

Class	Subclass	Name	Type	Min	Max	Default	Unit
Protections	OTD	Threshold	I2	−400	1500	600	0.1°C
Protections	OTD	Delay	U1	0	255	2	s
Protections	OTD	Recovery	I2	−400	1500	550	0.1°C

3.7.3 Undertemperature in Charge Protection

The device has an undertemperature protection for cells in charge direction (that is, with *BatteryStatus[DSG] = 0*).

Status	Condition	Action
Normal	<i>Temperature()</i> > UTC:Threshold OR not charging	<i>SafetyAlert()[UTC]</i> = 0
Alert	<i>Temperature()</i> ≤ UTC:Threshold AND charging	<i>SafetyAlert()[UTC]</i> = 1
Trip	<i>Temperature()</i> ≤ UTC:Threshold AND Charging for UTC:Delay duration	<i>SafetyAlert()[UTC]</i> = 0 <i>SafetyStatus()[UTC]</i> = 1 <i>OperationStatus()[XCHG]</i> = 1
Recovery	<i>SafetyStatus()[UTC]</i> AND <i>Temperature()</i> ≥ UTC:Recovery	<i>SafetyStatus()[UTC]</i> = 0 <i>OperationStatus()[XCHG]</i> = 0

Class	Subclass	Name	Type	Min	Max	Default	Unit
Protections	UTC	Threshold	I2	−400	1500	0	0.1°C
Protections	UTC	Delay	U1	0	255	2	s
Protections	UTC	Recovery	I2	−400	1500	50	0.1°C

3.7.4 Undertemperature in Discharge Protection

The device has an undertemperature protection for cells in DISCHARGE state (that is, non-charging state with *BatteryStatus[DSG] = 1*).

Status	Condition	Action
Normal	<i>Temperature()</i> > UTD:Threshold OR charging	<i>SafetyAlert()[UTD]</i> = 0
Alert	<i>Temperature()</i> ≤ UTD:Threshold AND Not charging (that is, <i>BatteryStatus[DSG] = 1</i>)	<i>SafetyAlert()[UTD]</i> = 1
Trip	<i>Temperature()</i> ≤ UTD:Threshold AND Not charging (that is, <i>BatteryStatus[DSG] = 1</i>) for UTD:Delay duration	<i>SafetyAlert()[UTD]</i> = 0 <i>SafetyStatus()[UTD]</i> = 1 <i>OperationStatus()[XDSDG]</i> = 1
Recovery	<i>SafetyStatus()[UTD]</i> AND <i>Temperature()</i> ≥ UTD:Recovery	<i>SafetyStatus()[UTD]</i> = 0 <i>OperationStatus()[XDSDG]</i> = 0

Class	Subclass	Name	Type	Min	Max	Default	Unit
Protections	UTD	Threshold	I2	−400	1500	0	0.1°C
Protections	UTD	Delay	U1	0	255	2	s
Protections	UTD	Recovery	I2	−400	1500	50	0.1°C

3.7.5 Overtemperature FET Protection

The device has an overtemperature protection to limit the FET temperature.

NOTE: This feature is only available when using the bq76930x or bq76940x device: There is only one external TS available in the bq76920 and this is used for cell temperature.