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Replacing an ETM with the keypad
Easy retrofit or add to any system

ETMs (elapsed time meters) are important for VFDs, especially in the W&WW industry. They are used to view equipment run times, which is beneficial for scheduling maintenance. The traditional solution is to install a separate ETM on the VFD control panel. While functional, adding a separate ETM to the VFD control panel today adds unnecessary costs since the 580-drive series has an ETM built into the control panel (keypad). The VFD's built in ETM is readily available and non-resettable on the control panel's "home view" and does not require diving deep into the VFD parameters. The ETM is flexible and shows hours, days of running, or how long the VFD has been powered. This document is applicable for ACH580, ACQ580, and ACS580 drives and will show how to setup the ETM on the keypad's home screen.

Accessing and setting up the ETM on the keypad (control panel) home screen

The ETM functionality is accessed on the control panel by selecting the following:

> Options > Edit Home view > Select Screen Location to insert ETM > Edit > Parameter > Other > 05 Diagnostics > 05.03 Hours run (hours)

Refer to the control panel screen shots below for step-by-step instructions to access the different ETM parameters. Note: the example below is from an ACQ580 drive, the steps are identical for the ACH580 and ACS580 drives. This run-time counter is non-resettable.

Steps for setting up 05.03 Hours run (hours)
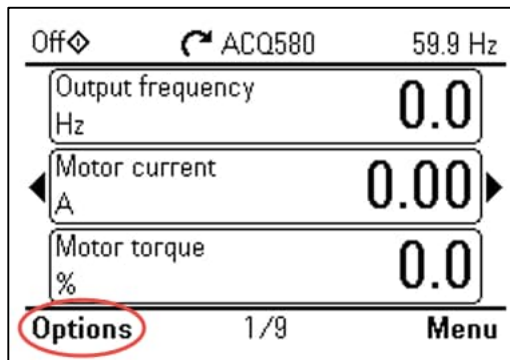
Figure 1

1. Open Options

From the Home view, press the left softkey to open Options.

See Figure 1.

```
Off◇        ↻ ACQ580      59.9 Hz
Options ─────────────────
 Reference                    ▶
 Select drive                 ▶
 Edit Home view               ▶
 Active faults
 Active warnings
─────────────────────────
Exit                    Select
```
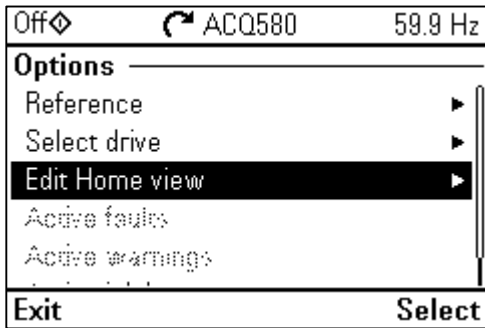Figure 2

2. Navigate to Edit Home view

Press the down arrow key to navigate to Edit Home view and press the right softkey to select Edit Home view. See Figure 2.
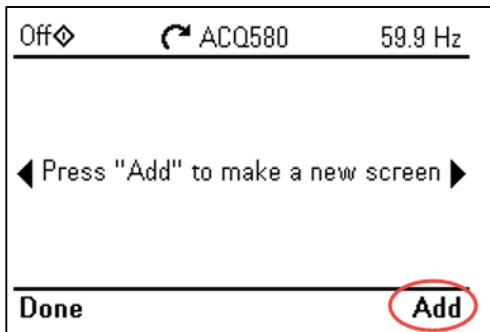
```
Off◇        ↻ ACQ580      59.9 Hz




◀ Press "Add" to make a new screen ▶



─────────────────────────
Done                      Add
```
Figure 3

3. Select panel home screen to display ETM

Press the left or right arrow keys to select the panel home screen where the ETM is to be displayed and then press the Add using the right softkey. See Figure 3.

