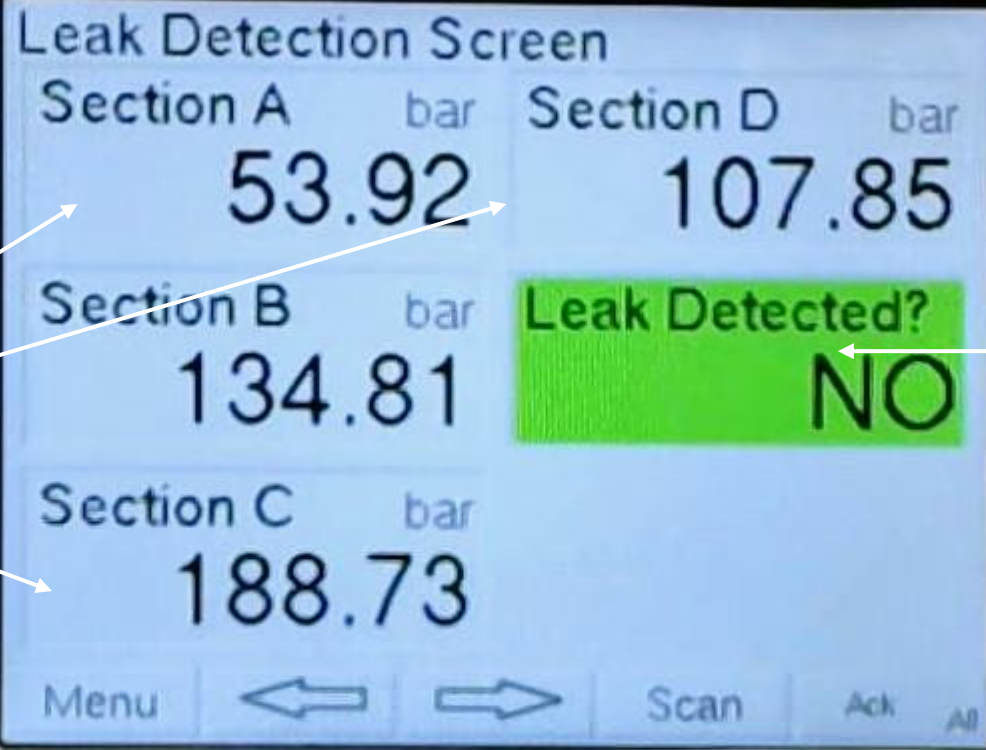


Consolidator+

Here we are monitoring TWO pressure readings – one “Inlet” and one “Outlet”

The channel on the bottom, in GREEN, is a math channel that is showing you the average of both pressure readings.

You will also notice, the bar graph is GREEN as well, so the user can easily know which channel the bar graph represents.



On this screen, we are monitoring various "Sections" of a pipe or other pressurized system

Everything seems to be operating normally, so our "Lead Detected?" alarm channel is GREEN, and it's letting us know that there are no leaks present.

MENU F1 F2 F3 F4

UH OH!!

Section A's pressure changed, and that is seen because the "Section A" channel is now RED and flashing



Now that Section A is in alarm, our "Lead Detected?" alarm channel now says, "YES, there is a leak" and the color is now an extremely ugly combination of YELLOW and PINK.

WHAT NOW?!?

Now both Sections A and D are in alarm because their pressure is dropping rapidly.

