

Profibus-DPV1/SPA Gateway

SPA-ZC 302

Product Guide



spa-zc302_rightco300



Features

- Profibus DP Version 1 connectivity for devices with SPA bus interface
- Internal power supply
- Support of SPA bus interface with RS-485, RS-232 or TTL levels
- Easy-to-use configuration tool
- Library of pre-defined standard configurations
- Support of user defined SPA messages in acyclic Profibus messages
- Support of RS-485 Profibus interface
- Support of circuit breaker control operations in selected configurations
- Support for up to 16 SPA slaves
- Reading multiple binary data using SPA

Application

Introduction

The SPA-ZC 302 is an interface module for SPA bus protection relays, that provides connectivity to the Profibus DP fieldbus. The Profibus DP specification and the structure of its messages are defined in the European standard EN50170.

Standard configuration templates

This section lists the standard configurations that are designed for use with SPA-ZC 302 gateways. Standard configuration templates consist of pre-defined signals that allows easy configuration of the gateway.

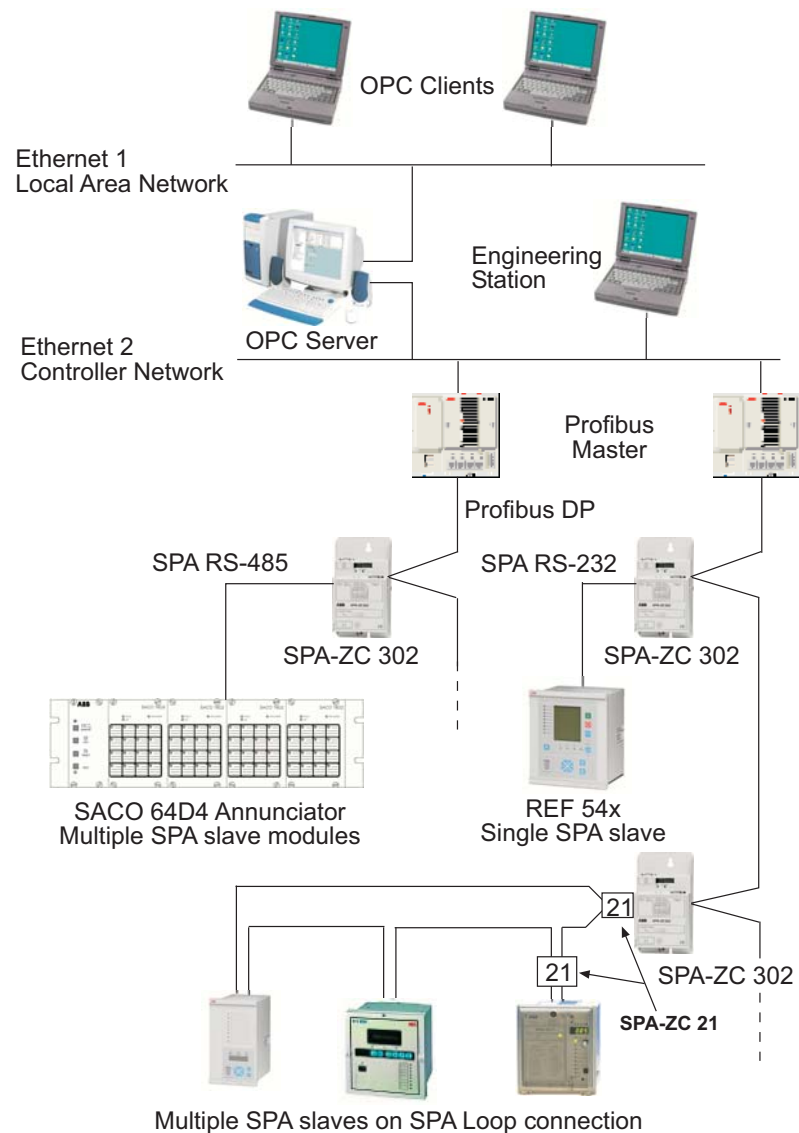


Fig. 1 An application scene

Application (cont'd)

Standard configuration templates

Relay type ^{*)}	Standard configuration template																							
	SPAJ_SPAU	SPAM150	SPAU140	SACO16A3	SACO16D1_3	SACO64D4	SPAU341	SPAD346	SPAD346C3	REM 610	REF 610	REX 521	REX521_M01_M02	REX521_H05_H07	REX521_H05_08_09	RE500	RE500_Motor	REM 54_	RE500_Feeder	RET54_Basic	RET54_Multi	RET54_Control	RET 521	
SPAJ 140 C	X																							
SPAJ 141 C	X																							
SPAJ 144 C	X																							
SPAJ 160 C	X																							
SPAM 150 C		X																						
SPAU 130 C	X																							
SPAU 140 C			X																					
SACO 16A3				X																				
SACO 16D1					X																			
SACO 16D3					X																			
SACO 64D4						X																		
SPAU 341							X																	
SPAD 346								X																
SPAD 346 C3									X															
REM 610										X														
REF 610											X													
REF 541																	X				X			
REF 541R																	X	X			X			
REF 543																	X				X			
REF 543R																	X	X			X			
REF 545																	X				X			
REM 543																	X		X		X			
REM 543R																	X	X	X		X			
REM 545																	X		X		X			
REM 545R																	X	X	X		X			
REX 521 B01												X												
REX 521 B02												X												
REX 521 H02												X												
REX 521 H03												X												
REX 521 H04												X												
REX 521 H05												X		X	X									
REX 521 H06												X												
REX 521 H07												X		X										
REX 521 H08												X			X									
REX 521 H09												X			X									
REX 521 M01												X	X											
REX 521 M02												X	X											
RET 54 Basic																	X				X			
RET 54 Multi																	X					X		
RET 54 Control																							X	
RET 521																								X

*)Protection relay types marked with an R contain a RTD card that enable use of analog inputs.

