4 The H51q System Family

The H51q system family comprises modular designed PES in single channel and redundant models, also with TÜV safety certificate.

All input/output modules can be used with both redundant and single channel models of the central devices.

All modules of the H51q system family meet the requirements for electromagnetic compatibility and immunity according to article 10 of the EU guideline 89/336/EWG for the electromagnetic conformity. This is marked with the CE sign within the data sheets of the modules. Also the systems and modules are wearing a label with this sign.
The H51q system family consists of one 19 inches central rack, 5 units high, and up to 16 input/output racks in the 19 inches size, 4 units high (see also data sheets for H51q systems or assembly kits).

4.1 Overview Assembly Kits H51q

The components required for a working system are included in assembly kits:

System	H51q-M	H51q-H	H51q-HR	H51q-MS	H51q-HS	H51q-HRS
Safety	–	–	–	SIL 3	SIL 3	SIL 3
Quantity/type CU	1 x F 8651X	2 x F 8651X	2 x F 8651X	1 x F 8650X	2 x F 8650X	2 x F 8650X
Quantity/type CM *	3 x F 8621A	2 x 3 F 8621A	2 x 3 F 8621A	3 x F 8621A	2 x 3 F 8621A	2 x 3 F 8621A
Quantity/type CoM (Fast Ethernet) *	5 x F 8627/ F 8627X	2 x 5 F 8627/ F 8627X	2 x 5 F 8627/ F 8627X	5 x F 8627/ F 8627X	2 x 5 F 8627/ F 8627X	2 x 5 F 8627/ F 8627X
Quantity/type CoM (Profibus-DP) *	5 x F 8628/ F 8628X	2 x 5 F 8628/ F 8628X	2 x 5 F 8628/ F 8628X	5 x F 8628/ F 8628X	2 x 5 F 8628/ F 8628X	2 x 5 F 8628/ F 8628X
Quantity/type power supplies	2 (+1*) x F 7126A	3 x F 7126A	3 x F 7126A	2 (+1*) x F 7126A	3 x F 7126A	3 x F 7126A
5 V monitoring	F 7131	F 7131	F 7131	F 7131	F 7131	F 7131
Battery buffering	F 7131 + F 8651X	F 7131 + F 8651X	F 7131 + F 8651X	F 7131 + F 8650X	F 7131 + F 8650X	F 7131 + F 8650X
Quantity I/O buses	1	1	2	1	1	2
max. quantity I/O modules	256 in 16 I/O subracks	256 in 16 I/O subracks	2 x 128 in 2 x 8 I/O subracks	256 in 16 I/O subracks	256 in 16 I/O subracks	2 x 128 in 2 x 8 I/O subracks
Assembly kit number	B 5230	B 5232-1	B 5232-2	B 5231	B 5233-1	B 5233-2

Table 4: Overview Assembly Kits H51q

* Options (max. 5 communication slots per central module)

Abbreviations:

CM	Coprocessor Module
CoM	Communication Module
CU	Central Module
I/O	Input/Output

9.7.1 Exchange of the Buffering Batteries

For buffering lithium batteries are used.

Lifetime of the buffer batteries (CPU not in operation, modules *without* voltage feeding):
1000 days at T_A = 25 °C,
200 days at T_A = 60 °C
It is recommended to change the buffer batteries (CPU in operation, modules *with* voltage feeding) at the latest after 6 years.

Changing of external batteries of the systems H41q/H51q:

1. Battery without soldering lug:
   CR-1/2 AA-CD, HIMA part no. 440000019.
   Remove battery cap, loose battery out of the holder and plug in new battery. Check the polarity!
2. Battery with soldering lug: CR-1/2 AA-CD, HIMA part no. 440000016
   Solder battery out of holder (first + pole then - pole). At solder in check the correct polarity and first solder the - pole then the + pole.

External batteries of the systems H41q: Backplane of the bus plate
Dependent on the battery type changing as described above.

External batteries of the systems H51q: Power supply monitoring module F 7131
The module can be pulled out in the energized state. Then change the battery as described above. Check the polarity!

Central modules: F 8650E / F 8650X, F 8651E / F 8651X, F 8652E / F 8652X, F 8653E / F 8653X
Battery: CR 2477N, HIMA part no. 44 0000018
It is recommended to change the buffer battery (CPU in operation, modules *with* voltage feeding) at the latest after 6 years, or with display BATI within three months.



For battery change the central module has to be pulled out of the subrack!

Further informations you will find in chapter “How to Insert and to Remove Modules“. For single channel systems this results of course in a shutdown of the plant, in redundant systems the system reaction depends on the configuration.

Coprocessor module F 8621A
This module may be installed as an option within the central rack of the H41q/H51q system family. At H41q system the coprocessor module is buffered via the batteries on the backplane, at H51q system this is done by batteries on the F 7131 power supply monitoring module. A coprocessor module is needed to hold the master program for controlling the communication between PES systems (slaves).