Application Note
AC Drives
AN2010
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Keypad Status Codes – Compact Display

The Status Codes displayed on the KI-Compact Display or KI-Remote Keypad show the active status of the drive while under normal operating conditions (i.e. no alarm and no trip).
Recall that there are two different keypads potentially used with Digitax HD.

KI-Compact

KI-Remote Keypad

The table to the right shows the Status Codes that can be displayed when using the KI-Compact Display. The Decimal Point in the compact display also indicates some status detail Illuminated constantly when accessing the SD Card. Flashing if the drive has an active alarm.

Display character	Drive status LED	Description	Drive output stage
n	Non flashing (RED)	Inhibit state	Disabled
C	Flashing (RED)	Communications to drive lost for > 10 seconds	N/A
r	Non flashing (RED)	Ready state	Disabled
A	Non flashing (RED)	Under the following status indicators: Stop Scan Run Supply Loss Deceleration DC injection Position Active Heat Phasing	Enabled
U	Non flashing (RED)	Under voltage	Disabled

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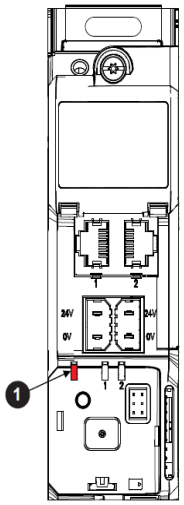
When using the KI-Remote Keypad, the display shows a text string on the upper row indicating the active status, rather than a single character.
The table here shows the possible Status strings that may appear under normal operating conditions.

Upper row string	Description	Drive output stage
Inhibit	The drive is inhibited and cannot be run. The Safe Torque Off signal is not applied to Safe Torque Off terminals or Pr **06.015** is set to 0.	Disabled
Ready	The drive is ready to run. The drive enable is active, but the drive inverter is not active because the final drive run is not active.	Disabled
Stop	The drive is stopped / holding zero speed.	Enabled
Run	The drive is active and running.	Enabled
Scan	The drive is enabled in Regen mode and is trying to synchronize to the supply.	Enabled
Supply Loss	Supply loss condition has been detected.	Enabled
Deceleration	The motor is being decelerated to zero speed / frequency because the final drive run has been deactivated.	Enabled
dc injection	The drive is applying dc injection braking.	Enabled
Position	Positioning / position control is active during an orientation stop.	Enabled
Trip	The drive has tripped and no longer controlling the motor. The trip code appears in the lower display.	Disabled
Active	The regen unit is enabled and synchronized to the supply.	Enabled
Under Voltage	The drive is in the under voltage state either in low voltage or high voltage mode.	Disabled
Heat	The motor pre-heat function is active.	Enabled
Phasing	The drive is performing a 'phasing test on enable'.	Enabled

In the event that the drive has no display or keypad equipped, then there is still some very basic status information available via the Drive Status LED.
Under normal status (no alarms, no trips), the drive Status LED will be solid (non-flashing).



During operation, there are some conditions that will put the drive into an alarm state. In the alarm state, the drive will continue to run either normally, or in some reduced performance capacity (depending on the alarm).

If an alarm is active, the KI-Remote Keypad will alternate between the normal status string and the alarm string on the top row of the display. Additionally, an alarm symbol will appear on the right side of the display.

If no action is taken to eliminate the alarm condition, then depending on the specific alarm, the drive may eventually trip.

Note that Alarm strings are not displayed while the keypad is editing a parameter, but the Alarm symbol will always be visible.

The table to the right shows the Alarm Codes that can appear on the KI-Remote Keypad.

Alarm string	Description
Brake Resistor	Brake resistor overload. *Braking Resistor Thermal Accumulator* (10.039) in the drive has reached 75.0 % of the value at which the drive will trip.
Motor Overload	*Motor Protection Accumulator* (04.019) in the drive has reached 75.0 % of the value at which the drive will trip and the load on the drive is > 100 %.
Ind Overload	Regen inductor overload. *Inductor Protection Accumulator* (04.019) in the drive has reached 75.0 % of the value at which the drive will trip and the load on the drive is > 100 %.
Drive Overload	Drive over temperature. *Percentage Of Drive Thermal Trip Level* (07.036) in the drive is greater than 90 %.
Auto Tune	The autotune procedure has been initialized and an autotune in progress.
Limit Switch	Limit switch active. Indicates that a limit switch is active and that is causing the motor to be stopped.

