5K3XP

5K3

Production Date: June 2020 – March 2022

5K3XP

Expected Time on the market : March 2022 – March 2025

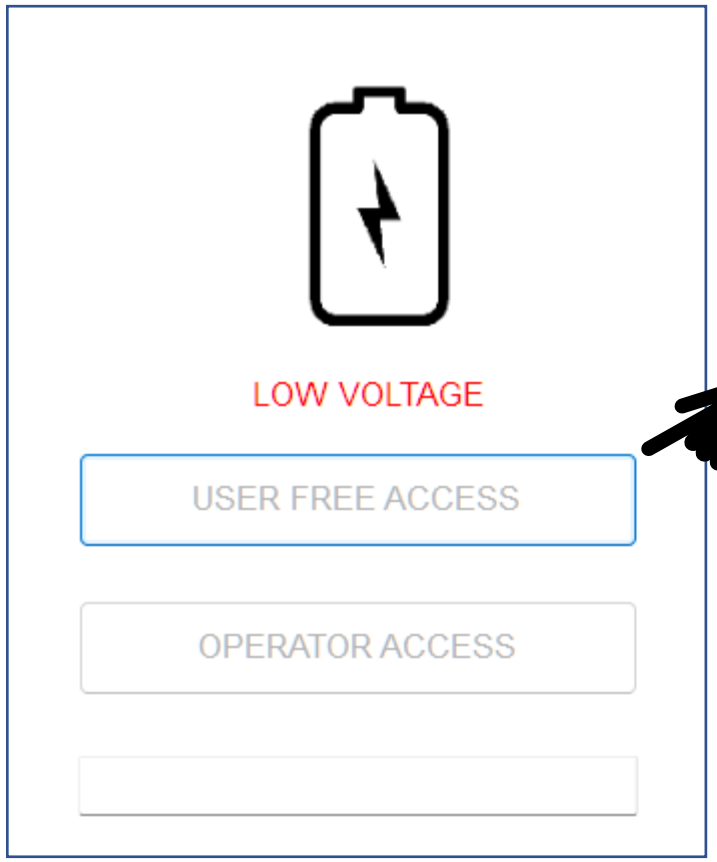
KEY DIFFERENCES BETWEEN 5K3 LV/HV and 5K3-XP

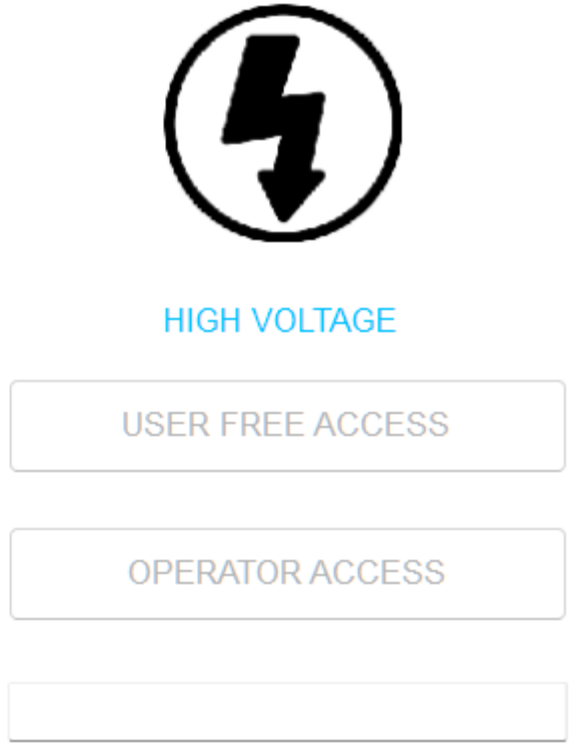
	BMS Power Switch	Dual Voltage	Capacity 105Ah 52Vdc	HV BOX up to 1000Vdc	Single CAN + DI/DO RJ 45 cable	Installation Compatibility LV/HV XP (ADD ON)	BMS New Generation Pulse Equalizer	Whole Cluster FW Upgrade Via Master (LV)	Whole Cluster FW upgrade (HV BOX + Battery) via HV BOX	Calendar Data Logs Accessible in CSV from BMS	WiFi and Bluetooth Inbuilt	LV Parallel 15 modules	Serial Connecti on 16 Modules	HV BOX Start Up 80Vdc (2 Modules)	HV HUB Single Branch Comm (10 in parallel)
5K3	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✓
5K3XP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

1. 5K3XP has a different FW format in **.bin** and cannot be installed onto the old BMS that supports only **.hex** files
2. The **.bin** FW and the **.hex** FW are fully compatible and the communication between XP and LV/HV is granted
3. An existing cluster composed of 5K3LV/HV can be expanded by using 5K3XP following certain rules.
4. A mixed cluster cannot be monitored remotely via WiFi APP
5. The new Generation BMS of the 5K3-XP can be used as a replacement part of the BMS that equips the 5K3LV/HV
6. 5K3XP needs to be monitored and programmed with new PC software, the software has the same interface and functionality as the 5K3LV/HV software.

WECO Software

5K3XP PC Software – LV applications





Overview | ParallelOverview | Save & Exit

WECO

Status Of Charge: ---%

Status: ---

Instant Power: ---kW

Charging Time: ---	Battery Voltage: ---	Modules Connected: ---
Discharging Time: ---	Current: ---	Modules Delta SOC: ---
Standby Time: ---	Cell Delta Voltage: ---	Modules Delta Temp: ---
Charge Energy : ---	Inverter protocol: ---	COM Port:
Discharge Energy: ---	BMS Version: ---	Connect : CONNECT
Energy Cycles: ---	Firmware Version: ---	Status:

Search New Firmware | Load Firmware

Overview | ParallelOverview | Save & Exit

Parallel Data

System Power: ---
Max Voltage: ---
System Voltage Difference: ---
Max temp °C: ---
System Charge Current Sent: ---
System SOC: ---
Min Voltage: ---
System Voltage: ---
Min Temp °C: ---
System Discharge Current Sent: ---
Modules Connected: ---

Master

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave1

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave2

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave3

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave4

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave5

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Discharge Time: 0
Capacity(AH): 0
0
Main Contactor:

Slave6

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave7

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave8

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave9

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave10

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave11

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave12

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave13

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Slave14

Voltage(V): 0
Current(A): 0
Max Cell(V): 0
Min Cell(V): 0
Max Temp(°C): 0
Min Temp(°C): 0
Capacity(AH): 0
0
Main Contactor:

Overview | ParallelOverview | Save & Exit

Save Log as XLS files and exit PC Program: Save Exit

If the PC Program exit abnormal,the csv file can transfer to xls file:

Import csv file:

