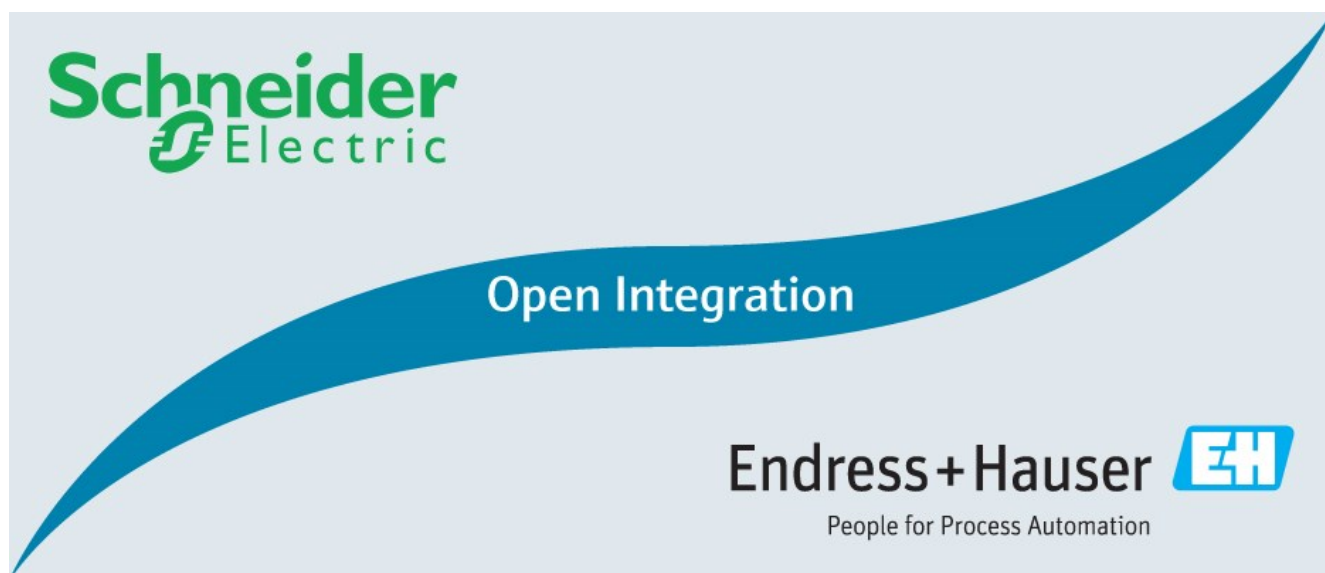


## Reference Topology SE01

Schneider Electric Modicon M580 and PROFIBUS for  
Primaries & Metal Industry





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## 1 Document Information

### 1.1 Purpose and Scope

This document specifies the Open Integration Reference Topology SE01. All content of this document is jointly developed, reviewed and approved by Schneider Electric and Endress+Hauser as a common deliverable of Open Integration.

### 1.2 Document History

This is version 1.00.00 of this document. Version history:

Version	Released	Description
1.00.00	2015-12	Initial version

### 1.3 Related Documents

Please refer to related documents as listed below:

Document	Description
SD01463S/04/EN/01.15	Integration Tutorial SE01
SD01464S/04/EN/01.15	Integration Test Summary SE01
SD01465S/04/EN/01.15	List of Tested Devices and Versions SE01

