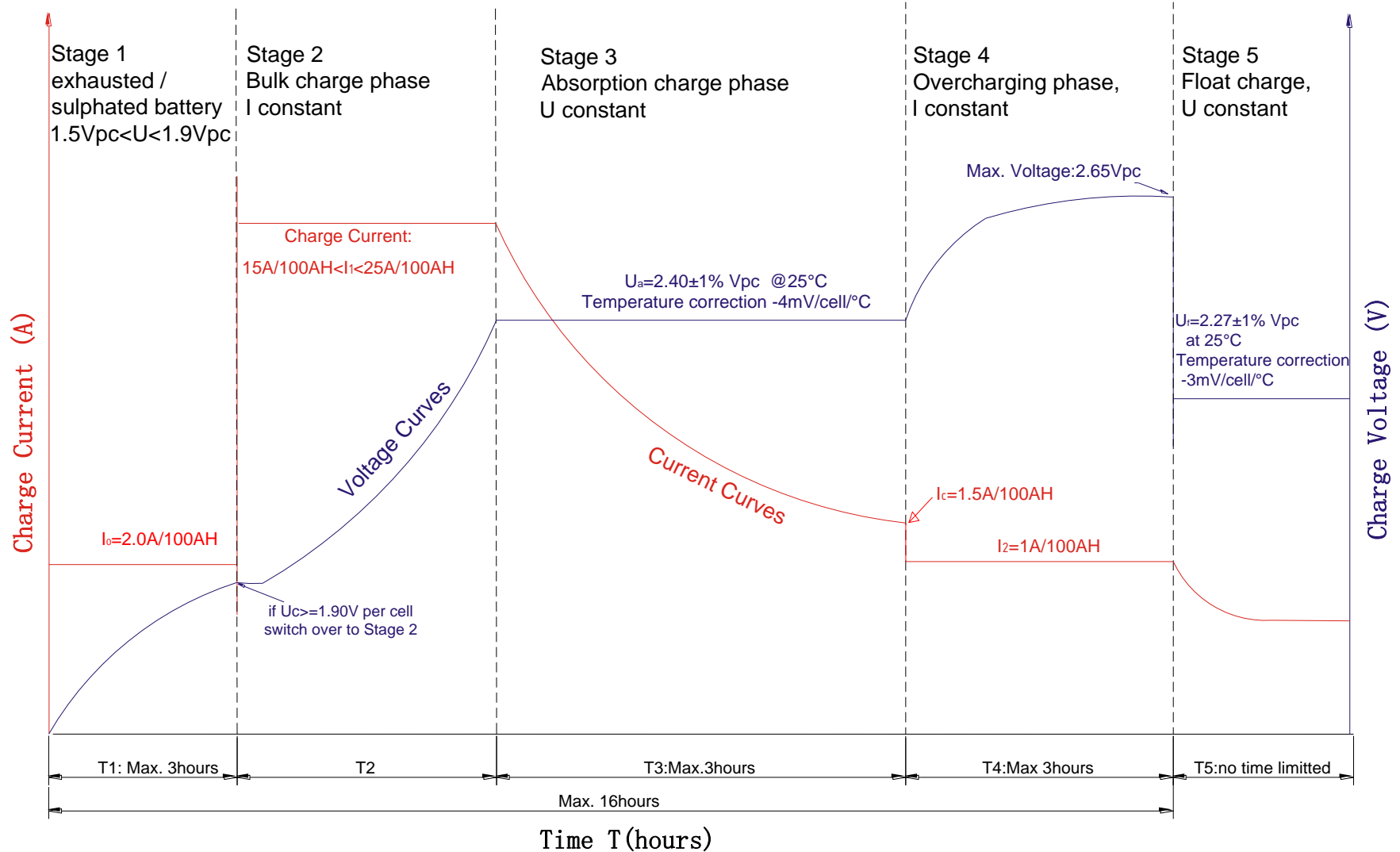


## HTL Sereis Recharge with IUIU Characteristic



## HTLSereis IUIU-Characteristic Referred to 25 °C

Charging phase	Description	Battery Parameters	Charger parameters	Switch over criterion	Switch-off criterion	Comment	Storing, if possible
	Battery failure	$U_{ocv} < 1.5V/C$					
Stage1	exhausted / sulphated battery	$1.5V/C < U_{ocv} < 1.9 V/C$	$I_0 = 2.0 A/100Ah$	$U_c = 1.90V/C$	$T_1 > 3h$	switch over to Stage 2	exhaustive discharges
Stage 2	Bulk charge, I constant		$15A/100Ah < I_1 < 25A/100Ah$	$U_c = 2.40V/C$			
Stage 3	Absorption charge, U constant		$U_c = 2.40V/C$	$I_c = 1.5A/100Ah$			
	Safety shutdown				$T_3 > 3h$	switch over to Stage 4	
Stage 4	overcharging phase, I constant		$I_2 = 1.0A/100Ah$	$T_4 > 3h$		$T_4$ min. 2h at every restart	
	Safety shutdown				$T_1 + T_2 + T_3 + T_4 > 16h$ Max. $U_c = 2.65V/C$		
	Battery full					Switch over to Stage 5	
Stage 5	Floating charge		$U_f = 2.275V/C$			No time limited	