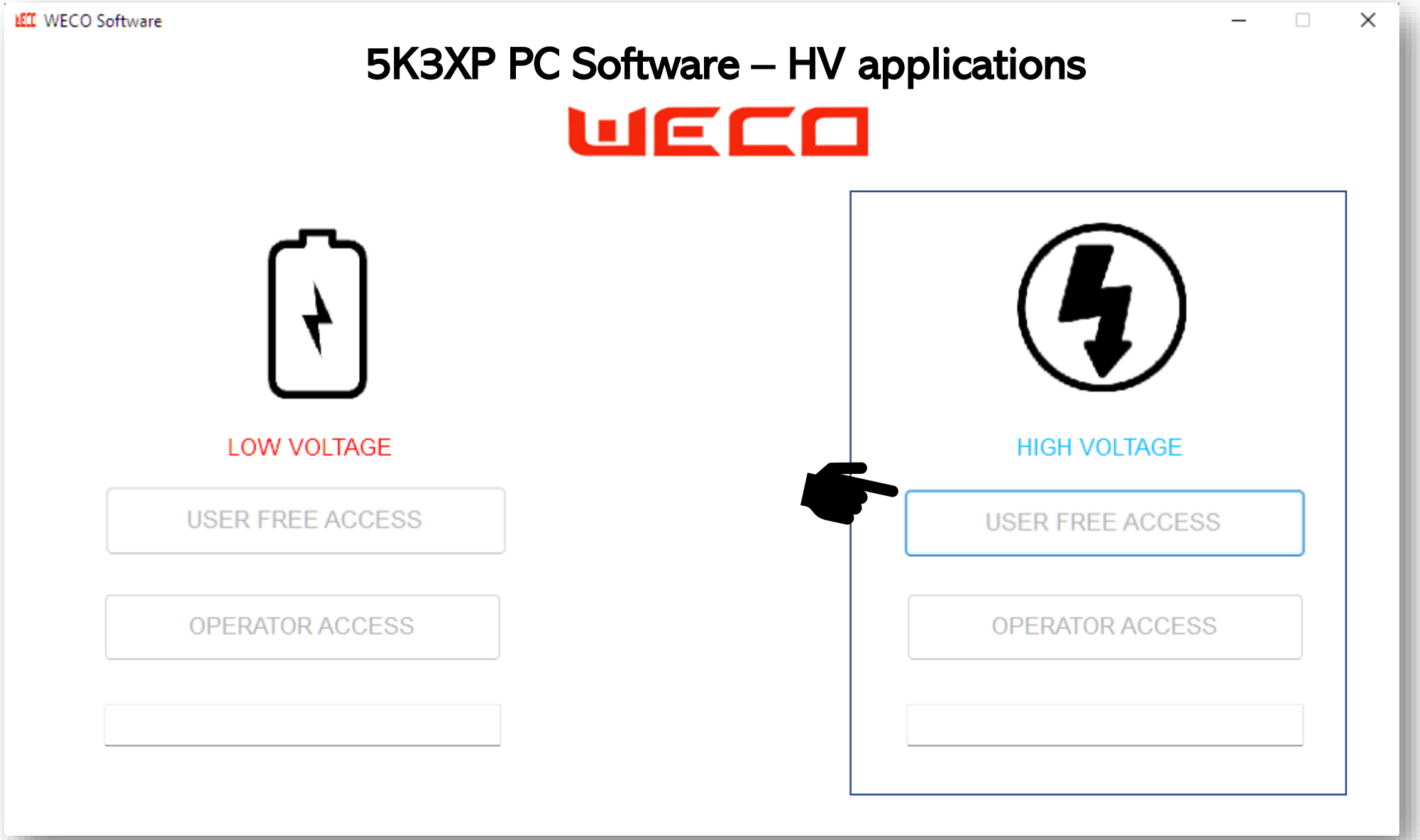
XLS File Generator:

Historical data parsing tools:

Import txt file:

XLS File Generator:

