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TÜV SÜD Rail GmbH · Barthstraße 16 · D-80339 München · Germany

**Bernecker + Rainer**  
**Industrie-Elektronik Ges.m.b.H.**  
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Your reference/letter of	Our reference/name	Phone extension/e-mail	Fax extension	Date	Page
	kl	+49 (89) 5791-3233	-2933	November 16th, 2017	1 of 6
	K. Leupold	Klaus.leupold@tuev-sued.de			
	_____ / FS EN 50156 SafeLOGIC_V1.1.docx				

## Re: Conformity of SafeLOGIC and SafeIO according to EN 50156-1:2015

Dear Mr. Kaufleitner,

we confirm the conformity of the SafeLOGIC and SafeIO modules with the requirements of EN 50156-1:2015.

The conformity assessment did not cover the suitability of the modules for applications on board of ships.

The list of modules is given in Table 1. The related manuals are depicted in the mentioned datasheets.

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Germany



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No.	Product name	Description
SL.1	X20SL8000	SafeLOGIC Standard
SL.2	X20SL8001	SafeLOGIC Plus
SL.3	X20SL8010	SafeLOGIC Standard, SafeMOTION
SL.4	X20SL8011	SafeLOGIC Plus, SafeMOTION
SL.1-4	Technical Datasheet X20SL8000, X20SL8001, X20SL8010, X20SL8011	
SL.5	X20SLH000	SafeLOGIC Standard, SERCOS III Interface
SL.6	X20SLH001	SafeLOGIC Plus, SERCOS III Interface
SL.5-6	Technical Datasheet X20SLH000, X20SLH001	
SL.7	X20SLX210	SafeLOGIC with Safe Digital Input, 2 channel
SL.8	X20SLX410	SafeLOGIC with Safe Digital Input, 2 channel
SL.9	X20SLX910	SafeLOGIC with Safe Digital Input, 2 channel
SL.7-9	Technical Datasheet X20SLX210, X20SLX410, X20SLX910	
SL.10	X20SL8100	SafeLOGIC Basic
SL.11	X20SL8101	SafeLOGIC Basic with local X2X
SL.12	X20SL8110	SafeLOGIC Basic with IF – Slot
SL.10-12	Technical Datasheet X20SL8100, X20SL8101, X20SL8110	
SL.13	X20SLX811	SafeLOGIC with Safe Digital Input, 8 channel
SL.14	X20SLX806	with 8 channel SI, 6 channel SO
SL.15	X20SLX842	with 8 channel SI, 6 channel SO
SL.16	X20SLX402	with 4 channel SI, 2 channel SO
SL.13-16	Technical Datasheet X20SLX811, X20SLX806, X20SLX842, X20SLX402	
cSL.1	X20cSLX210	SafeLOGIC with Safe Digital Input, 2 channel
cSL.2	X20cSLX410	SafeLOGIC with Safe Digital Input, 4 channel
cSL.3	X20cSLX910	SafeLOGIC with Safe Digital Input, 20 channel
cSL.1-3	Technical Datasheet X20cSLX210, X20cSLX410, X20cSLX910	
cSL.4	X20cSL8100	SafeLOGIC Basic



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No.	Product name	Description
cSL.5	X20cSL8101	SafeLOGIC Basic with local X2X
cSL.6	X20cSL8110	SafeLOGIC Basic with IF – Slot
cSL.4	Technical Datasheet X20cSL8100, X20cSL8101, X20cSL8110	
SA.1	X20SA4430	Safe Analog Input, 2x2 channel
SA.1	Technical Datasheet X20SA4430	
SA.2	X20ST4492	Safe Temperature Input, 2x2 channel
SA.2	Technical Datasheet X20ST4492	
SI.1	X20SI2100	Safe Digital Input, 2 channel
SI.2	X20SI4100	Safe Digital Input, 4 channel
SI.3	X20SI9100	Safe Digital Input, 20 channel
SI.6	X20SI8110	Safe Digital Input, 8 channel
SI.1, 2, 3, 6	Technical Datasheet X20SI2100, X20SI4100, X20SI9100, X20SI8110	
SI.4	9AX2X.01-000	Safe Digital Input, 8 channel SI
SI.5	9APLK.01-000	Safe Digital Input, 8 channel SI
SI.7	B050006543xx-yy	Safe Digital Input, 8 channel SI
SI.8	B050006677xx-yy	Safe Digital Input, 8 channel SI
SI.4, 5, 7, 8	Technical Datasheet 9AX2X.01-000, 9APLK.01-000	
SO.1	X20SO2110	Safe Digital Output, 2 channel, 0.5 A
SO.2	X20SO2120	Safe Digital Output, 2 channel, 2 A
SO.3	X20SO4110	Safe Digital Output, 4 channel, 0.5 A
SO.4	X20SO4120	Safe Digital Output, 4 channel, 2 A
SO.1-4	Technical Datasheet X20SO2110, X20SO2120, X20SO4110, X20SO4120	
SO.5	X20SO6300	Safe Digital Output, 6 channel, 0.2 A
SO.5	Technical Datasheet X20SO6300	
SO.6	X20SO2530	Safe Digital Output, 2 channel relay SO, 240 V
SO.6	Technical Datasheet X20SO2530	
SO.7	X20SP1130	Safe Digital Output, 1 channel, 10 A, Power Supply
SO.7	Technical Datasheet X20SP1130	



