MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

HIMA

F8652X

REDUNDANT SAFETY CENTRAL MODULE

Used with the applicable HIQuad H41q central processing configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: HIMA F 8652X (1141), pages 1-4.

F 8652X

F 8652X: Central module

Use in the PES H41q-MS, -HS, -HRS,
Safety-related, applicable up to SIL 3 according to IEC 61508

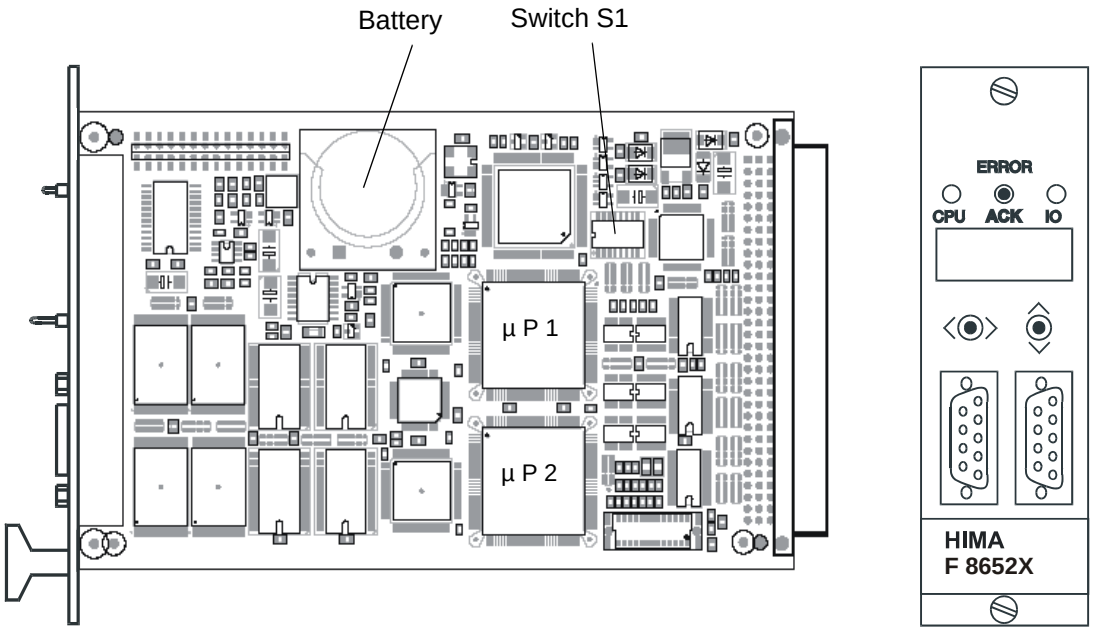


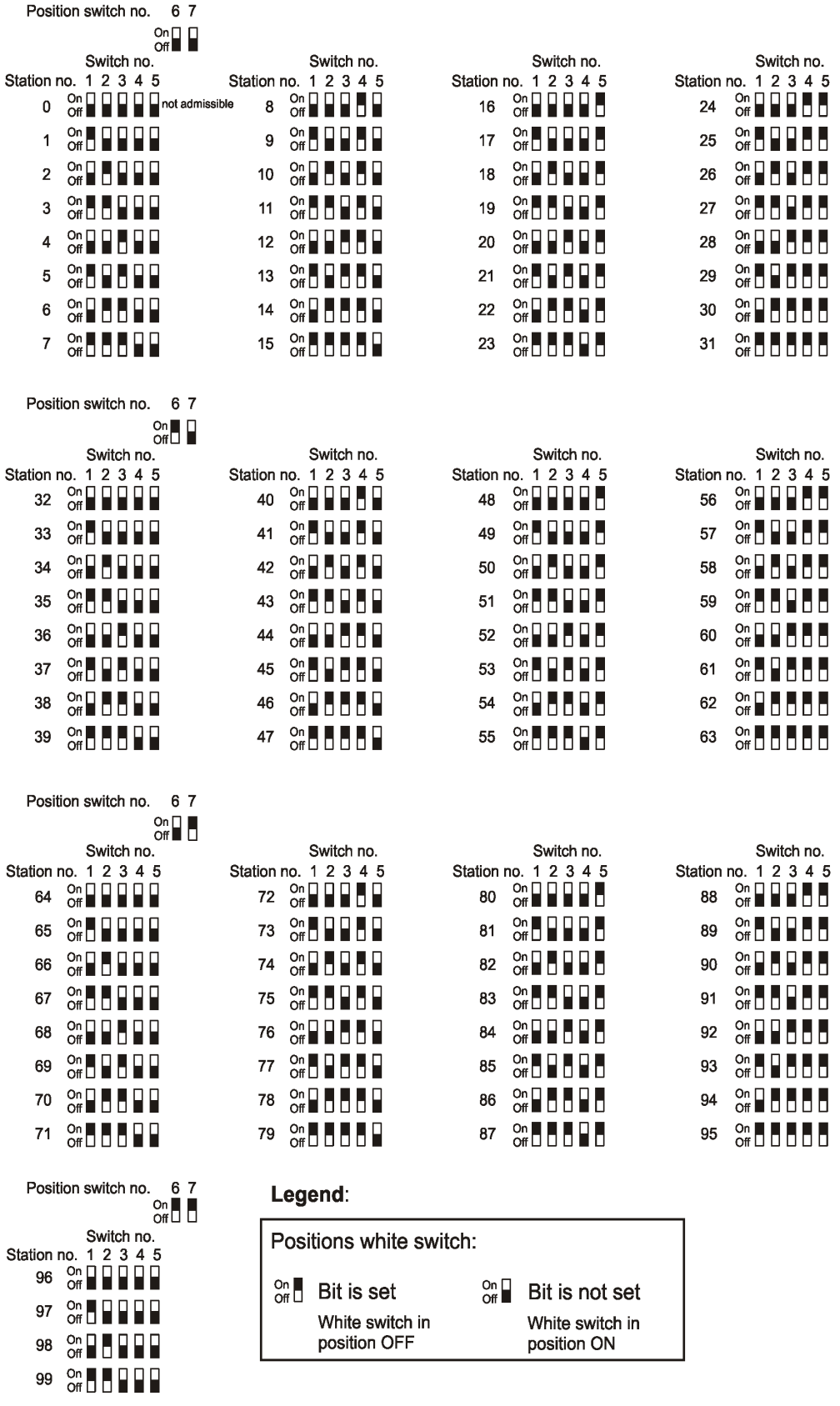
Figure 1: View

Central module with two clock-synchronized microprocessors

Microprocessors	INTEL 386EX, 32 bits
Clock frequency	25 MHz
Memory per microprocessor	
Operating System	Flash-EPROM 1 MB
User program	Flash-EPROM 1 MB *
Data	SRAM 1 MB *
	* Degree of utilization depending on operating system version
Interfaces	Two serial interfaces RS 485 with electric isolation
Diagnostic display	Four digit matrix display with selectable information
Shutdown on fault	Safety-related watchdog with output 24 V, loadable up to 500 mA, short-circuit proof
Construction	Two European standard PCBs, one PCB for the diagnostic display
Space requirement	8 SU
Operating data	5 V / 2 A

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HIMA Paul Hildebrandt GmbH + Co KG, P.O. Box 1261, 68777 Brühl

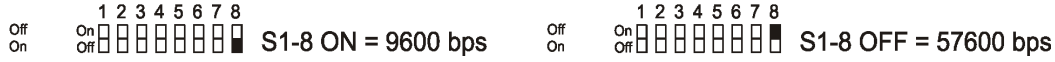
Setting of the bus station no. via switches S1-1/2/3/4/5/6/7:



Legend:

Positions white switch:	
On / Off — Bit is set White switch in position OFF	On / Off — Bit is not set White switch in position ON

Setting of the transmission rate with switch S1-8:



Pin	RS 485	Signal	Meaning
1	-	-	not used
2	-	RP	5 V, decoupled by diodes
3	A/A'	RxD/TxD-A	Receive/Transmit Data A
4	-	CNTR-A	Control signal A
5	C/C'	DGND	Data Ground
6	-	VP	5 V, positive pole of power supply
7	-	-	not used
8	B/B'	RxD/TxD-B	Receive/Transmit Data B
9	-	CNTR-B	Control signal B

Table 1: Pin assignment of the interface RS 485, 9-pole

For the serial interface only the bus station no. 1-31 can be set.
Within an Ethernet network the bus station no. can be set from 1 to 99. Therefore the switches S1-6/7 must be set in addition to the switches S1-1/2/3/4/5.
The number of the communication partners within a network is still limited to 64.
This enhanced setting of the bus station no. is only possible from operating system BS41q/51q V7.0-8 (05.31) of the central module.

Applications with the communication module F 8627X:
– connection of the central module to a PADT (ELOP II TCP)
– connection to other communication partners within an Ethernet network (safe**ethernet**, Modbus TCP)

The communication runs from the central module via the backplane bus to the communication module F 8627X and from the Ethernet ports of the F 8627X into the Ethernet network and vice versa.

Special features of the central module:
– Self-education: from operating system BS41q/51q V7.0-8 (05.31)
– ELOP II TCP: from operating system BS41q/51q V7.0-8 (05.31)

Further informations about the bus station no., ELOP II TCP, loading of operating systems and application programs (self-education) et al. corresponding to the central module you will find in the data sheet of the F8627X as well as the operating system manual of H41q/H51q and the safety manual of H41q/H51q.



Before removing a central module its fixing screws must be completely loosened and freely movable. Remove the module from the bus board by pushing the ejection lever (front label) top down and quickly removing in an upward motion to ensure that faulty signals are not triggered within the system!
To attach the module, place it on the terminal block and press it inwards as far as it will go. This action should be performed quickly to ensure that faulty signals are not triggered within the system!

Function of the ejection lever with front label

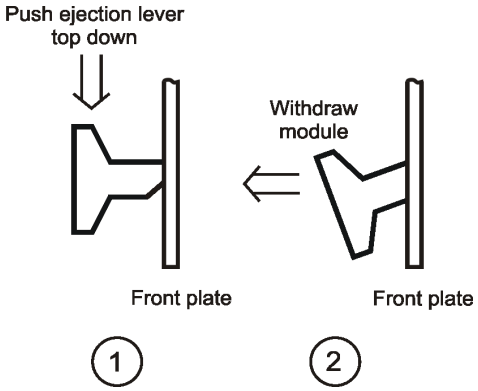


Figure 2: Function of the ejection lever

Diagnostic display of the central module

- Four digit alphanumerical display,
- two LEDs for the general display of errors (CPU for the central modules, IO for the testable input/output modules),
- two toggle switches to request detailed error information,
- push-button ACK resets the error indication;
  in failure stop ACK behaves like restarting the system.

For further information on the diagnostic display and lists of error codes, refer to the documentation "Functions of the operational system BS 41q/51q" (also on ELOP II CD).

Notes for start-up and maintenance

- Lifetime of the buffer battery (*without* voltage feeding):
  1000 days at T_A = 25 °C
  200 days at T_A = 60 °C
- It is recommended to change the buffer battery (CPU in operation) at the latest after 6 years, or with display BATI within three months
  (Lithium battery, e.g. type CR 2477N, HIMA part no. 44 0000018)
- Check the bus station no. and transmission rate at switch S1 for correct settings
- The F 8652X can be used to replace the previous moduls: F 8652, F 8652A and F 8652E!