5K3XP PC Software – HV applications

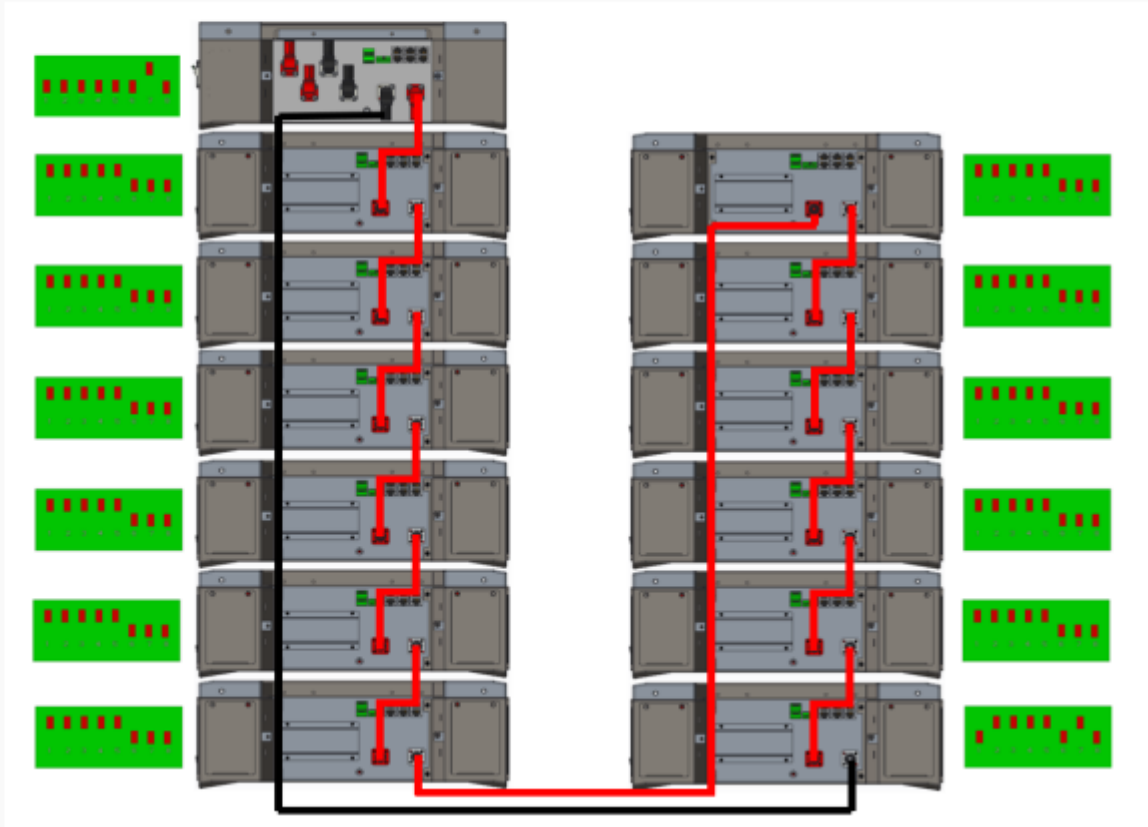


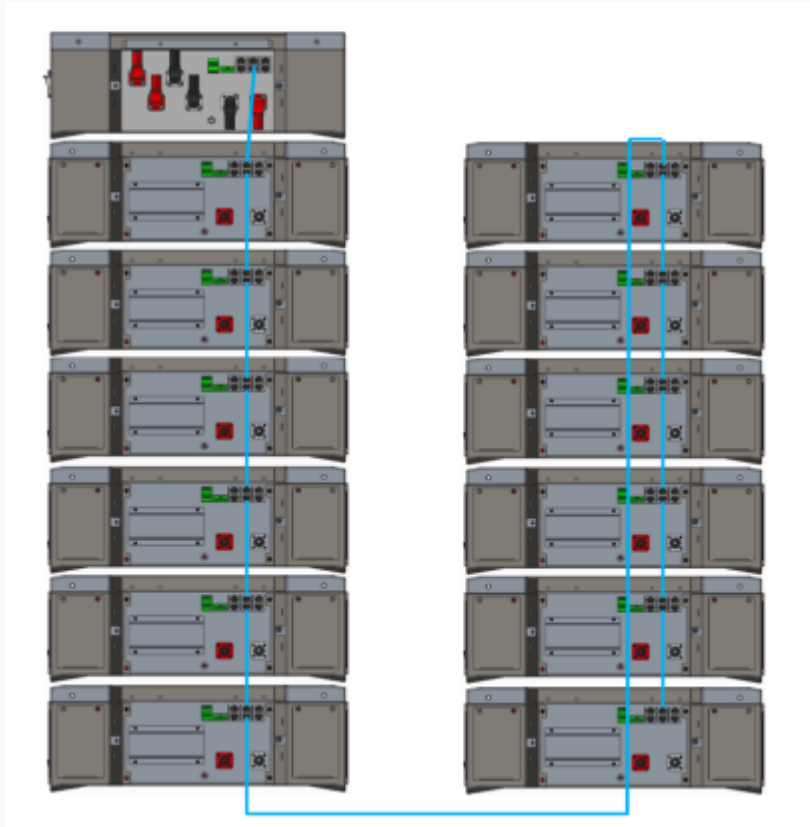
Step1 | Step2 | Overview | System Info | Module Info

Step 1: Set the DIP switch as shown in the following figure.

Step 2: Connect each battery module in series and ensure that the polarity of the connection to the HV box is correct.

Step 3: Connect the RJ45 cable from the HV box CAN1-B port to the CAN-A port of the first battery module. Next, connect the CAN-B port of the previous battery module to the Can-A port of the next battery module through the RJ45 cable.





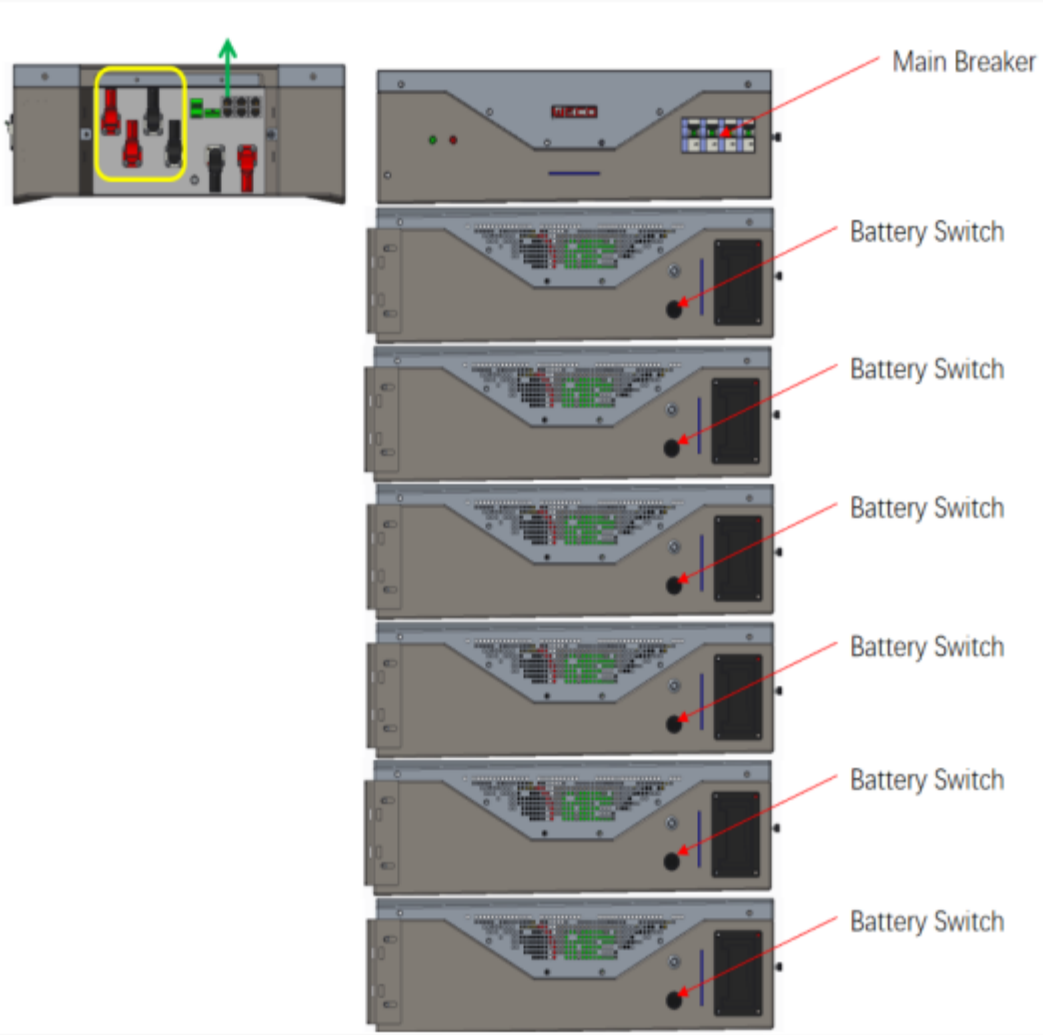
Step 4: Connect the inverter input channels to the HV sockets P+ and P- of the HV box.

Step 5: Set the DIP switch of the HV box as shown right.

Step 6: Connect the RJ45 cable of inverter CAN communication to the CAN2-B port of the HV box.

Step 7: Turn on the boat switch on the side of each battery module.

Step 8: Power up the system by turning on the main breaker of the HV box.



Step1 | Step2 | Overview | System Info | Module Info

WECO

Status Of Charge: ---%

Status: ---

Instant Power: ---kW

Charging Time: ---
Discharging Time: ---
Standby Time: ---

System Voltage: ---
System Current: ---
System Insulation: ---

Modules Connected: ---
Delta Voltage: ---
Delta Temperature: ---

Charging Energy : ---
Discharging Energy: ---
Number of Cycles: ---

Inverter protocol: ---
BMS Version: ---
FW Version: ---

COM Port:
Connect : CONNECT
Status:

Step1 | Step2 | Overview | System Info | Module Info

System SOC:	---
System Voltage:	---
System Current:	---
System Power:	---
System Insulation:	---
Charging Time:	---
Discharging Time:	---
Standby Time:	---

System Status:	---
Modules Connected:	---
Max Cell Voltage:	---
Min Cell Voltage:	---
Delta Voltage:	---
Max Cell Temperature:	---
Min Cell Temperature:	---
Delta Temperature.:	---

