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Title	Optidrive Elevator Read Only Status Parameters

Summary	This document gives information on the Optidrive Elevator read only status parameters

NOTE: Please read in conjunction with the Optidrive Elevator User Guide.

Overview

The Optidrive Elevator has a number of read only status parameters which can be used for monitoring and an aid to fault finding within the system.

The read only parameters can be views in parameter set P0-XX.

Set P1-14 to 101 to access P0-01 to P0-49 or P1-14 to 201 to access P0-01 to P0-80.

The table below shows the most useful read only status parameters. Please see the Elevator User Guide for other read only status parameters.

Parameter	Description	Explanation
P0-01	Analogue input 1 value (%)	0 to 10V / 4 to 20mA = 0 to 100%
P0-02	Analogue input 2 value (%)	0 to 10V / 4 to 20mA = 0 to 100%
P0-03	Digital input status	Displays the status of the digital inputs
P0-04	Analogue Speed ref input (Hz/RPM)	Pre-ramp speed reference in Hz or RPM if P-10>0
P0-06	keypad Speed ref input (Hz/RPM)	Keypad speed reference in Hz or RPM if P-10>0
P0-08	PID reference (%)	Displays the set-point input signal to the PID controller (0 to 100%)
P0-09	PID feedback (%)	Displays the feedback input signal to the PID controller (0 to 100%)

Parameter	Description	Explanation
P0-10	PID controller output (%)	Displays the output of the PID controller (0 to 100%)
P0-11	Applied motor voltage (VAC)	Displays the RMS voltage being applied to the motor
P0-13	Trip log	Displays the 4 most recent trips with time stamp
P0-16	DC bus voltage ripple (VDC)	Measured DC bus voltage ripple
P0-17	Motor stator resistance	Displays the measured motors stator resistance providing an autotune has been carried out successfully
P0-20	DC Bus voltage (VDC)	Displays the drives internal DC bus voltage
P0-21	Heatsink temperature (^{o}C)	Displays the drives internal heatsink temperature
P0-26	kWh meter	Shows resettable and non-resettable kWh values
P0-27	MWh meter	Shows resettable and non-resettable MWh values
P0-28	Software version & checksum	Displays the drives control processor and power stage processor software versions and checksum
P0-29	Drive type identifier	Displays the drive rating, frame size, voltage output phases
P0-30	Drive serial number	Displays the drives unique 11 digit serial number
P0-31	Run time since date of manufacture	Displays the run time since date of manufacture. This parameter is not affected by setting factory defaults.
P0-64	Actual switching frequency	Displays the drives actual switching frequency (See P0-21)
P0-72	Internal drive temperature	Internal drive ambient temperature in ^{o}C.
P0-74	L1 input phase voltage (VAC)	Displays the supply input voltage on L1
P0-75	L2 input phase voltage (VAC)	Displays the supply input voltage on L2
P0-76	L3 input phase voltage (VAC)	Displays the supply input voltage on L3

P0-01 & P0-02 – Analogue input 1 & 2 value

P0-01 & P0-02 display the value of the analogue inputs (terminal 6 and 10) as a percentage of the input.

0 to 10V: 0V = 0%, 10V = 100%

4 to 20mA: 4mA = 0%, 20mA = 100%

0 to 20mA: 0mA = 0%, 20mA = 100%

P0-03 – Digital input status

P0-03 indicates the status of the digital inputs.

As default with no terminals connected, P0-03 will show **00000**. This means terminals are inactive.

When a digital input is active, the individual digits will show a logic 1.

00000 / **1**0000 - The left hand digit shows the status of digital input 1 – terminal 2

0**0**000 / 0**1**000 - The 2nd digit shows the status of digital input 2 – terminal 3

000**0**0 / 001**1**0 - The 3rd digit shows the status of digital input 3 – terminal 4

0000**0** / 0001**0** - The 4th digit shows the status of digital input 4 – terminal 6

0000**0** / 0000**1** - The right hand digit shows the status of digital input 5 – terminal 10

Note: Terminal 6 and terminal 10 can be both digital and analogue inputs depending on the setting of parameter P1-13.

P0-04 – Pre-ramp reference (analogue reference)
P0-04 displays the analogue speed reference before the acceleration or deceleration ramps are applied to it. The speed reference maybe from an analogue input or preset speed etc.

P0-05 – Pre-ramp reference (keypad reference)
P0-05 displays the keypad speed reference before the acceleration or deceleration ramps are applied to it.

P0-08 – PID controller reference
P0-08 displays the value of the PID controller reference as a %.
This parameter becomes active when the PI controller is enabled by setting P1-12 = 5.
See MCW Knowledge Base document MCW-ECO-009 for information on the ECO PID controller set up.

P0-09 – PID controller feedback
P0-09 displays the value of the PID controller feedback as a %.
This parameter becomes active when the PI controller is enabled by setting P1-12 = 5.
See MCW Knowledge Base document MCW-ECO-009 for information on the ECO PID controller set up.

