Reference Topology HON02

Honeywell Experion®PKS and PROFIBUS for Chemical Industry

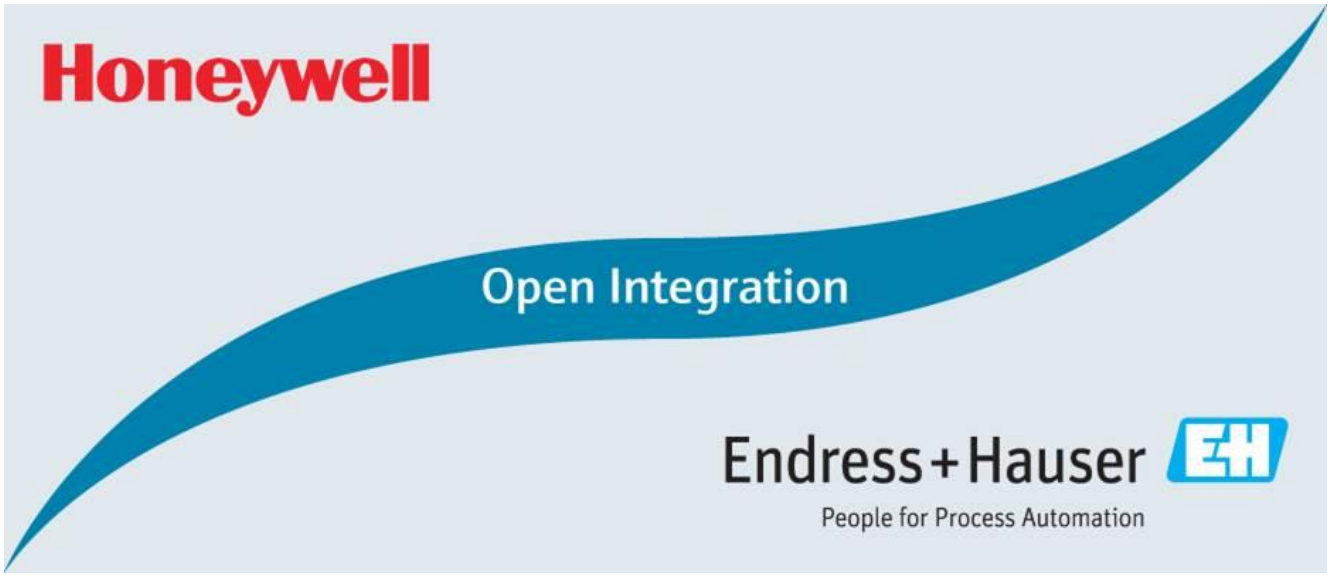


Table of Contents

1 Document Information

1.1 Purpose and Scope

This document specifies the Open Integration Reference Topology HON02. All content of this document is jointly developed, reviewed and released by Honeywell Process Solutions 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	2017-12	Initial version

1.3 Related Documents

Please refer to related documents as listed below:

Document	Description
SD02063S/04/EN/01.17	Integration Tutorial HON02
SD02064S/04/EN/01.17	Integration Test Summary HON02
SD02065S/04/EN/01.17	List of Tested Devices and Versions HON02

2 Target Market

2.1 Industry Application

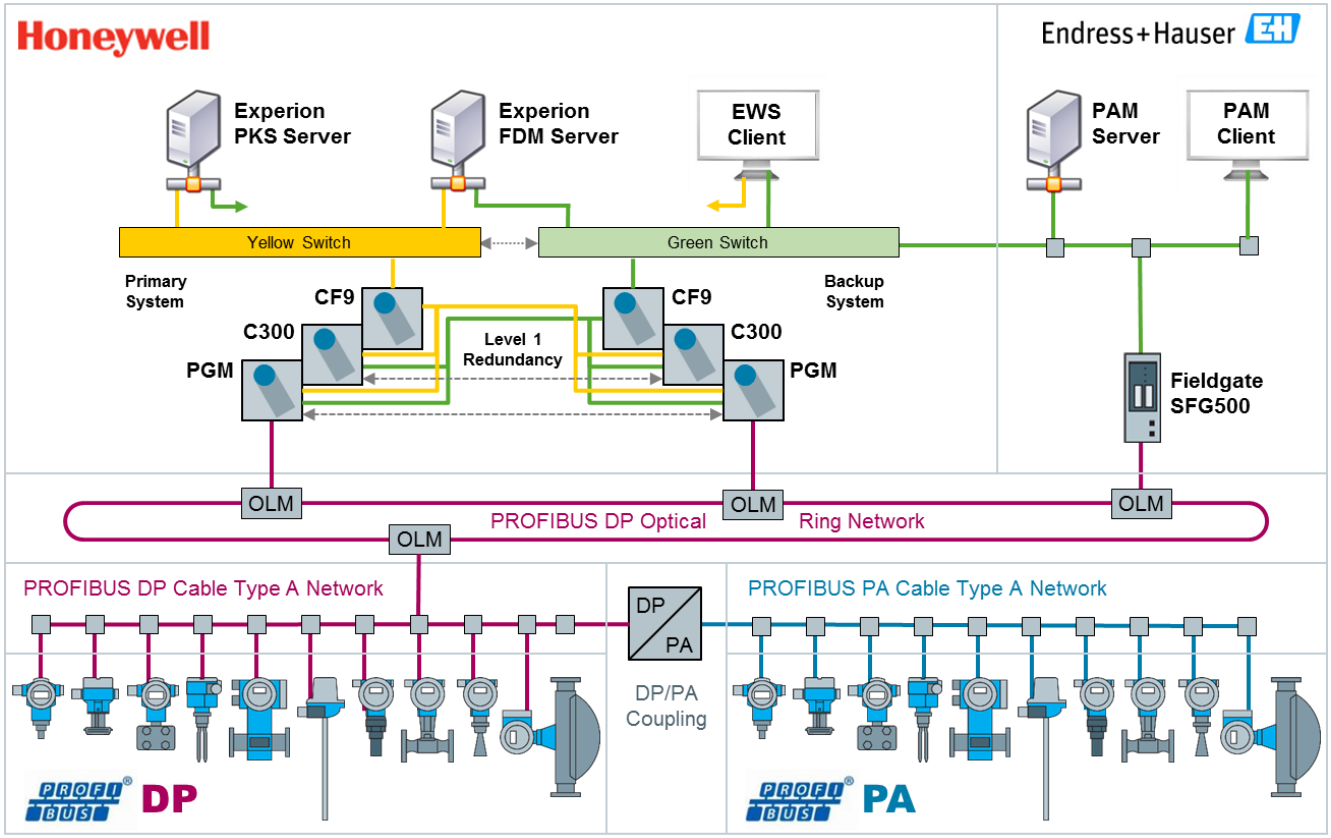
This reference topology is designed to serve applications in Chemical industry.