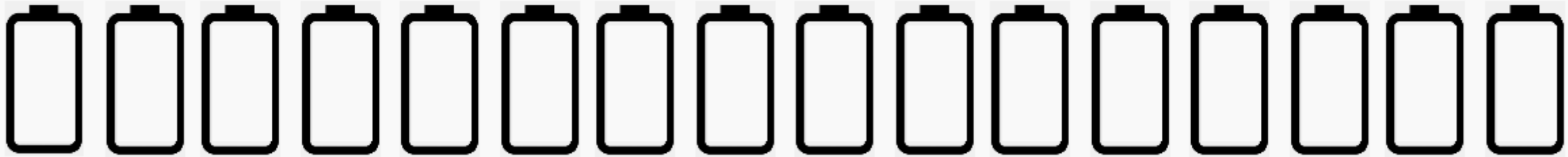
SumVol OV:	
SumVol UV:	
CellVol OV:	
CellVol UV:	
Charge OC:	
Discharge OC:	
Charge OT:	
Charge UT:	
Discharge OT:	
Discharge UT:	
Internal COM:	
External COM:	
Insulation LOW:	
SumVol Err:	
Breaker Interlock:	

	CAN	Link	Status	Vdc	Current	SOC
1#			---	---	---	
2#			---	---	---	
3#			---	---	---	
4#			---	---	---	
5#			---	---	---	
6#			---	---	---	
7#			---	---	---	
8#			---	---	---	
9#			---	---	---	
10#			---	---	---	
11#			---	---	---	
12#			---	---	---	
13#			---	---	---	
14#			---	---	---	
15#			---	---	---	
16#			---	---	---	

Step1 | Step2 | Overview | System Info | Module Info

Cell Voltage

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



Temperature

Temp1:	0	Temp2:	0	Temp3:	0
Temp4:	0				

Voltage/Current

Module Voltage:	0	Module Current:	0
Max Voltage:	0	Min Voltage:	0

Module Select

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

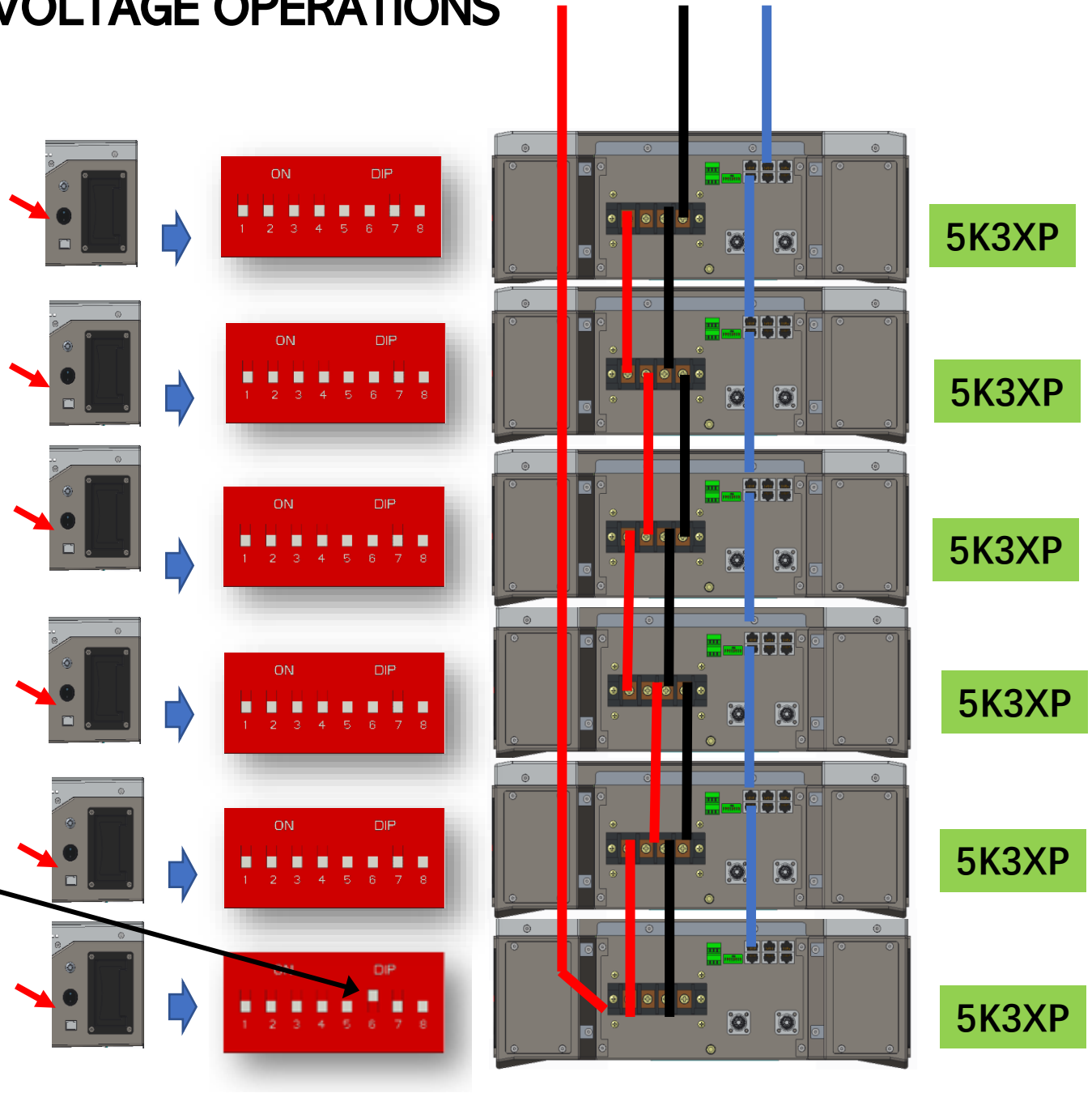
MODULES INTERCONNECTIONS

5K3XP LOW VOLTAGE OPERATIONS

1. All DIP Switches SET to OFF (from master to the penultimate)
2. Set the last module as 00000100 (terminator)
3. Connect all the RS 485 Cables from Port B of Master to Port A of the Sub
4. Proceed the RS485 in Daisy Chain until the last module
5. Connect the power connection as usually
6. Connect the Power Output to the inverter
7. Turn on the Main Switch of each module (located on the side below the handle)
8. Press the RUN BUTTON of the Master only
9. Wait for all the Submodules to start up automatically .

⚠ Information:

In every LV installation, always remember that last module MUST have DIP 6 ON, to enable the 120 Ω termination resistor.



5K3XP and 5K3 LV/HV mixed LV cluster (max 6 units)

5K3XP and 5K3 LV/HV mixed LV cluster (max 6 units)