## 2 Target Market

### 2.1 Industry Application

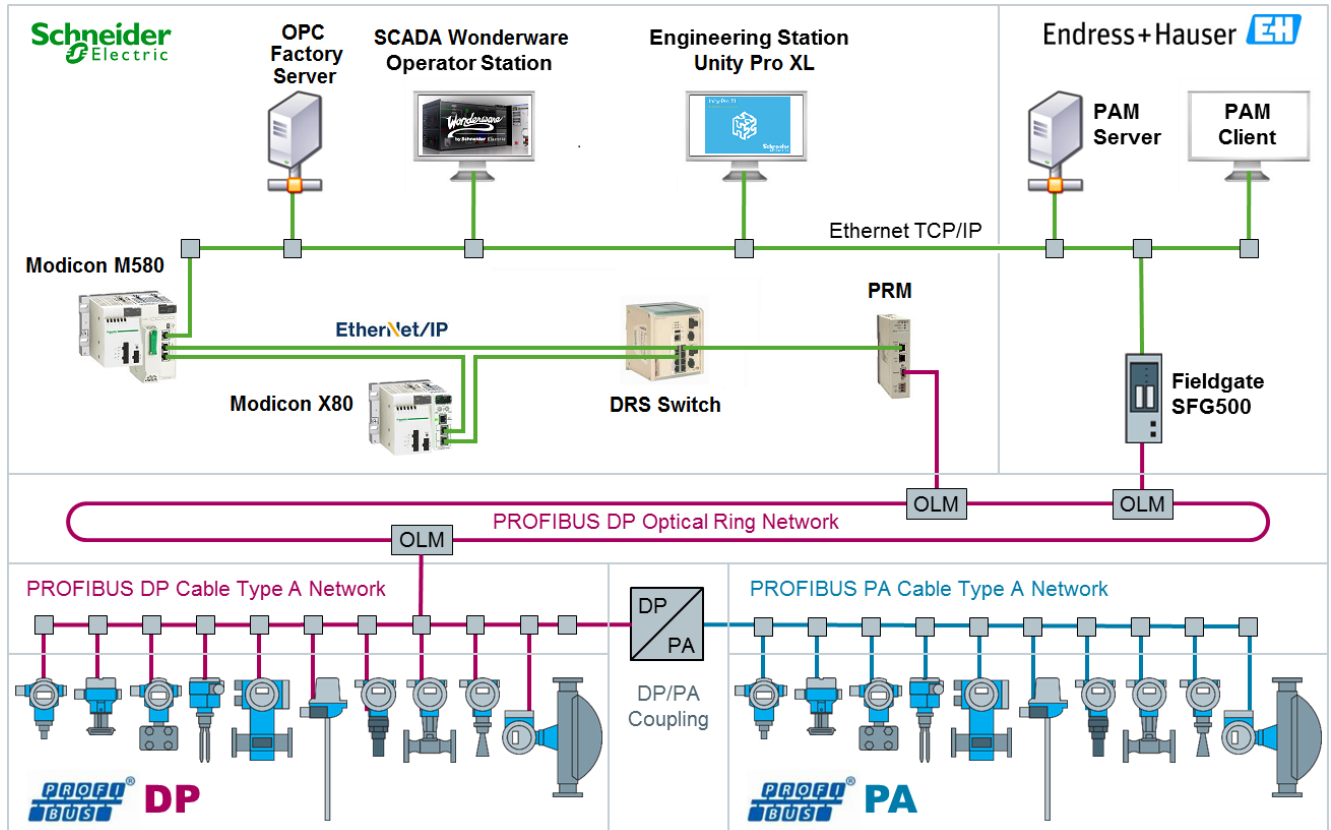
This reference topology is designed to serve applications in Primaries / Metal industries.

### 2.2 Fieldbus Technology

This reference topology is designed for instrumentation with PROFIBUS DP and PROFIBUS PA.

## 3 Reference Topology

### 3.1 Overview








### 3.2 Process Control System

The process control system part top left in the overview is provided by Schneider Electric:

The Schneider Electric M580 controller is connected into an Ethernet IP single ring with a DRS switch and an X80 I/O platform. The connection to the underlying PROFIBUS DP/PA network is done via the PROFIBUS Remote Master (PRM), which is connected to the DRS switch. Core element on top of the system backbone is an Engineering Station for control engineering with Unity Pro XL, complemented with SCADA Wonderware to configure Server and Operator Station as runtime environment for process visualization.

Reference hardware:



	Article	Description
<b>Modicon M580</b> 	BME XBP 0400 BMX CPS 2010 BME P58 2040	Ethernet and X-bus backplane, 4 slots Power supply module 24 V DC, 16.8W Processor module M580
<b>X80 I/O Platform</b> 	BME XBP 0400 BMX CPS 2010 BME CRA 31210	Ethernet and X-bus backplane, 4 slots Power supply module 24 V DC, 16.8W Modicon X80 EIO Drop adapter
<b>DRS Switch</b> 	TCSESM083F23F1	Extended Managed Ethernet Switch
<b>PROFIBUS Remote Master</b> 	TCSEGPA23F14F	PROFIBUS DPV1 interface module for Modicon M580 control unit

### 3.3 Asset Management System

The asset management system part top right in the overview is provided by Endress+Hauser:

FieldCare or PAM Suite Servers and Clients may access the underlying PROFIBUS DP/PA fieldbus network either via system backbone and hardware of the control system, or independently via Fieldgate SFG500.