If a trip activates on Digitax HD, then it will be displayed on either the KI-Compact Display or KI-Remote Keypad.

If the drive is equipped with a KI-Compact Display when the trip occurs, the trip will be displayed according to the table to the right.

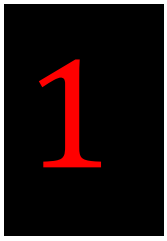
‘E’ represents and normal drive trip

‘HF’ represents a hardware fault

Since the Compact Display can only show a single character, the trip code will be scrolled on the display one character at a time as seen here.

Display character	Trip code	Separator	Sub-trip code
	Range 1 to 254		Range 1 to 65535
	Range 1 to 99		

Example: An Encoder 3 trip (Code 191) with subtrip code 1, would appear as follows:



If the drive is equipped with a KI-Remote Keypad when the trip occurs, then the keypad will show ‘Trip’ in the upper row of the display, followed by the trip name string in the lower row.

Some trips have a sub-trip number to provide additional information about the trip.

If a trip has a sub-trip number, the sub-trip number is flashed alternately with the trip string unless there is space on the second row for both the trip string and the sub-trip number in which case both the trip string and sub-trip information is displayed separated by a decimal place.

The table shows the possible trip strings along with their associated trip numbers

No	Trip	No	Trip	No	Trip
1	Reserved 001	95	Reserved 95	195	Encoder 7
2	Over Volts	96	User Prog Trip	196	Encoder 8
3	OI ac	97	Data Changing	198	Phasing Error
4	OI Brake	98	Out Phase Loss	199	Destination
5	PSU	99	CAM	200	Slot1 HF
6	External Trip	100	Reset	201	Slot1 Watchdog
7	Over Speed	101	OHt Brake	202	Slot1 Error
8	Inductance	102	Reserved 102	203	Slot1 Not Fitted
9	PSU 24V	104 - 108	Reserved 104 - 108	204	Slot1 Different
10	Th Brake Res	109	OI dc	205	Slot2 HF
11	Autotune 1	110	Undefined	206	Slot2 Watchdog
12	Autotune 2	111	Configuration	207	Slot2 Error
13	Autotune 3	112 - 159	User Trip 112 - 159	208	Slot2 Not Fitted
14	Autotune 4	161	User Trip 161	209	Slot2 Different
15	Autotune 5	162	Encoder 12	210	Slot3 HF
16	Autotune 6	163	Encoder 13	211	Slot3 Watchdog
17	Autotune 7	164 - 168	Reserved 164 - 168	212	Slot3 Error
18	Autotune Stopped	170 - 173	Reserved 170 - 173	213	Slot3 Not Fitted
19	Brake R Too Hot	174	Card Slot	214	Slot3 Different
20	Motor Too Hot	175	Card Product	215	Option Disable
21	OHt Inverter	176	Name Plate	216	Slot App Menu
22	OHt Power	177	Card Boot	217	App Menu Changed
23	OHt Control	178	Card Busy	218	Temp Feedback
24	Thermistor	179	Card Data Exists	220	Power Data
25	Th Short Circuit	180	Card Option	221	Stored HF
26	I/O Overload	181	Card Read Only	222	Reserved 222
27	OHt dc bus	182	Card Error	224	Drive Size
28	An Input Loss 1	183	Card No Data	225	Current Offset
30	Watchdog	184	Card Full	226	Soft Start
31	EEPROM Fail	185	Card Access	227	Sub-array RAM
32	Phase Loss	186	Card Rating	228 - 246	Reserved 228 - 246
33	Resistance	187	Card Drive Mode	247	Derivative ID
34	Keypad Mode	188	Card Compare	248	Derivative Image
35	Control Word	189	Encoder 1	249	User Program
36	User Save	190	Encoder 2	255	Reset Logs
37	Power Down Save	191	Encoder 3		
40 -89	User Trip 40 - 89	192	Encoder 4		
90	Power Comms	193	Encoder 5		
92	OI Snubber	194	Encoder 6		