Note: up to three parameters can be displayed per panel home screen. See Figure 1.
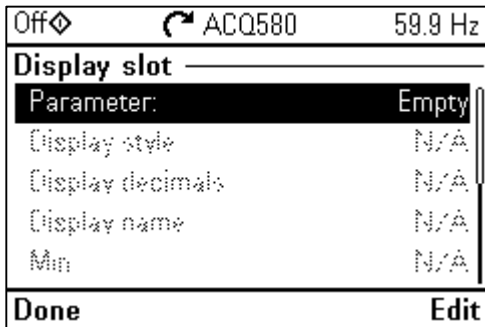
```
Off◇        ↻ ACQ580      59.9 Hz
Display slot ────────────
 Parameter:              Empty
 Display style             N/A
 Display decimals          N/A
 Display name              N/A
 Min                       N/A
─────────────────────────
Done                     Edit
```
Figure 4

4. Select Parameter

Press Edit using the right softkey. See Figure 4.

```
Off◇        ↻ ACQ580      59.9 Hz
Parameter ───────────────
  45.02 Saved MW hours
  45.01 Saved GW hours
  45.09 CO2 reduction in tons
  45.10 Total saved CO2
 Other
─────────────────────────
Cancel                  Select
```
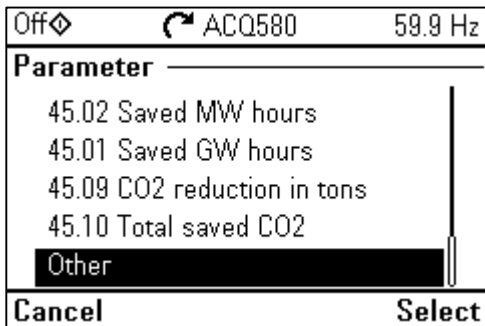Figure 5

5. Navigate to Other

Press the down arrow key to navigate to Other and press the right softkey. See Figure 5.

```
Off◇        ↻ ACQ580      59.9 Hz
Parameter
 01 Actual values           ▶ ▯
 03 Input references         ▶
 04 Warnings and faults      ▶
 05 Diagnostics              ▶
 06 Control and status words ▶
Cancel                    Select
```
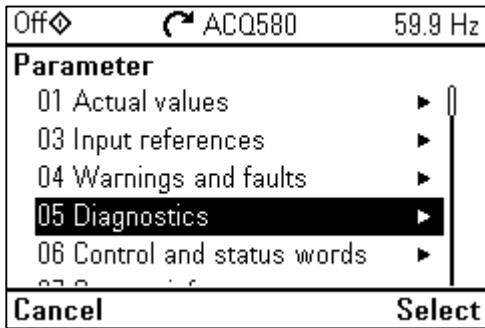
Figure 6

6. Navigate to Parameter 05 Diagnostics

Press the down arrow key to navigate to 05 Diagnostic and press the right softkey to Select this parameter. See Figure 6.

```
Off◇        ↻ ACQ580      59.9 Hz
Parameter
 05.01 On-time counter
 05.02 Run-time counter
 05.03 Hours run
 05.04 Fan on-time counter
 05.10 Control board temperature
Cancel                    Select
```
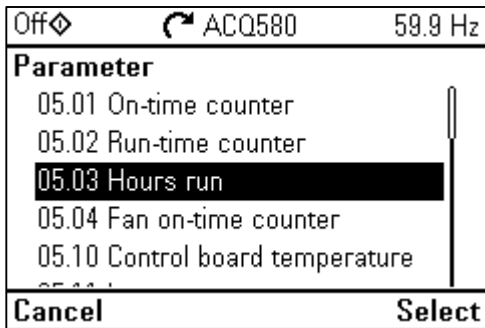
Figure 7

7. Navigate to Parameter 05.03 Hours run

Press the down arrow key to navigate to 05.03 Hours run and press the right softkey to Select this parameter. See Figure 7.
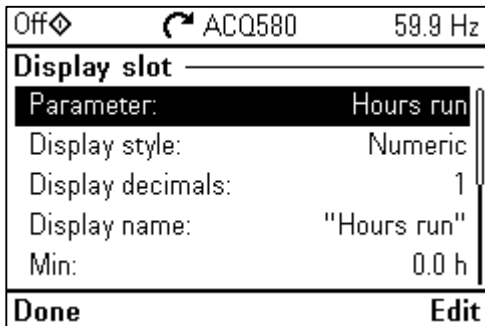
```
Off◇        ↻ ACQ580      59.9 Hz
Display slot ─────────────
 Parameter:           Hours run
 Display style:        Numeric
 Display decimals:           1
 Display name:      "Hours run"
 Min:                    0.0 h
Done                       Edit
```

