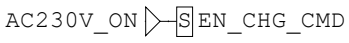
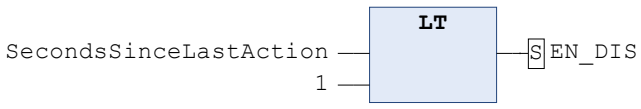
```
FUNCTION_BLOCK BMS_CTRL
VAR_INPUT
    AC230V_ON : BOOL ;
    TimeOut_Seconds : UINT ;
    SecondsSinceLastAction : UDINT ;
    Shutdown : BOOL ;
    DC_Voltage : REAL ;
END_VAR
VAR
    FB_PI_0 : FB_PI := ( i_stPara := ( tCyclTime := TIME#20MS , tTn := TIME#10S0MS , rKp := 0.15 , rMaxLim := 100 ) ) ;
    SR_0 : SR ;
    TON_0 : TON ;
    TON_1 : TON ;
    TON_2 : TON ;
    VoltageSetPoint : REAL ;
    RegOutput1000 : REAL ;
    EN_CHG_CMD : BOOL ;
END_VAR
VAR RETAIN PERSISTENT
    ChargeVoltage : REAL ;
END_VAR
VAR_OUTPUT
    EN_CHG : BOOL ;
    EN_DIS : BOOL ;
    RegOutput : REAL ;
END_VAR
```

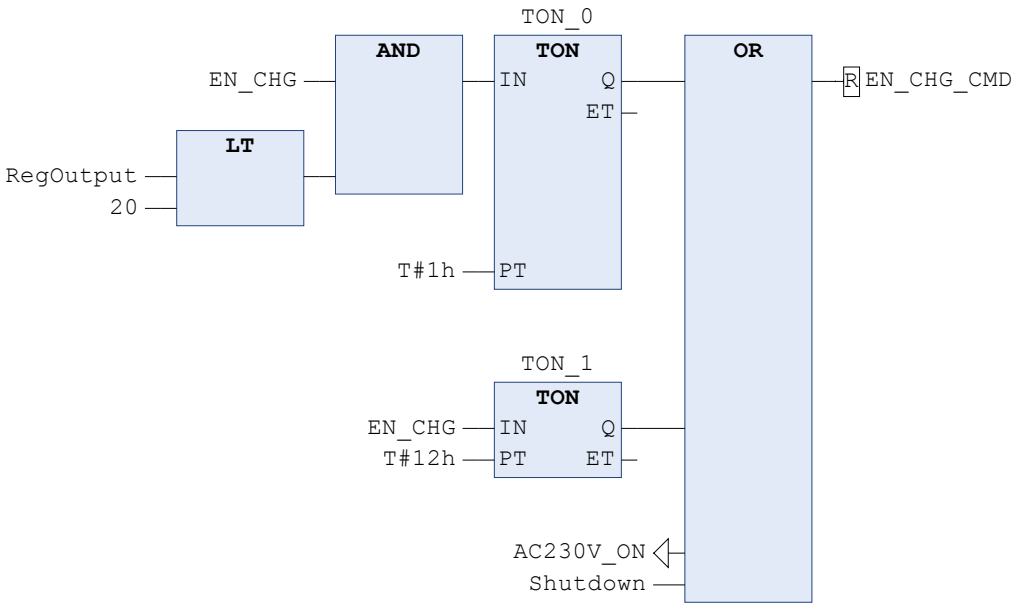
Enables charge automatically when 230V is applied.