5K3 LV/HV LOW VOLTAGE SINGLE CLUSTER EXPANSION with 5K3XP
EXAMPLE: 3*5K3XP + 3*5K3 LV/HV

MAX 6 UNITS LV

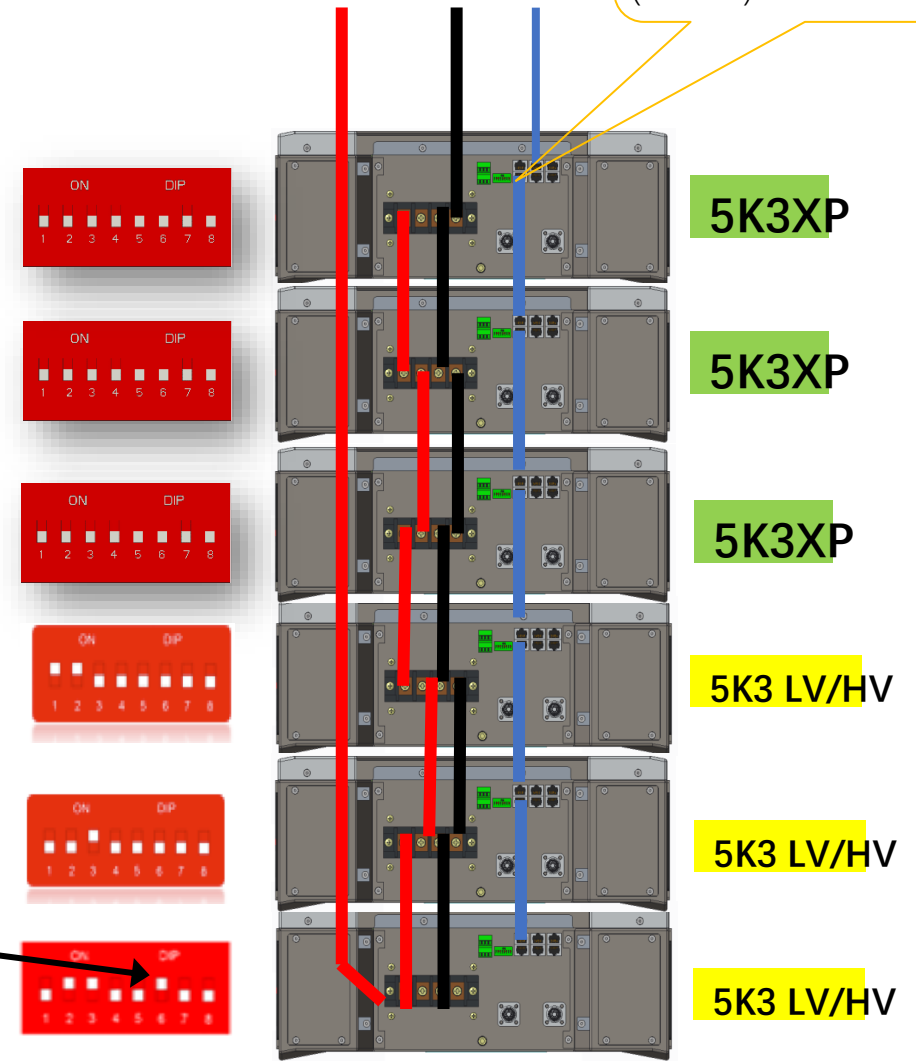
THE 5K3XP (New Model) SHOULD BE THE MASTER BATTERY AND UPPER ONES.
THE 5K3 LV/HV SHOULD BE THE LOWER ONES
DO NOT MIX ALONG THE TOWER

Mixed systems are allowed when expanding existing systems.
For new installations, always use all batteries of the same model.

As usual, connect the RS485 B port of the master battery (top) to the RS485 A port of the slave (bottom).

ALL 5K3XP MUST BE SET AS 0000 0000

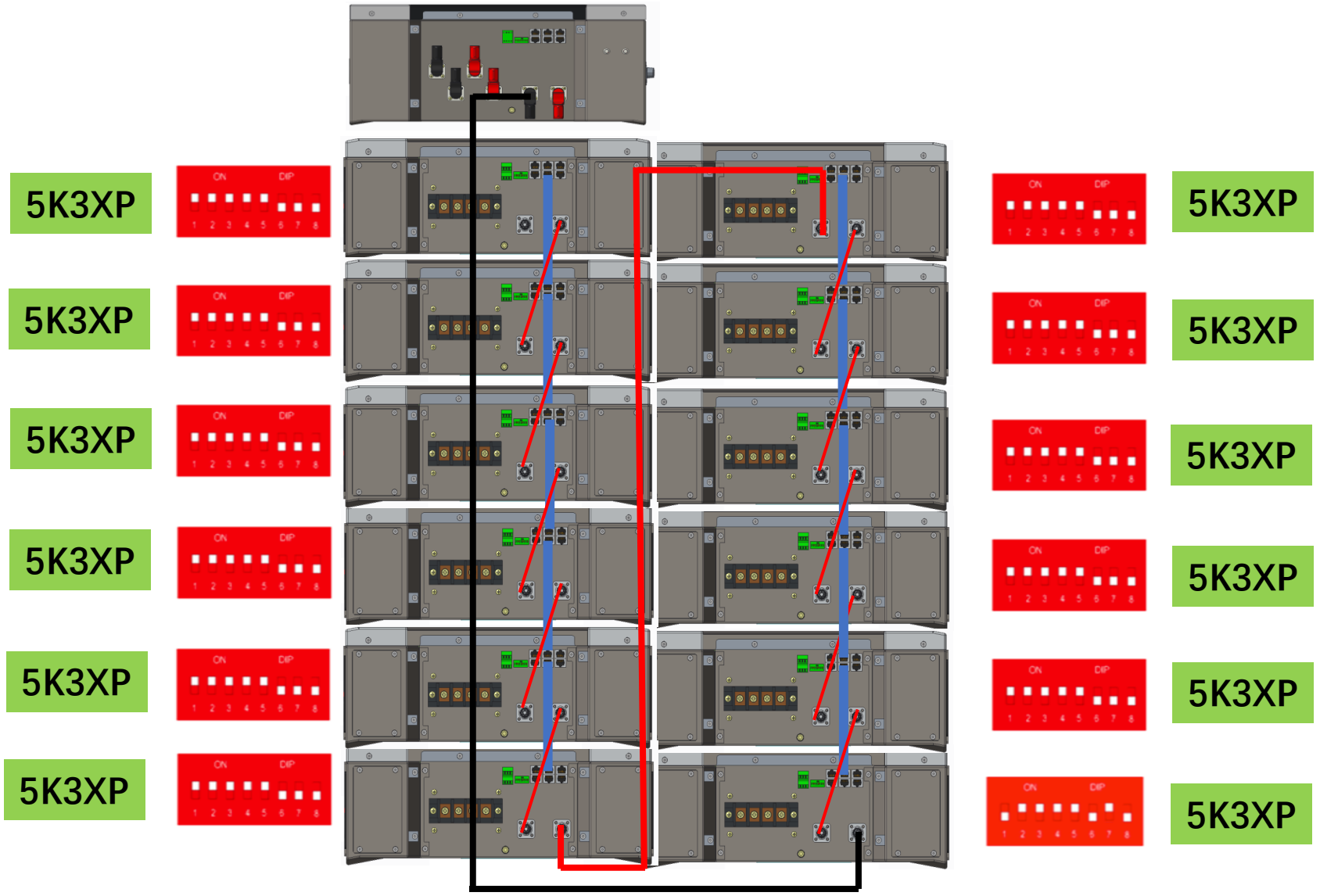
THE 5K3 LV/HV MUST BE SET USING THE ADDRESSING METHOD PROVIDED WITH THE MANUAL



⚠ Information:
In every LV installation, always remember that last module MUST have DIP 6 ON, to enable the 120 Ω termination resistor.