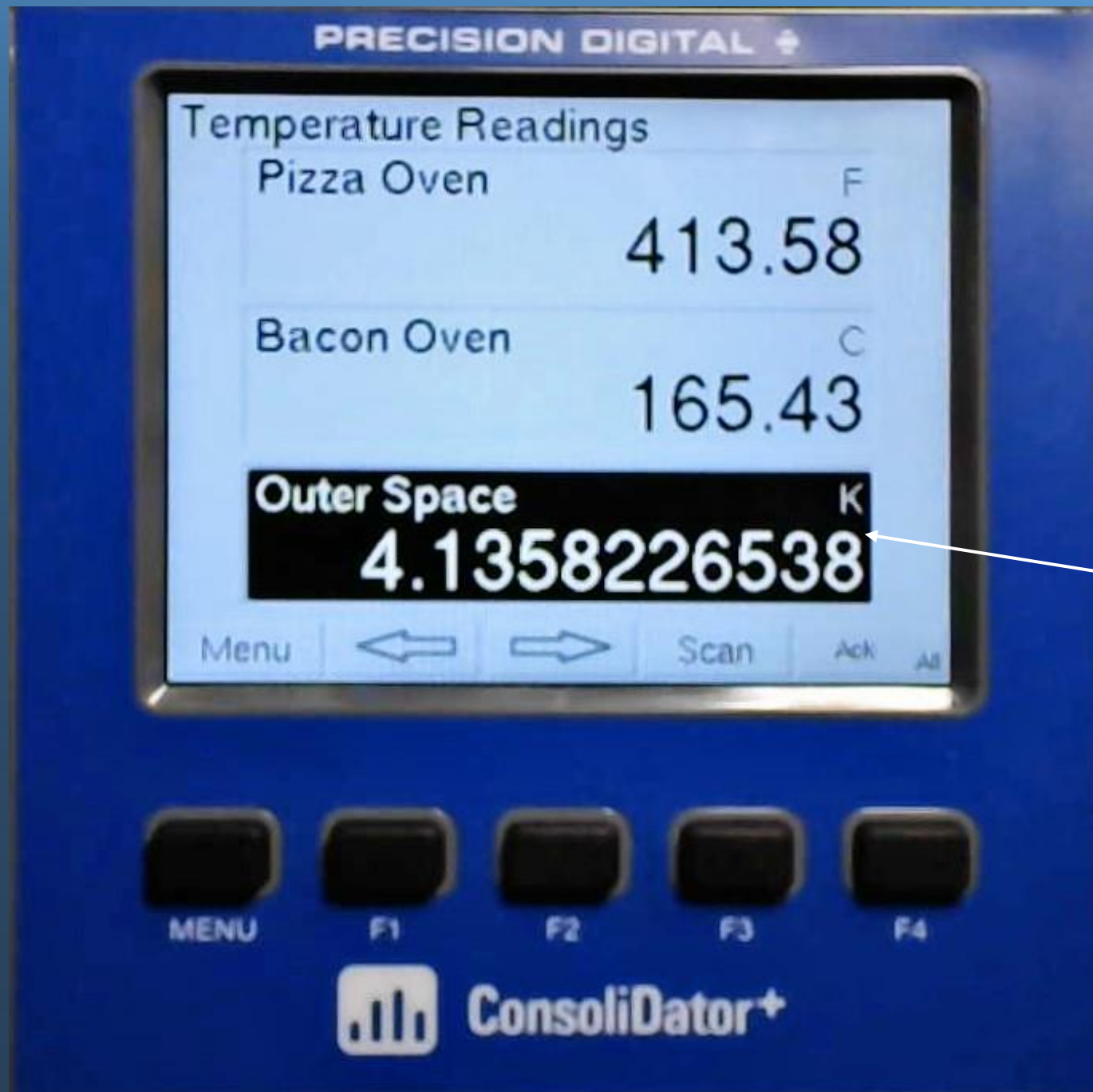
This would indicate a rather severe leak.



Notice how NOTHING has changed on our alarm channel!

This is actually a "common alarm", like what we saw last week with the Gas Detection slides.

The ConsoliDator+ CANNOT accept direct temperature inputs (RTDs, Thermocouples, etc.) but that doesn't mean it cannot monitor temperature!



The point here is to show you a couple things.

1. Degrees Kelvin is actually a pre-defined unit stored in the product's "Library".
2. LOOK HOW MANY DECIMALS CAN BE DISPLAYED ON THE SCREEN!!

Here we are looking at the reading from a pH probe.

We can also see the sensor is at 68% "life" before it needs to be calibrated, cleaned, or replaced

Lastly, we are also keeping track of how long the probe has been installed



NOTE: The "Sensor Life" and "Days in Service" is going to be read using the Modbus protocol.

However, if we wanted to, we COULD have the ConsoliDator+ calculate both of those parameters on its own.

Here we are using the PULSE INPUTS on the ConsoliDator+ to monitor the "Speed" (or, technically speaking, the frequency) of an Intake Fan and a Motor.

Basically, we are using the ConsoliDator+ as a tachometer!



We can even totalize these "rates" and actually see how many times our fan has rotated!

And of course, just like with ANY total, we can program a "Soft Key" to reset the total!