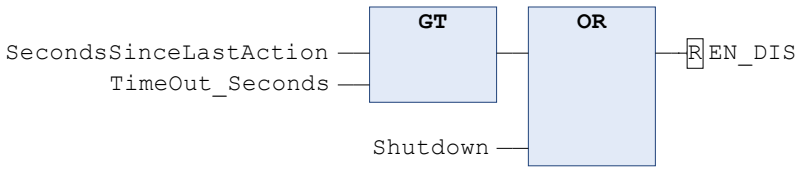
Enables discharge



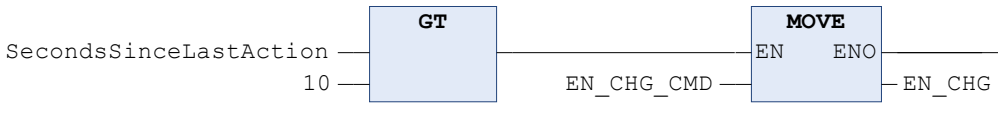
Disables charge



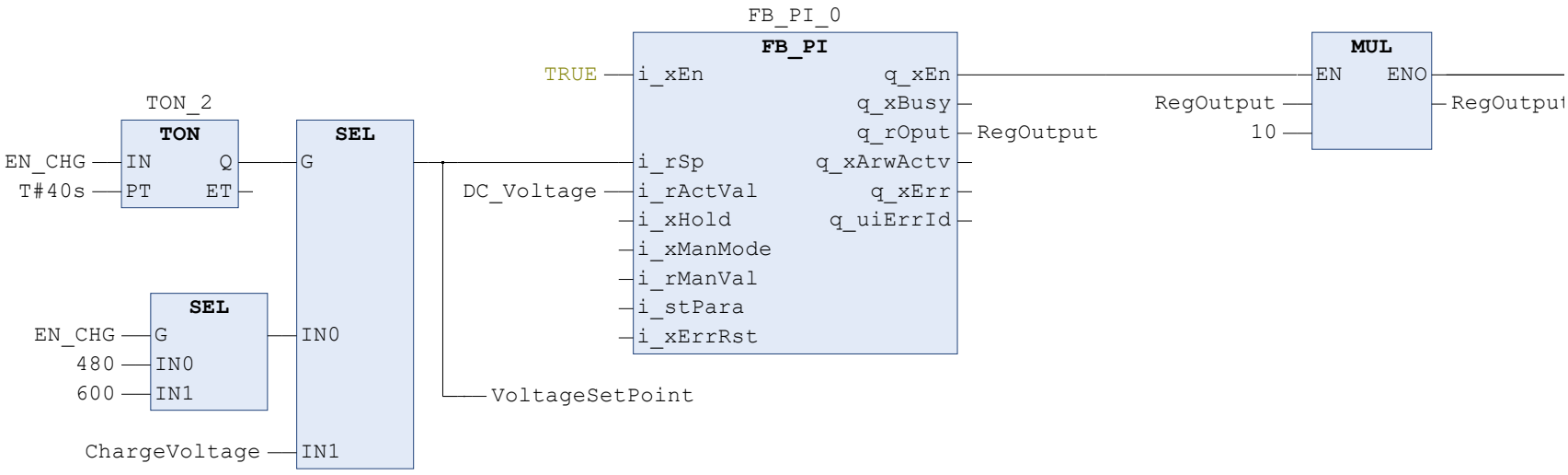
Disables discharge



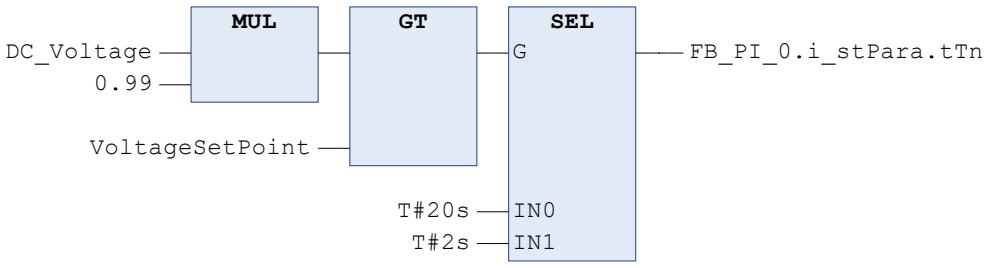
Protection agains contactors in a special case where "Lithium Balance s-BMS" is used, as their BMS control is not designed for "hybrid applications".



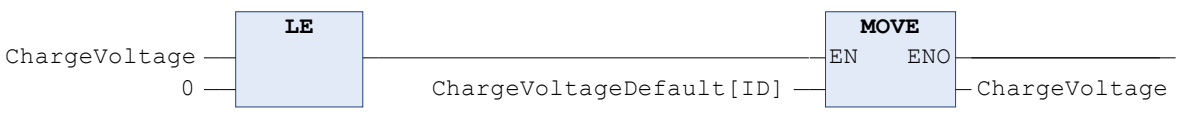
6 *Voltage regulator. When 230V is applied the LED-drivers are used to control the voltage by current control. The voltage is measured by the Variable Frequency Drive.*



7 *Reduces overvoltage by changing the gain when 1% over setpoint.*



8 *Sets the charge voltage if a new program is downloaded and ChargeVoltage is 0.*



t1000