Reference hardware:



Endress+Hauser  People for Process Automation	Article	Description
<b>Fieldgate SFG500</b> 	SFG500 SFM500-A1	Ethernet / PROFIBUS DP gateway Asset Management Module for Fieldgate SFG500

## 3.4 Field Network Infrastructure

### 3.4.1 PROFIBUS DP Optical Ring Network

The PROFIBUS DP Optical Ring Network is optional for this reference topology, with limited impact to integration tests. If applied, Schneider Electric and Endress+Hauser recommend using optical link modules from R.STAHL for this reference topology.

Recommended hardware:

	Article	Description
Mediaconverter 	9186/15-12-11	Safe area/Zone 2 installation; RS485 / FO "op is"; ring

For optical network a multimode cable with ST-connectors (BFOC/2,5 plug) is required. Optical ring is suitable for installation of the optical network in a Zone 1 or Zone 2 environment.



### 3.4.2 PROFIBUS DP Cable Type A Network

The PROFIBUS DP Cable Type A Network is mandatory for this reference topology, with limited impact to integration tests. Specific reference hardware for this part is not yet defined; recommendable hardware may be listed here in future.

### 3.4.3 PROFIBUS DP/PA Coupling

The PROFIBUS DP/PA Coupling is mandatory for this reference topology, with decisive impact to integration tests. Schneider Electric and Endress+Hauser recommend using the SK3 Power Hub from Pepperl+Fuchs for this reference topology.

Reference hardware:

 <b>PEPPERL+FUCHS</b>	Article	Description
SK3 Power Hub 	MB-FB-GT	Gateway motherboard
	MBHC-FB-4.HSC	Fieldbus Power Hub Motherboard
	HD2-GTR-4PA	Gateway module
	HCD2-FBPS-1.500	Fieldbus Power Supply Module
	HD2-DM-A	Diagnostic module
	ACC-MB-HSK	Shielding/grounding kit

#### **3.4.4 PROFIBUS PA Cable Type A Network**

The PROFIBUS PA Cable Type A Network is mandatory for this reference topology, with limited impact to integration tests. Specific reference hardware for this part is not yet defined; recommendable hardware may be listed here in future.



### 3.5 Field Devices

Open Integration reference topologies always have to be tested versus a selection of most relevant field devices for the target market defined in chapter 2.1. This serves to verify that the system under test is capable to handle a necessary variety of certified field devices. All field devices are fully compliant to standards, but may be implemented versus different version of standards and each field device typically implements only a subset of relevant compliant means.

This chapter defines only a basic set of mandatory field devices for verification of this reference topology, as agreed by Schneider Electric and Endress+Hauser. For more details, please refer to latest list of tested devices and versions for this reference topology, referenced in chapter 1.3.



#### 3.5.1 PROFIBUS DP devices

Reference hardware:

Endress+Hauser  People for Process Automation		Article	Description	PROFIBUS ID
	Promag 100	5P1B	Electromagnetic Flow Transmitter	0x1560
	Promag 53	53W	Electromagnetic Flow Transmitter	0x1526

#### 3.5.2 PROFIBUS PA devices

Reference hardware:

Endress+Hauser  People for Process Automation		Article	Description	PROFIBUS ID
	Promag 50	50P	Electromagnetic Flow Transmitter	0x1525
	Prosonic M	FMU40	Ultrasonic Level Transmitter	0x152C

Endress+Hauser  People for Process Automation			
	Article	Description	PROFIBUS ID
<p>Cerabar S</p> 	PMC71	Absolute and Gauge Pressure Transmitter	0x1541
<p>Deltabar S</p> 	PMD75	Differential Pressure Transmitter	0x1542
<p>Omnigrad M</p> 	TR10+TMT84	Temperature Transmitter	0x1551
<p>Cerabar M</p> 	PMC51	Absolute and Gauge Pressure Transmitter	0x1553
<p>Deltabar M</p> 	PMD55	Differential Pressure Transmitter	0x1554
<p>Deltapilot M</p> 	FMB53	Hydrostatic Level Transmitter	0x1555
<p>Levelflex</p> 	FMP57	Guided Radar Level Transmitter	0x1558
<p>Prowirl 200</p> 	7F2B	Vortex Flow Transmitter	0x1564



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