

The FOUNDATION Fieldbus Linking Device LD 800HSE is designed according to class 42c of the HSE profile, therefore providing the following functions:

- Configuration of the connected H1 devices through System Management and Network Management via HSE
- Access to the function blocks of the connected H1 devices via HSE
- Republishing of process data from one H1 link to another
- Republishing of process data from H1 to HSE and vice versa
- Distribution of alarms and events sent by H1 devices

In each of the four H1 channels the Linking Device operates as the Link Master as well as the SM Time Publisher.

Up to now the Linking Device has been registered with the Fieldbus Foundation as a device of HSE profile class 42a.



Function

LD 800HSE is a highly compact gateway between four FF H1 links and FF HSE suited for redundant use. The linking device meets protection class IP20 and is DIN rack mountable. It is powered by 24 Vdc and supports Ethernet 10 Mbit/s and 100 Mbit/s.

Functionality

General

- Linking device according to class 42a of FF HSE profile (registration as a device of HSE profile class 42c in preparation)
- Connects up to four H1 links to an HSE subnet

Gateway

- Recognition of connected H1 devices
- Management access to H1 devices via HSE
- Client/Server access to function blocks on H1 devices via HSE
- Republishing of process data between H1 links
- Republishing of process data from H1 to HSE and vice versa
- Maximum throughput: 20 republished signals per second per H1 link

HSE

- System Management Agent
- Network Management Agent
- Server providing object access to H1 devices
- Publishing/Subscribing of process data from/to H1 devices
- Distribution of alarms and events sent by H1 devices
- Time synchronization using SNTP
- IP address configurable via integrated web server

Maximum Limits of the Linking Device on HSE	
Configured sessions	64
Configured HSE VCRs	400
Automatic sessions	32
Automatic HSE VCRs	256
H1-H1 republishings	64

H1

- System Management Manager
- Network Management Manager
- Client for object access
- Publisher and Subscriber of process data
- Reception of alarms and events
- Link Master, SM Time Publisher

Maximum Limits per H1 Channel	
Connections (VCRs) - overall ⁽¹⁾	128
- Source ⁽²⁾ + Sink	0 .. 20
- Client + Server	40
- Publisher + Subscriber	0 .. 100
LAS schedules	2
Sub-schedules	4
Sequences per sub-schedule	64
Elements per sequence	4
Size of LAS schedule domain [octets]	2000

(1)The total number of Source/Sink, Client/Server, and Publisher/Subscriber VCRs in an H1 channel cannot exceed this value.

(2)As the LD 800HSE does not generate alarms, there is no practical use case for Source VCRs.

Integration into the Industrial IT System Structure

Within a typical Industrial IT system structure as shown in Figure 1 a FOUNDATION Fieldbus subsystem is linked to the control system via the HSE subnet. The linking devices LD 800HSE serve as gateways between the field devices on the H1 links and the HSE subnet. The linking devices LD 800HSE serve as gateways between the field devices on the H1 links and the HSE subnet. The FOUNDATION Fieldbus subsystem consists of linking devices and possibly other HSE devices which communicate with one another using the HSE protocol and subsidiary H1 links. As a device designed according to class 42c of the HSE profile the LD 800HSE allows process data that are being published cyclically on the subsidiary H1 links to be **republished** on the HSE subnet. By using HSE republishing, it is possible to configure cyclical communication between field devices on different H1 links and devices on the HSE subnet. Furthermore alarms and events from H1 devices are communicated to the Connectivity Servers FF, thus allowing seamless integration in the overall 800xA alarm management philosophy.

The displayed system structure also includes **redundant** LD 800HSE. The corresponding H1 ports of both physical linking devices making up a redundant set of linking devices are connected to the same H1 link. Both physical devices belonging to a redundant set are connected via a serial RS-232 null modem cable for exchanging redundancy control information.