THE END BATTERY MUST BE A 5K3 LV/HV

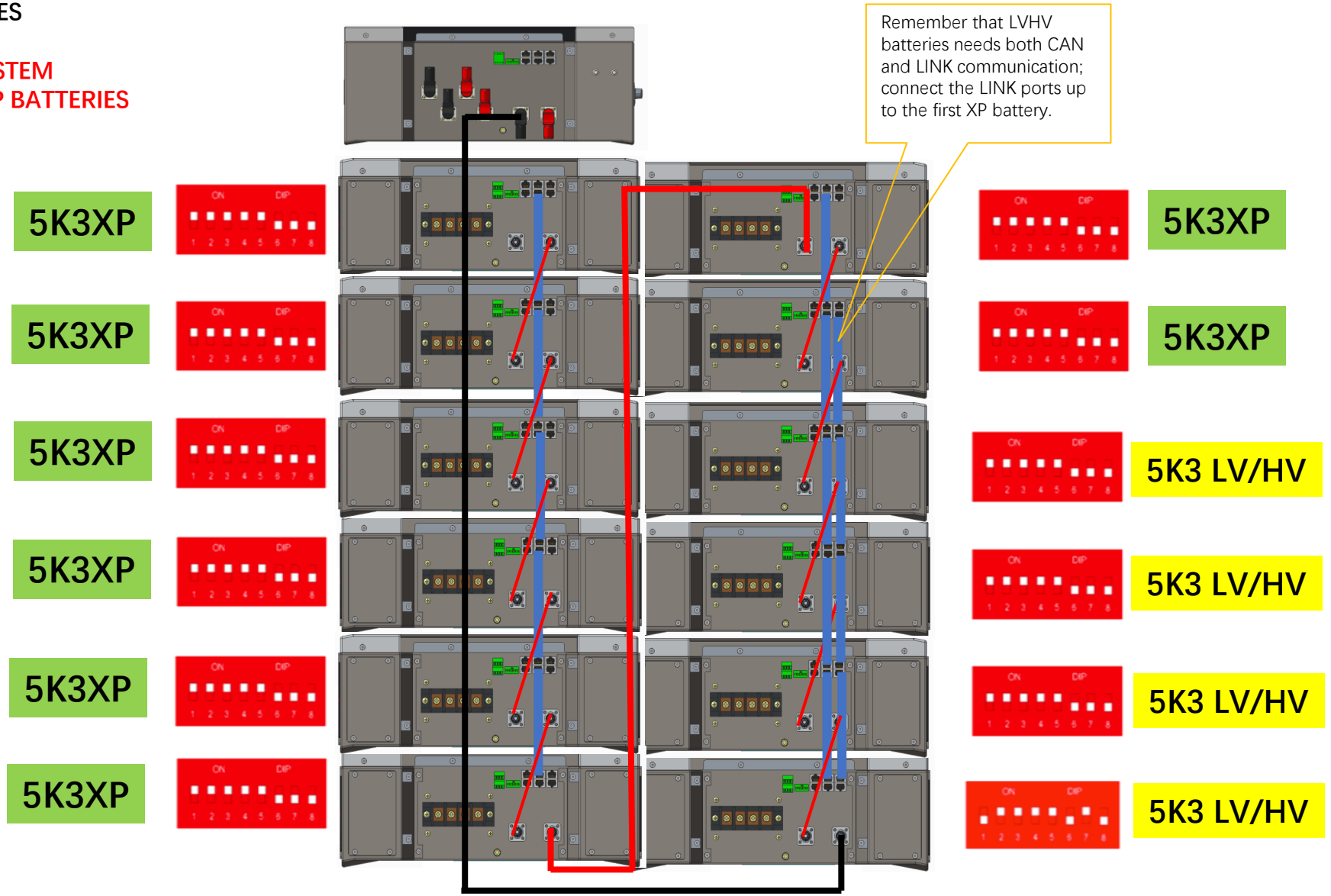
5K3XP HIGH VOLTAGE OPERATIONS



5K3 LV/HV HIGH VOLTAGE SINGLE CLUSTER EXPANSION with 5K3XP
EXAMPLE: 8*5K3XP + 4*5K3 LV/HV

MAX 12 UNITS HV
THE 5K3XP (New Model) SHOULD BE THE MASTER BATTERY AND UPPER ONES.
THE 5K3 LV/HV SHOULD BE THE LOWER ONES
DO NOT MIX ALONG THE TOWER
ALWAYS USE HV BOX XP IN A MIXED HV SYSTEM
HV BOX LVHV IS NOT COMPATIBLE WITH XP BATTERIES

Mixed systems are allowed when expanding existing systems.
For new installations, always use all batteries of the same model.



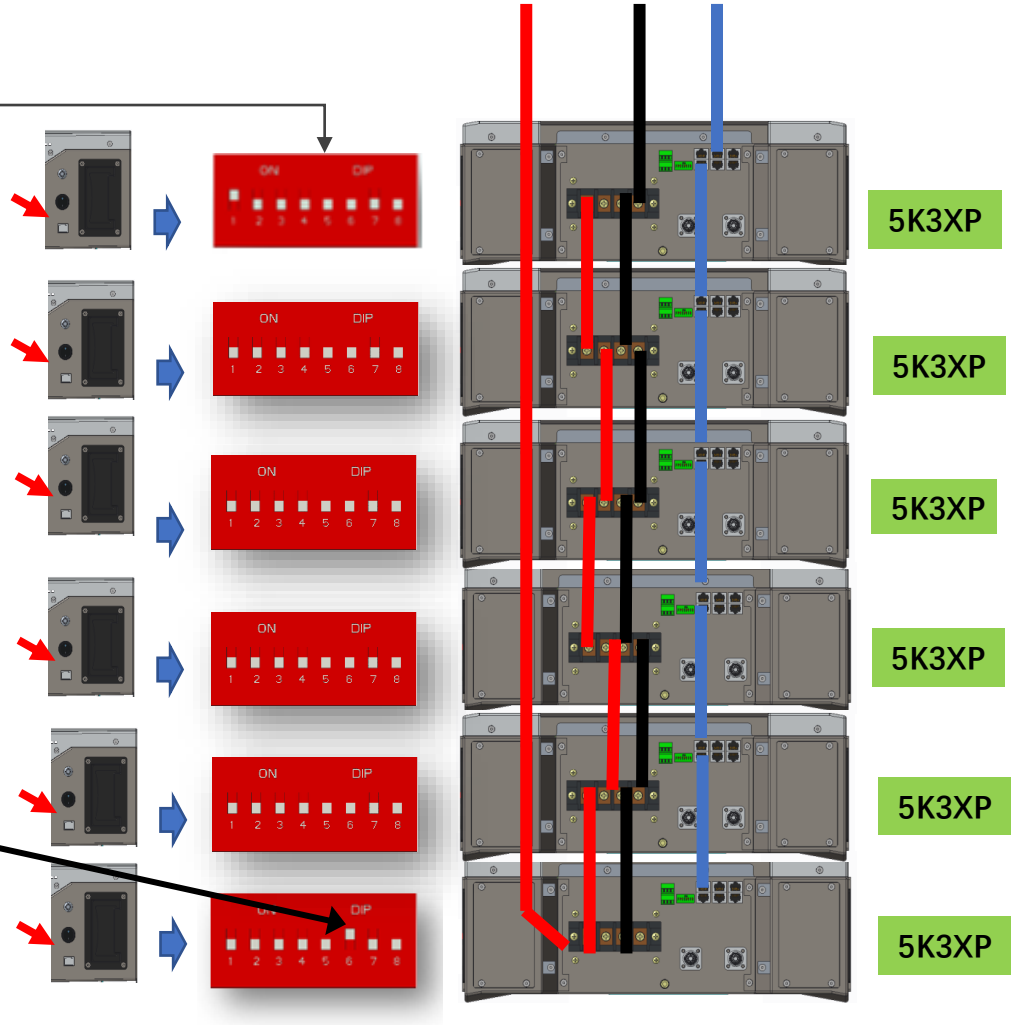
5K3XP LOW VOLTAGE HUB

MAX 7 CLUSTERS AND 15 BATTERIES EACH CLUSTER

5K3XP SET UP OF LOW VOLTAGE MULTI CLUSTERS USING THE HUB LV

MAX 7 CLUSTERS AND 15 BATTERIES EACH CLUSTER

EACH MASTER MUST BE SET WITH A CLUSTER ID TO BE IDENTIFIED BY THE LV HUB



⚠ Information:

In every LV installation, always remember that last module MUST have DIP 6 ON, to enable the 120 Ω termination resistor.

