**Robotina d.o.o.**
OIC Hrpelje 38
SI-6240 Kozina
Slovenia

# 1. Hardware

| Code | Description | Quantity | Note |
|---|---|---|---|
| **Basic** | **Required for basic functionality** | | |
| **01_bm-gw** | BTMS IOT Gateway | 1 × BM-GW for up to 32 strings | All strings of one UPS should be on the same BM-GW |
| **02_bm-ss** | BTMS String master | 1 × BM-SS for each string | |
| **03_bm-hs** | BTMS Hall sensor | 1 × BM-HS for each string | Choose the type based on the maximum string current |
| **04_bm-cs** | BTMS Cell sensor | 1 × BM-CS for each battery | Choose 2, 6 or 12 V sensors depending on the battery voltage |
| **05_bm-ps** | BTMS Power supply | 1 × PS-60-24 for each BTMS | One power supply can power several devices, if there are fewer of them than allowed according to thespecification. Checks against the total consumption of powered devices. |
| **05_ps-30-12** | BM-GW Power supply | 1 × PS-30-12 for each BM-GW | |
| **Optional** | **Depending on requirements** | | |
| **06_bm-mc** | BTMS Master controller | 1 × BM-MC for up to 32 strings | |
| **06_bm-c-A1** | BTMS Controller set | 1 × BM-C-A1 for up to 32 strings | Consisting of 06_bm-mc, 07_bm-cad and software |
| **07_bm-cad** | BTMS COM converter | 1 × BM-CAD per BM-HMI | They require BM-MC |
| **07_bm-com** | BTMS COM module | 1 × BM-COM for up to 16 BM-CS | For more than 16 BM-CS (up to 32) use 2nd BM-COM |
| **07_bm-lc** | BTMS IO expansion module | 1 × BM-LC for up to 8 strings | They require BM-MC |
| **08_bm-th** | BTMS Temperature and humidity sensor | 1 × BM-TH for every string | They require BM-MC |
| **08_bm-gs** | BTMS Insulation monitoring sensor | 1 × BM-GS for every string | They require BM-MC and BM-COM |
| **09_bm-hmi** | BTMS Human-Machine Interfaces | 1 × BM-HMI for up to 32 strings | They require BM-C-A1 (BM-MC + BM-CAD), 1 per BM-C-A1 |

| Code | Description | Quantity | Note |
|---|---|---|---|
| **10_bm-ag** | BTMS IOT Aggregator | 1 × BM-AG per Data center | Needed when there are multiple BM-GWs on the Data Center |
| **06_th-mc** | Temperature and humidity monitoring Master controller | 1 × TH-MC for up to 120 temperature-humidity sensors | |
| **06_tm-c-A1** | Temperature and humidity monitoring Controller set | 1 × TH-MC for up to 120 temperature-humidity sensors | Consisting of 06_th-mc, 07_bm-cad and software |

## 1.1. System limitations

| Device | Supports up to |
|---|---|
| BM-AG | unlimited BM-GW |
| BM-GW | 32 × BM-SS, 1 × BM-MC |
| BM-MC | 32 × BM-TH, 4 × BM-LC, 1 × BM-HMI |
| BM-SS | 120 × BM-CS |

## 1.2. Standard cabinets - [[wiki:01_btms:00_hw:05_bm-ps]]