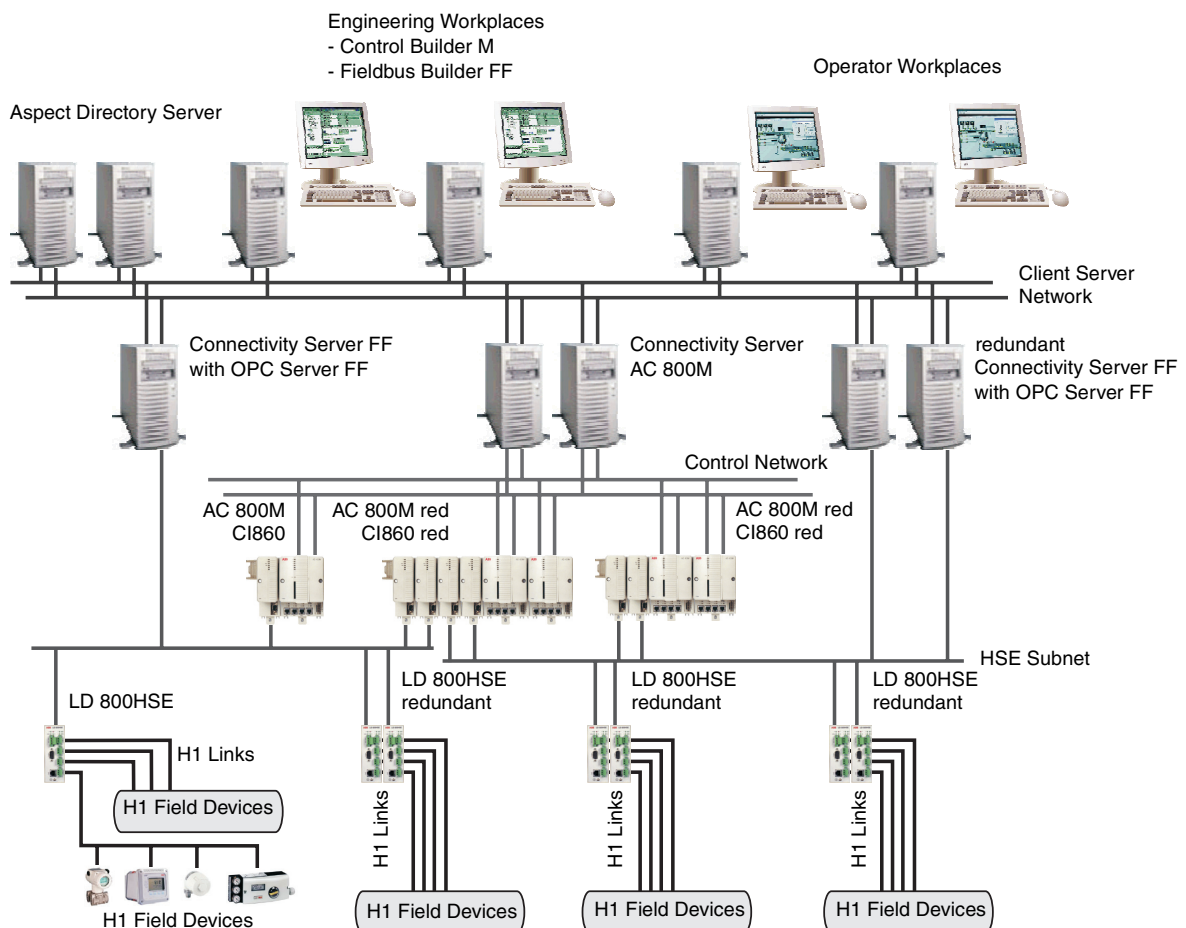


Figure 1. Sample System Structure with FF Network

Within a typical Industrial IT system structure the FOUNDATION Fieldbus subsystem is interfaced to the IEC 61131 controller using the communication interface module CI860 in the AC 800M which acts as HSE host on the HSE subnet.

Technical Data

Power Supply	Supply voltage	24 V DC (+- 20%)
	Current consumption	typ. 200 mA
	Power dissipation	typ. 4.8 W
Mechanical Properties	Dimensions	(length x height x width) 47 x 131 x 111 mm, mounted on DIN rail 35 mm (DIN EN 50 022)
	Weight	approx. 0.4 kg
	Degree of protection	IP 20
Environmental Conditions	Operating temperature	0° C .. +55° C, non-vertical mounting and hampered air convection may reduce upper temperature limit
	Storage temperature	-20° C ... +70° C
	Relative humidity	< 90%, non-condensing
Ethernet Interface	Number of channels	1
	Port	Ethernet 10BASE-T/100BASE-TX, RJ45
	Transfer rates	10 Mbit/s or 100 Mbit/s (autosensing)
H1 Fieldbus Interface	Number of channels	4
	Port	FF H1 3-pole screw terminals (pluggable), transformer coupling
	Physical layer profile	type 114, standard power signalling, separately powered, not intrinsically safe
	Transfer rate	31.25 kbit/s
Serial Interface	Port	9-pole SubD male RS-232, 115.2 kbit/s
Certifications	CE Compliance according to EMC Directive 89/336/EEC EN 61000-6-2, EN 61000-6-4 FCC Part 15 Subpart B Class A VCCI Class A Information Technology Equipment (ITE) UL 508, CSA C22.2 No. 14-M95 ABB Industrial IT enabled	
Accessories	Redundancy Link Cable 0,5 m (to be ordered separately)	

*For more information of Field^{IT}, contact us at fieldbus@de.abb.com
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Our worldwide staff of professionals is ready to meet *your* needs for process automation.
For the location nearest you, please contact the appropriate regional office:

Automation Technology Products
Wickliffe, Ohio, USA
<http://www.abb.com/controlsystems>
email: industrialitsolutions@us.abb.com

Automation Technology Products
Västerås, Sweden
<http://www.abb.com/controlsystems>
email: processautomation@se.abb.com

Automation Technology Products
Mannheim, Germany
<http://www.abb.com/controlsystems>
email: marketing.control-products@de.abb.com