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 Honeywell Process Solutions:

The yellow and green switches establish a redundant Ethernet backbone for all Honeywell Experion®PKS servers, workstations and control units. Each control unit consists of at least two CF9 control firewall modules and two C300 controller modules to provide level 1 redundancy. PGM modules serve to connect to the underlying PROFIBUS DP/PA network. Core element on top of the system backbone is the Experion®PKS software for control engineering, complemented with Experion®FDM software for asset management.

Reference hardware:

Honeywell	Article	Description
Experion®PKS 	Processor: CC-PCF901 IOTA: CC-TCF901	Control Firewall with 9 ports (CF9)
Experion®PKS 	Processor: CC-PCNT02 IOTA: CC-TCNT01	C300 Controller
Experion®PKS 	Processor: CC-IP0101 IOTA: CC-TP0X01	PROFIBUS Gateway Module with 2 DP segments (PGM2)

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
Fieldgate SFG500 	SFG500 SFM500-A1	Ethernet / PROFIBUS DP gateway Asset Management Module for Fieldgate SFG500

Complementary to this, Endress+Hauser also supports integral means of Honeywell with device drivers for Experion®FDM.

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, Honeywell Process Solutions 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. Honeywell Process Solutions and Endress+Hauser recommend using the SK3 Power Hub from Pepperl+Fuchs for this reference topology.

Reference hardware:

PEPPERL+FUCHS	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. Honeywell Process Solutions and Endress+Hauser recommend equipment provided by Pepperl+Fuchs and R.STAHL for this reference topology.

Recommended hardware:

PEPPERL+FUCHS	Article	Description
Segment Protector 	R2-SP-IC*	Fieldbus device coupler for safe area or Zone 2 application. Optional 4, 6, 8 or 10 spurs.
Field Barrier 	R4D0-FB-IA*	Fieldbus device coupler for Zone 1 application. Optional 8, 10 or12 spurs. Compliant to FISCO and Entity concept.

STAHL	Article	Description
Field Device Coupler Zone 2 En n 	9410/34-*	Fieldbus device coupler for safe area or Zone 2 Ex n application. Optional 4, 8 or 12 spurs.
Field Device Coupler Zone 1 Ex i 	9411/21-*	Fieldbus device coupler for Zone 1 Ex i application. Optional 4 or 8 spurs. Compliant to FISCO concept.

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 Honeywell Process Solutions 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	Device Type
Promass 83 	83F	Coriolis Flow Transmitter	0x1529
Promag 53 	53P	Electromagnetic Flow Transmitter	0x1526

3.5.2 PROFIBUS PA devices

Reference hardware:

Endress+Hauser People for Process Automation	Article	Description	Device Type
Omnigrad M 	TR10+TMT84	Temperature Transmitter	0x1551
Cerabar S 	PMC71	Absolute and Gauge Pressure Transmitter	0x1541

Reference hardware:

Endress+Hauser People for Process Automation	Article	Description	Device Type
Liquiphant 	FTL51	Vibronic Point Level Detection	0x152B
Deltabar S 	PMD75	Differential Pressure Transmitter	0x1542
Micropilot 	FMR51	Radar Level Transmitter	0x1559
Cerabar M 	PMP51	Absolute and Gauge Pressure Transmitter	0x1553
Gammapilot 	FMG60	Radiometric Level and Density Transmitter	0x1548
Prowirl 200 	7F2B	Vortex Flow Transmitter	0x1564
Levelflex 	FMP51	Guided Radar Level Transmitter	0x1558
Liquiline M 	CM42 CPS11D CYK10	Liquid Analyzer Transmitter Memosens Digital pH Sensor Memosens Digital Data Cable	0x1543 0x1544 0x154B

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