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No.	Product name	Description
SC.1	X20SC2432	Safe Digital Mixed, 2 channel SI, 2 channel relay 6 A
SC.1	Technical Datasheet X20SC2432	
SC.2	X20SC2212	Safe Digital Mixed, 6 channel SI, 2 channel SO, 0,5 A
SC.2	Technical Datasheet X20SC2212	
SC.3	X20SC0806	Safe Digital Mixed, 8 channel SI, 6 channel SO
SC.4	X20SC0842	Safe Digital Mixed, 8 channel SI, 6 channel SO
SC.5	X20SC0402	Safe Digital Mixed, 4 channel SI, 2 channel SO
SC.3 - 5	Technical Datasheet X20SC0806, X20SC0842, X20SC0402	
SD.1	X20SD1207	safe digital counter module, 1 failsafe counter channel, 7 kHz, 24 VDC
SD.1	Technical Datasheet X20SD1207	
SRT.1	X20SRT806	ReAction for Safety, 8 channel SI, 6 channel SO
SRT.2	X20SRT842	ReAction for Safety, 8 channel SI, 6 channel SO
SRT.3	X20SRT402	ReAction for Safety, 4 channel SI, 2 channel SO
SC.3 - 5	Technical Datasheet X20SRT806, X20SRT842, X20SRT402	
X67.1	X67SC4122.L12	Safe Digital Mixed, 8 channel SI, 4 channel SO 2 A
X67.1	Technical Datasheet X67SC4122.L12	
X67.2	X67SI8103	Safe Digital Input, 8 channel SI
X67.2	Technical Datasheet X67SI8103	
cSA.1	X20cSA4430	Safe Analog Input, 2x2 channel
cSA.1	Technical Datasheet X20cSA4430	
cSA.2	X20cST4492	Safe Temperature Input, 2x2 channel
cSA.2	Technical Datasheet X20cST4492	
cSI.1	X20cSI2100	Safe Digital Input, 2 channel
cSI.2	X20cSI4100	Safe Digital Input, 4 channel
cSI.3	X20cSI9100	Safe Digital Input, 20 channel
cSI.1-3	Technical Datasheet X20cSI2100, X20cSI4100, X20cSI9100	
cSO.1	X20cSO2110	Safe Digital Output, 2 channel, 0.5 A



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No.	Product name	Description
cSO.2	X20cSO2120	Safe Digital Output, 2 channel, 2 A
cSO.3	X20cSO4110	Safe Digital Output, 4 channel, 0.5 A
cSO.4	X20cSO4120	Safe Digital Output, 4 channel, 2 A
cSO.1-4	Technical Datasheet X20cSO2110, X20cSO2120, X20cSO4110, X20cSO4120	
cSO.5	X20cSO6300	Safe Digital Output, 6 channel, 0.2 A
cSO.5	Technical Datasheet X20cSO6300	
cSO.6	X20cSO2530	Safe Digital Output, 2 channel relay SO, 240 V
cSO.6	Technical Datasheet X20cSO2530	
cSO.7	X20cSP1130	Safe Digital Output, 1 channel, 10 A, Power Supply
cSO.7	Technical Datasheet X20cSP1130	
cSC.1	X20cSC2432	Safe Digital Mixed, 2 channel SI, 2 channel relay 6 A
cSC.1	Technical Datasheet X20cSC2432	
cSC.2	X20cSC2212	Safe Digital Mixed, 6 channel SI, 2 channel SO, 0,5 A
cSC.2	Technical Datasheet X20cSC2212	
cSD.1	X20cSD1207	safe digital counter module, 1 failsafe counter channel, 7 kHz, 24 VDC
cSD.1	Technical Datasheet X20cSD1207	

Table 1

The following conditions of use have to be considered:

1. The manuals describe possible configurations for Category 3 of EN 13849-1, these configurations are not sufficient for conformity with EN 50156-1:2015. The conditions for conformity with Category 4 of EN 13849-1 are mandatory for the use in EN 50156-1 based applications. These are in particular:
  - a. X20 Safe DO shall only be used with parameter setting "Disable\_OSSD" = NO (Default)
  - b. X20 Safe Relay Out X20SO2530 shall only be used with both relay channels in serial connection
  - c. X20 Safe Relay Out X20SC2432 shall only be used in two-channel input configuration and with both relay channels in serial connection
  - d. X20 Safe Digital Mixed shall only be used in two-channel input configuration and parameter setting "Disable\_OSSD" = NO (Default)
  - e. X20 Safe Analog IN shall only be used in two-channel input configuration with parameter setting "Disable\_Shunttest" = NO (Default)
  - f. X67 Safe Digital Mixed shall only be used in two-channel input configuration and in case of X67SC4122.L12 parameter setting "Disable\_OSSD" = NO (Default)
2. The use of the modules is restricted to indoor applications.
3. The modules shall be installed in enclosures which conform to at least class of protection IP54 in accordance with EN 60529 or shall be installed in dry and clean rooms.
4. The modules conform with the environmental conditions class V.L.3 and V.S.3 of EN 60654-3 and EN 61131-2 for vibration in industrial environments. They shall not be used in installations with vibrations class V.H.3 of EN 60654-3.
5. The modules shall not be used in areas with a risk of explosion.
6. The safe state (tripping) of the application shall be "de-energized" (the safe state of the devices is structurally designed as a low state or cutoff and cannot be modified).
7. The manufacturers information on external maintenance/supervision and lifetime for relays (switching cycles, load) shall be observed

Kind regards

(Guido Neumann)  
TÜV SÜD Rail GmbH

(Klaus Kurth)  
TÜV SÜD Industrie Service GmbH