Design

Module parts



Fig. 1 Parts of SPA-ZC 302

Technical data

Interfaces

Profibus DP version 1 interface

- RS-485 twisted pair
- 9-pin female D-connector

SPA bus interface

- RS-232, RS-485 or TTL levels
- 9-pin female D-connector

Power supply

SPA-ZC 302

- Input voltage: 110 V...240 V AC/DC
- Output voltage (conf. with DIP switch 1.5): +8 V DC unregulated from pin 9 (RS-485, TTL)

Supply current consumption: <80 mA

Environmental conditions

Specified ambient service temperature range	-10...+55°C
Transport and storage temperature range	-40...+70°C
Maximum relative humidity (without condensation)	95%

Environmental tests

Dry heat test according to IEC 60068-2-2	+55°C
Dry cold test according to IEC 60068-2-1	-10°C
Damp heat test according to IEC 60068-2-30	RH > 93%, 55°C, 6 cycles
Degree of protection by enclosure of the device case according to IEC 60529	IP20

Electromagnetic compatibility tests

The EMC immunity test level fulfils the requirements specified below		
1 MHz burst disturbance test, class III, IEC 60255-22-1	common mode	2.5 kV
	differential mode	1.0 kV
Electrostatic discharge test, class III, IEC 61000-4-2 and IEC60255-22-2	for contact discharge	6 kV
	for air discharge	8 kV
Radio frequency interference test	conducted, common mode IEC 61000-4-6 and IEC 60255-22-6	10 V (rms), f = 150 kHz...80 MHz
	radiated, amplitude-modulated IEC 61000-4-3 and IEC 60255-22-3	10 V/m (rms), f = 80...1000 MHz
	radiated, pulse-modulated ENV 50204	10 V/m, f = 900 MHz
Fast transient disturbance test IEC 60255-22-4 and IEC 60255-22-5	power supply	4 kV
Surge immunity test IEC 61000-4-5	power supply	4 kV, line to earth 2 kV, line to line
Power frequency (50 Hz) magnetic field IEC 61000-4-8	300 A/m continuous	
Voltage dips and short interruptions IEC 61000-4-11	30%, 10 ms 60%, 100 ms 60%, 1000 ms >90%, 5000 ms	
Electromagnetic emission tests EN 55011 and IEC 60255-25	conducted RF emission (mains terminal)	EN 55011, class A, IEC 60255-25
	radiated RF emission	EN 55011, class A, IEC 60255-25
CE approval	Complies with the EMC directive 89/336/EEC and the LV directive 73/23/EEC	

Dimensions and weight

Type	Dimensions [mm]	Weight [g]
SPA-ZC 302	197 x 104 x 50	530

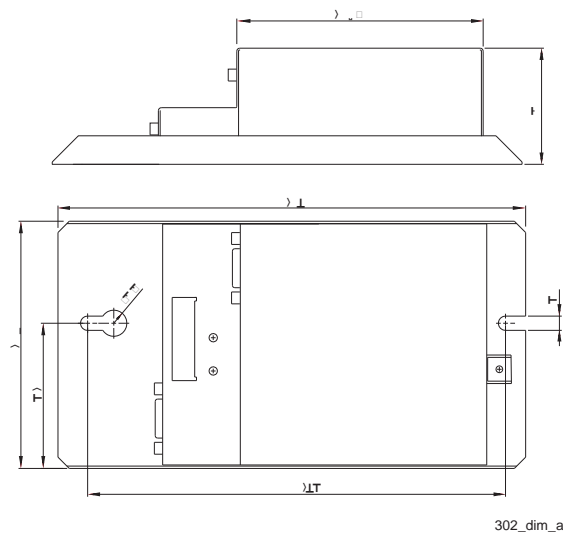


Fig. 2 Dimensions of the SPA-ZC 302 module

Ordering**SPA-ZC 302-BA**

Includes:

- SPA-ZC 302 module
- Connection cable for configuring SPA-ZC 302 module and connecting SPA bus relays, for example REF 541/3/5, RET 541/3/5, REM 543/5 and SPACOM (Order number: 1MRS120541)
- Connection cable for SPA bus relays, for example REX 521, RE_ 610 relays and SACO annunciator units (Order number: 1MRS120539)
- Gender changer
- This manual
- SPA-ZC 302 configuration CD

With REF 541/3/5, RET 541/3/5 and REM 543/5, the following cable information must be noticed:

- SPA-ZC 302 to port X3.2 (RS-232, protocol 2). Use cable 1MRS120513-003. This has to be ordered separately.
- SPA-ZC 302 to port X3.3 (RS-485, protocol 3). Use cable 1MRS120541 included in the delivery of SPA-ZC 302.

References**Additional information**

• Standard Configuration Templates	1MRS755177
• SPA-ZC 302 configuration CD	1MRS752534-MCD
• SPA-ZC 302 Profibus-DVP1/SPA Gateway Installation and Commissioning Manual	1MRS755014
• SPA-bus Communication Protocol v2.5	1MRS750076-MTD



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