P0-10 – PID controller output
P0-10 displays the value of the PID controller output as a %.
This parameter becomes active when the PI controller is enabled by setting P1-12 = 5.
See MCW Knowledge Base document MCW-ECO-009 for information on the ECO PID controller set up.

P0-11 – Applied motor voltage (VAC rms)
P0-11 displays the value of motor voltage that is being outputted by the drive and applied to the motor terminals.

P0-13 – Trip log
P0-13 displays the drives 4 most recent trips with the newest trip first and oldest trip last.
This parameter can also display the run time stamp when the drive tripped.
When P0-13 is accessed, the display will show the newest trip. Press the UP button to display later trips. When older trips are displayed, decimal points on the display will flash to show which trip is being displayed.

Last trip – no decimal points flashing
2nd last trip – 1 decimal point flashing
3rd last trip – 2 decimal points flashing
Oldest trip – 3 decimal points flashing

To show the trip time stamp, access the trip required and press the UP and DOWN buttons together. When the UP and DOWN buttons are pressed, the display will show the time stamp in Hours. To display the time stamp Minutes – Seconds, press the UP button. To return to the trip log, press the UP and DOWN buttons together.

P0-16 – DC bus voltage ripple

P0-16 displays the ECOs internal DC bus ripple voltage (Only applicable to 3 phase input drives).
The drive monitors the voltage ripple on the drives internal DC bus in conjunction with the input phase loss circuitry to protect the drive in the event of one input phase being lost.
With one input phase missing with no motor load, the DC ripple is very small. As the motor load increases, the DC bus ripple will increase. At approx. 50% motor load, the DC bus ripple will increase above the trip threshold and the drive will trip on **FLt-dc** - DC bus ripple too high trip.
Possible causes of **FLt-dc** trips are a faulty circuit breaker, blown fuse or a voltage in-balance between supply phases.

P0-17 – Motor stator resistance

P0-17 displays the motor stator resistance in ohms providing an autotune has been carried out successfully.

P0-20 – DC bus voltage

P0-20 displayed the drives internal DC bus voltage. The DC bus voltage is internally filtered within the ECO so this parameter may not display fast transient rises in DC bus voltage.
The DC bus voltage can be calculated from: AC input voltage x $\sqrt{2}$

P0-21 – Heatsink temperature (^{o}C)

P0-21 displays the drives heatsink temperature in ^{o}C.
The heatsink temperature is used to automatically reduce the drives switching frequency (P2-24) in order to try to stop the drive tripping on heatsink over-temperature. P0-64 displays the actual switching frequency if the switching frequency has been reduced.
If the switching frequency has been reduced to the minimum and the heatsink temperature reaches 95^{o}C, the drive will trip on **O-t** – heatsink over-temperature.

P0-26 – kWh (KiloWatt hours)

P0-26 displays the kWh consumed by the drive.
When P0-26 is accessed, the resettable kWh meter is displayed. Press the UP button to show the non-resettable kWh meter.

P0-27 – MWh (MegaWatt hours)

P0-27 displays the MWh consumed by the drive.
When P0-27 is accessed, the resettable MWh meter is displayed. Press the UP button to show the non-resettable MWh meter.

NOTE: The resettable kWh & MWh meters are reset by P6-23.

P0-28 – Software versions and checksums

P0-28 displays the drives control processor and power processor software versions and checksums. When P0-28 is accessed, the display will show the control software version. The left hand side of the display will show a '1' to indicate control software. Press the UP button to show the control software checksum. Press the UP button again to show the power processor software version. The left hand side of the display will show a '2' to indicate power software. Press the UP button again to show the power software checksum.

P0-29 – Drive type identifier

Displays the drive rating, frame size, voltage output phases.
When P0-29 is accessed, the drive kW rating is displayed.
Press the UP button to display the frame size and voltage rating.
Press the UP button again to display the number of output phases (1P-out or 3P-out).

P0-30 – Drive serial number

P0-30 displays the drives unique 11 digit serial number.
When P0-30 is accessed, the first 6 digits of the serial number are displayed. Press the UP button to show the last 5 digits of the serial number.

P0-31 – Run time since date of manufacture

P0-31 displays the drives run time since date of manufacture in Hours – Minutes – Seconds. This is the time the drive has been enabled/running and not the power up time. (P0-65 displays the power up time).
When P0-31 is accessed, the display will show run time in hours. Press the UP button to show Minutes and Seconds.

P0-64 – Actual switching frequency

P0-64 displays the actual switching frequency. See P0-21 – Heatsink temperature.

P0-72 – Internal drive temperature

P0-72 displays the drives internal ambient temperature in ^{o}C. If the drives internal ambient temperature increases about the trip level, the drive will trip on **O-hEAt**.

P0-74 – L1 input phase voltage

P0-74 displays L1 input phase voltage in VAC

P0-75 – L2 input phase voltage

P0-75 displays L2 input phase voltage in VAC

P0-76 – L3 input phase voltage

P0-76 displays L3 input phase voltage in VAC