Figure 8

8. Select Done

Press Done using the left softkey. See Figure 8. The Hours run is now shown in the Parameter line.

```
Off◇        ↻ ACQ580      59.9 Hz
 Hours run

             6.1
              h
 0.0                   999999.9

Options      8/11        Menu
```
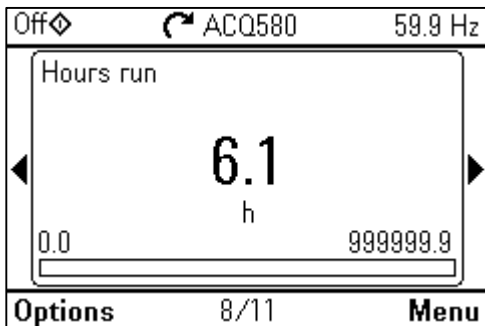
Figure 9

9. Navigate to the Run-time counter home screen

Press either the left or right keys to navigate to the Hours run counter home screen. See Figure 9.

The Hour run counter displays the number of hours the VFD has powered the motor.

Note: the run counters can also be displayed in the number of days the VFD has powered the motor by selecting 05.02 Run-time counter (days) in step 7 above.

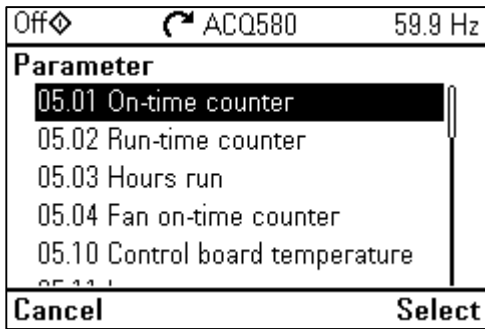Steps for setting up 05.01 Powered or On-time counter

Figure 10

10. Navigate to Parameter 05.01 On-time counter

Follow steps 1 through 6 from above. Press the down arrow key to navigate to 05.01 Hours run and press the right softkey to Select this parameter. See Figure 10.
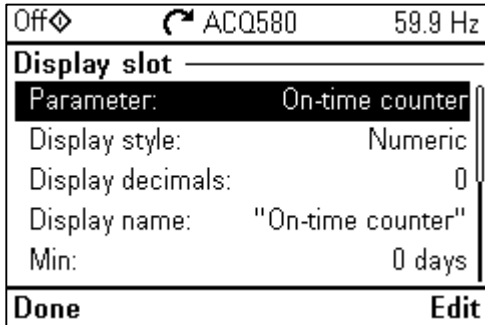

Figure 11

11. Select Done

Press Done using the left softkey. The On-time counter is now shown in the Parameter line. See Figure 11.
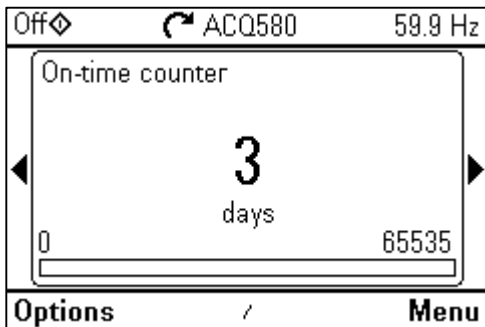

Figure 12

12. Navigate to the On-time counter home screen

Press either the left or right keys to navigate to the On-time counter home screen. See Figure 12.

The On-time counter displays the number of days the VFD has powered.

Advantages of using the built-in ETM

Adding a separate ETM to a panel adds unnecessary costs to the panel including wiring and a relay (see Figure 13). An advantage of using the VFD keypad for the ETM, is that the run time information can be communicated through a SCADA system as opposed to using a separate ETM which cannot communicate without providing additional ancillary equipment. Also, the ETM screen can easily be added on the keypad VFD panel which did not have a separate ETM built into the panel.
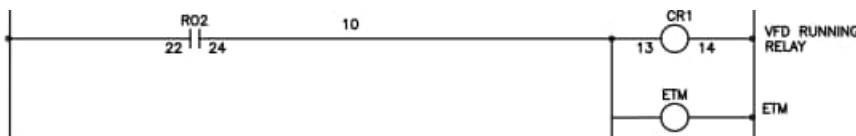

Figure 13

In summary, the 580 drives series keypad can be used to replace a separately mounted ETM on the VFD panel. The

keypad counters can quickly be setup to show three different counters which include the motor run time in days, the motor run time in hours, and how long the VFD has been powered for in days. This information can be beneficial for scheduling maintenance. While functional, adding a separate ETM to the VFD control panel adds unnecessary costs since the 580-drive series has it built into the keypad.