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Technical Description

S900 I/O Application-Guide CI920S/CI920B replaced by CI920AS/CI920AB

Products Concerned

Installed Products

Item	Article number	Item Description
CI920B V1.5.9	3BDS014112	Communication Interface for Zone 2
CI920S V1.5.9	3BDS014111	Communication Interface for Zone 1
BP910S	3KDE175831L9100	Intrinsically Safe PROFIBUS DP connector

Replaced by

Item	Article number	Item Description
CI920AB V2.1.0	3BDH000691R1	Communication Interface for Zone 2
CI920AS V2.1.0	3BDH000690R1	Communication Interface for Zone 1
BP914S	3BSE067082R1	Intrinsically Safe PROFIBUS DP connector

Reference Documents

Reference	Document number	Title
[1]	2PAA107377	S900 I/O Release Notes PROFIBUS DP Communication Interface CI920A V2.1.0
[2]	2PAA107376	S900 I/O System - CI920S / CI920B replaced by CI920AS / CI920AB
[3]	3BDD015032R0101	I/O System S900 PROFIBUS Interface CI920 V1.5.9 Release Notes
[4]	3BDD010432R0103	I/O System S900 Assembly and Installation Guide, S- and N-System with power supply SA910
[5]	3BDD010421R0303	I/O System S900 Assembly and Installation Guide, S- and N-System with power supply SA920
[6]	3BDD010421R0201	800xA – Control and I/O S900 I/O System Version 5.0 Installation Guide S- and N-System with Power Supply SA910
[7]	3BDD010421R0401	800xA – Control and I/O S900 I/O System Version 5.0 Installation Guide S- and N-System with Power Supply SA920
[8]	3BDD010432R0103	I/O System S900 Assembly and Installation Guide, B-version with power supply SA910
[9]	3BDD010432R0303	I/O System S900 Assembly and Installation Guide, B-version with power supply SA920
[10]	3BDD010432R0201	800xA – Control and I/O S900 I/O System Version 5.0 Installation Guide B-System with Power Supply SA910
[11]	3BDD010432R0401	800xA – Control and I/O S900 I/O System Version 5.0 Installation Guide B-System with Power Supply SA920
[12]	3BDD010421R0501	S900 I/O Manual Installation Guide S-N-System SA920 CI920A
[13]	3BDD010421R0503	S900 I/O Manual Installation Guide S-N-System SA920 CI920A
[14]	3BDD010432R0501	S900 I/O Manual Installation Guide B-System SA920 CI920A
[15]	3BDD010432R0503	S900 I/O Manual Installation Guide B-System SA920 CI920A

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Terminology

Term	Definition
*	Used as wildcard for 'S' or 'B', suffix of S900 components item
	Example: CI920A* means both CI920AB and/or CI920AS
	Used as wildcard for 'S', 'B', 'N', 'AS' or 'BS' suffix of S900 components item in configuration tools as DTM, HWD, GSD
x	Used as wildcard for sub-revisions '0', '1', … '9'
	Example: CI920S V 1.4.x means CI920S V 1.4.1 and /or CI920 V 1.4.2

Description

1. General

This document provides information that will help you to update the communication interface CI920* to CI920A* in existing plants as smoothly as possible.

The CI920A* is the successor of the CI920*. The previously used types CI920S and CI920B no longer have the life cycle status 'Active'. The compatibility of the new communication interfaces CI920AS and CI920AB to the CI920S and CI920B is sufficient so that the predecessor types (CI920S/CI920B) are no longer required. If there is a need for replacement, you should therefore use the new types CI920AS or CI920AB.

Differences:
- The main difference between the new types (CI920AS/CI920AB) and the predecessor communication interfaces (CI920S/CI920B) is the PROFIBUS connection for the intrinsically safe PROFIBUS. The physical layer of the communication interfaces CI920S and CI920B had previously been designed according to manufacturer specifications in accordance with R. STAHL. The physical layer of the communication interfaces CI920AS and CI920AB now meets the standard according to PROFIBUS International Guideline RS485-IS.
- The communication interfaces CI920AS and CI920AB have been type approved according to explosion protection standards EN 60079-0:2006, EN 60079-11:2007 and EN 60079-25:2004.
- For the software design of the new communication interface CI920A* 2.1, all existing functions of the communication interface CI920* 1.5.9 with external relevance have been maintained. The existing system integrations in 800xA (HW Library, DTM), Melody (DTM) and Freelance (GSD, DTM) can therefore still be used without any changes.
- Identified bugs of the communication interface CI920* in version 1.5.9 have been fixed in the communication interface CI920A* Version 2.1. The bug fixing is described in the Release Notes 2PAA107377 [1] for the communication interface CI920A* 2.1 in the 'Corrected Behavior' section.

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2. Compatibility with existing systems

2.1.1 Hardware compatibility with existing systems

The following installations of the intrinsically safe PROFIBUS segment can be found in existing plants:

Installation type	Start of bus (master side)	S900 at center of bus		S900 at end of bus	
	PROFIBUS isolating repeater/ coupler	PROFIBUS connector	S900 communication interface	PROFIBUS connector	S900 communication interface
1	BI912S	BP910S (bus termination: off)	CI920S or CI910B	BP910S (bus termination: on)	CI920S or CI910B
2	BI913S				
3	BI914S				
4	BI933S				
5	BI934S				

The existing installation types can be converted as follows using the new CI920AS or CI920AB.

2.1.2 Communication interface update without updating the physical layer

Only the S900 communication interfaces are replaced (highlighted grey), the network components are not changed. The intrinsically safe physical layer according to manufacturer specification in accordance with R. STAHL remains unchanged.

Installation type	Start of bus (master side)	S900 at center of bus		S900 at end of bus	
	PROFIBUS isolating repeater/ coupler	PROFIBUS connector	S900 communication interface	PROFIBUS connector	S900 communication interface
1	BI912S	BP910S (bus termination: off)	**CI920AS or CI910AB**	BP910S (bus termination: on)	**CI920AS or CI910AB**
2	BI913S				
3	BI914S				
4	BI933S				
5	BI934S				

When converted during operation, it is possible to temporarily use a mixed configuration consisting of CI920* and CI920A* on the same intrinsically safe bus segment.

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