5K3XP SET UP OF LOW VOLTAGE CLUSTERS USING THE HUB LV

MAX 7 CLUSTERS AND 15 BATTERIES EACH CLUSTER

Step 1: Set the parallel clusters as usual, connect the RS485 cables parallel system, connect the power cables

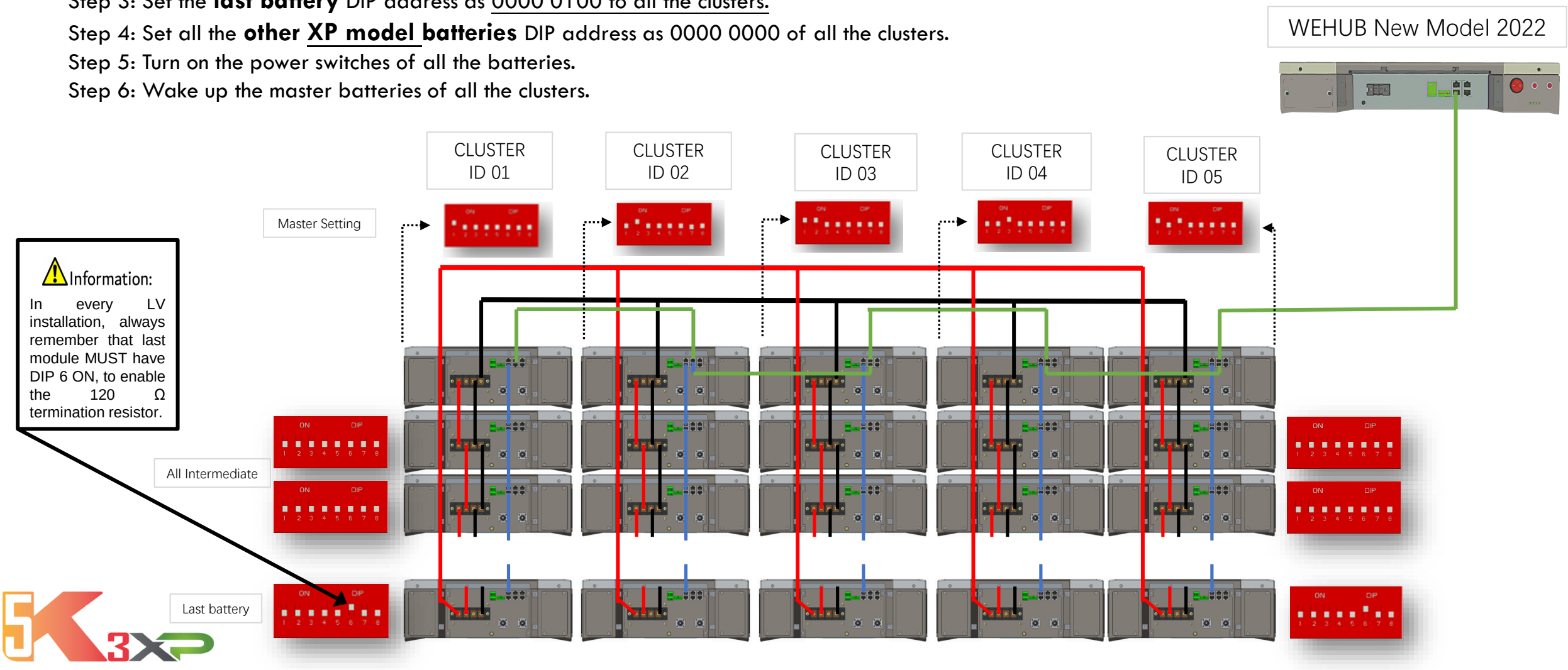
Step 2: Set the **cluster address** on the **master battery DIP** to assign the Cluster ID

Step 3: Set the **last battery** DIP address as 0000 0100 to all the clusters.

Step 4: Set all the **other XP model batteries** DIP address as 0000 0000 of all the clusters.

Step 5: Turn on the power switches of all the batteries.

Step 6: Wake up the master batteries of all the clusters.



COMPOSITION OF AN HUB SYSTEM WITH MIXED MODELS 5K3 LV/HV AND 5K3-XP

A MIXED CLUSTER CONNECTION BETWEEN 5K3 LV/HV and 5K3-XP IS LIMITED TO SIX

5K3XP SET UP OF LOW VOLTAGE MIXED MULTI CLUSTERS USING THE HUB LV

5K3XP + 5K3 LV/HV HUB LV WITH MULTI-CLUSTERS: MAX 7 CLUSTERS AND 6 BATTERIES EACH CLUSTER

Compose the Cluster adding the New 5K3XP on top of the existing 5K3LV/HV Modules
In a mixed multi-clusters system each master battery of each cluster must be a 5K3-XP
Set the DIP SWITCH of the first Cluster master as ID 01
(All Masters of the remaining Clusters needs to be set with consecutive ID)