ConsoliDator+

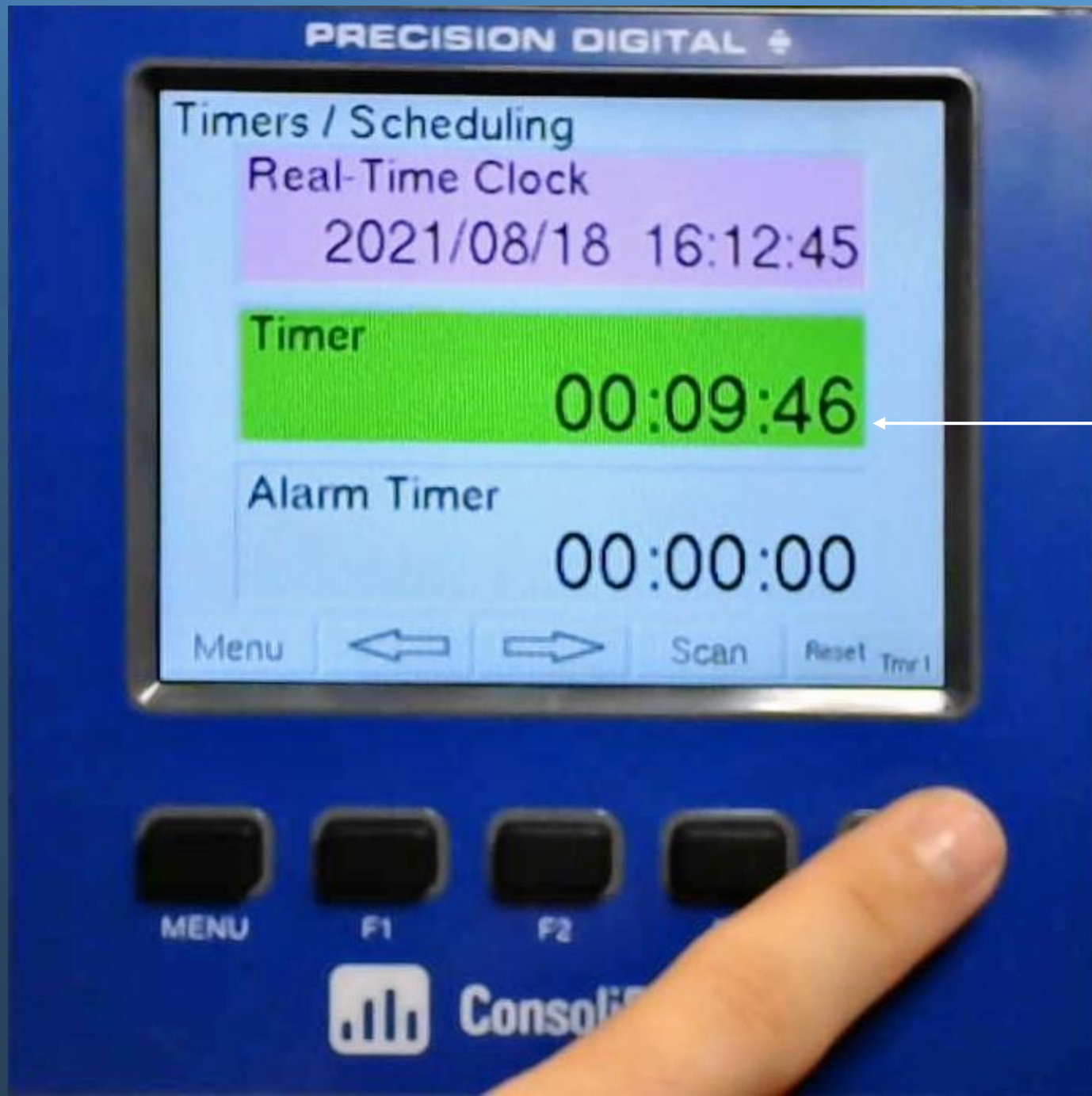
Our FIRST product which features a Real-Time Clock.

You can see that I made this slide at around 4:00 pm EST last Wednesday afternoon....



We also have two "Timers" on this screen.

One is GREEN and is just a timer that counts down FROM 10 minutes when I press the F4 Soft Key....



Once I press the F4 button, the GREEN timer starts counting down from 10 minutes.

Now, we could program it to count UP if we wanted to, or we could use a timer to see how long a certain process takes.

The timers can be triggered by alarms, digital inputs, process conditions, and much more!

PRECISION DIGITAL +

Timers / Scheduling

Real-Time Clock

2021/08/18 16:16:15

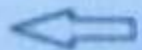
Timer

00:06:16

Alarm Timer

00:00:36

Alert!



Scan

Reset Trn 1



MENU



F1



F2



F3



F4



Consolidator+

Our "Alarm Timer" is triggered by the "Leak Detected?" alarm from a previous screen.

Once we get an alarm, the timer will start counting up from 0

If that timer gets to 30 seconds, it will actually throw ANOTHER alarm that lets someone know there is an alarm condition that is not being taken care of.

If an operator walks away from an overflowing tank in alarm, eventually there will be an even LOUDER alarm letting everyone know the high alarm has been ignored for longer than is acceptable.

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Timers / Scheduling

Real-Time Clock

2021/08/18 16:21:41

Timer

00:00:50

Alarm Timer

00:00:00

Menu



Scan

Reset Tmr 1



MENU



F1



F2



F3



F4



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As soon as our alarm condition is cleared, or the problem is fixed, our "Alarm Timer" will automatically reset back to "0" and will remain that way until the "Leak Detected?" alarm is triggered once again.