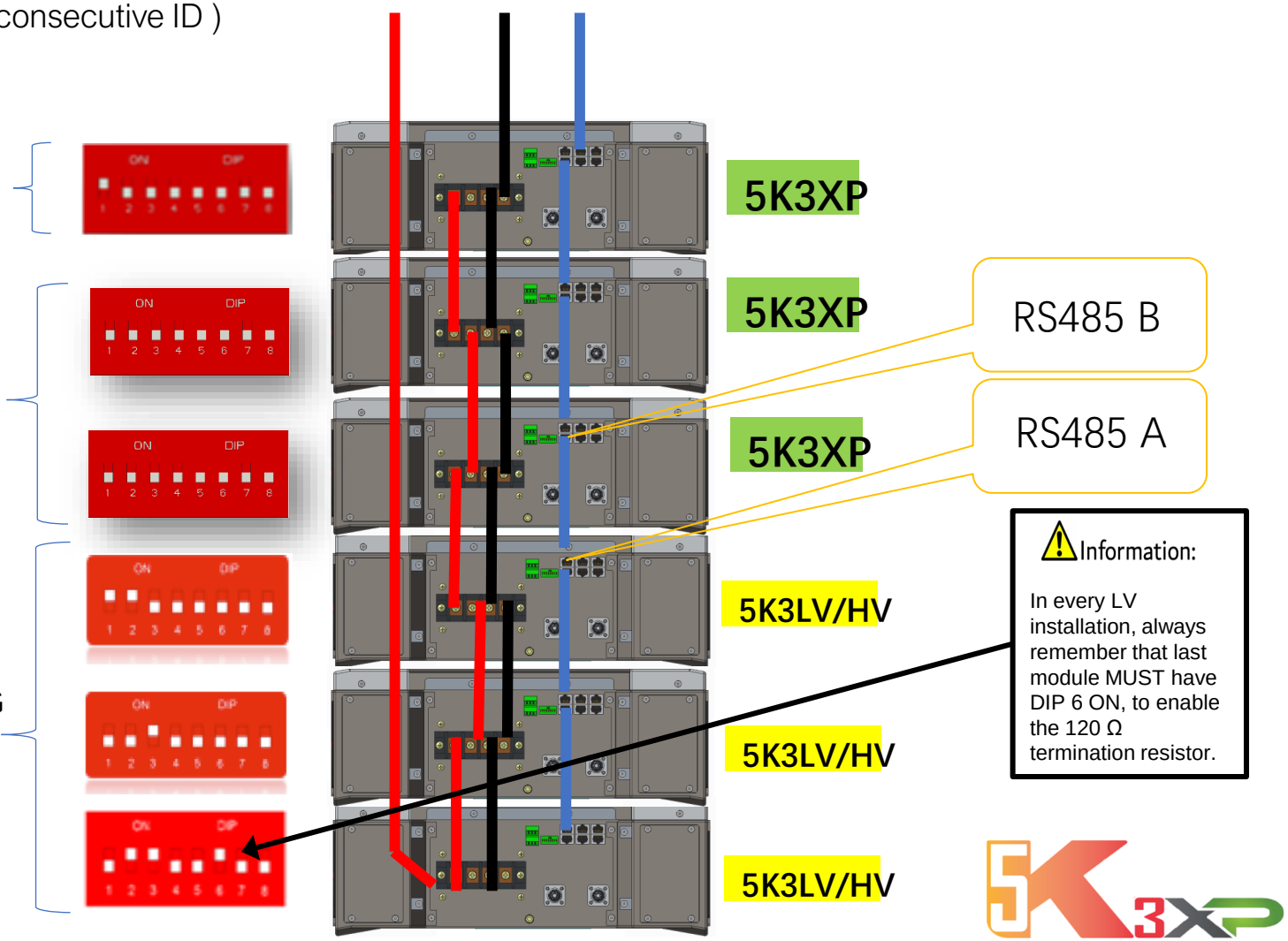
THE MASTER 5K3XP MUST BE SET AS CLUSTER ADDRESS

CLUSTER : 1# 2# 3# 4# 5# 6# 7#

THE INTERMEDIATE 5K3XP MUST BE SET AS 0000 0000

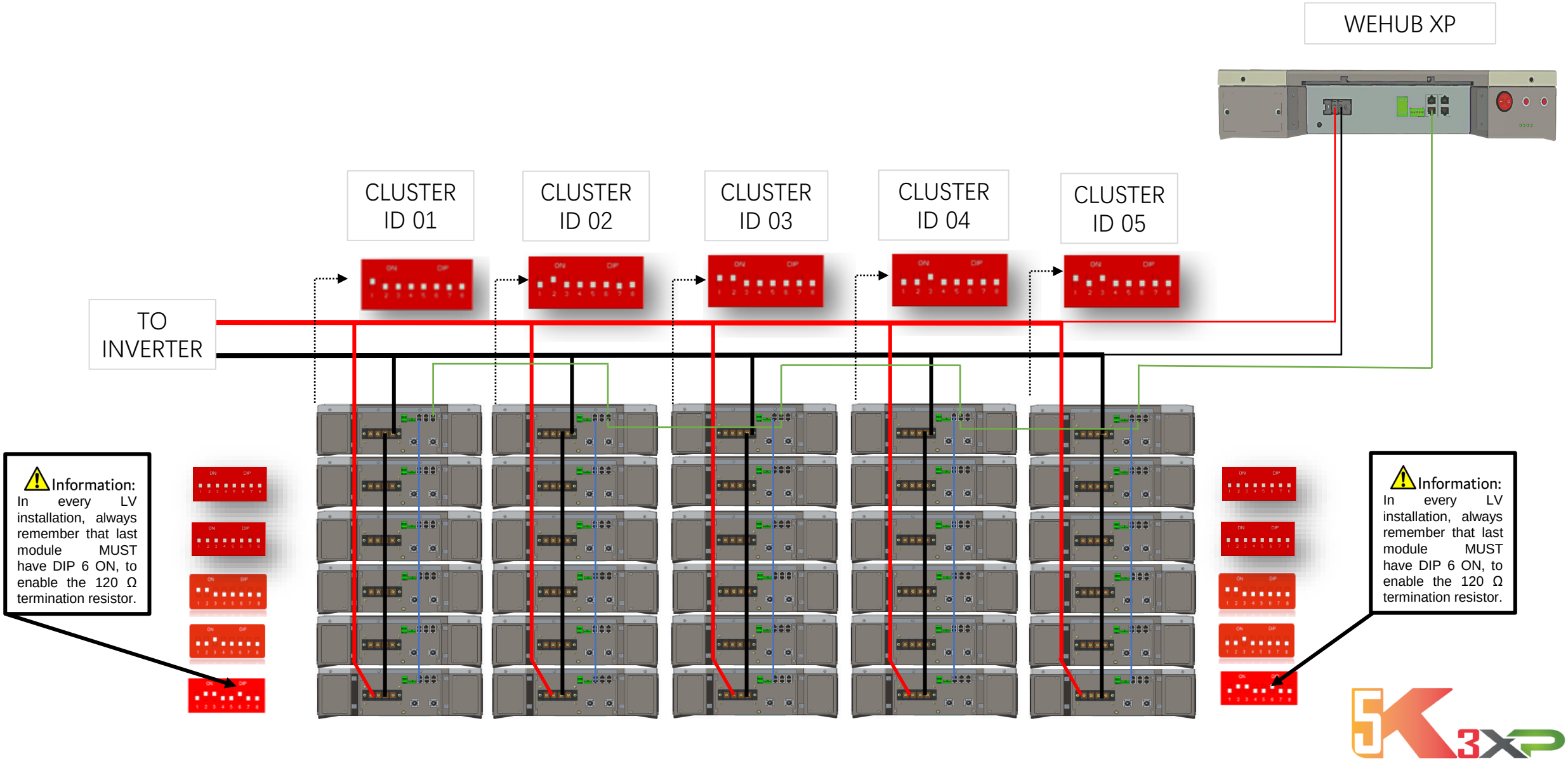
THE 5K3 LV/HV TO BE SET USING THE ADDRESSING METHOD PROVIDED WITH THE MANUAL

2# 3# 4# 5# 6#



5K3XP SET UP OF LOW VOLTAGE MIXED MULTI CLUSTERS USING THE HUB LV

5K3XP + 5K3 LV/HV HUB LV WITH MULTI-CLUSTERS: MAX 7 CLUSTERS AND 6 BATTERIES EACH CLUSTER



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