Function block library

TempConversion_5

for PLCnext Engineer

Documentation for
PHOENIX CONTACT function blocks
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This documentation is available in English only.

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1 Installation hint

If you did not specify a different directory during **library** installation all data in the MSI file will be unpacked to

c:\Users\Public\Documents\Phoenix Contact Libraries\PLCnext Engineer (former: PC Worx Engineer)

Please copy the library data to your PLCnext Engineer (former: PC Worx Engineer) working library directory.

If you did not specify a different directory during **PLCnext Engineer** installation the default PLCnext Engineer working library directory is

c:\Users\Public\Documents\PLCnext Engineer\Libraries (former: PC Worx Engineer\Libraries)

2 General information

This library offers function blocks for data exchange between controllers and temperature modules from Phoenix Contact.

3 Change notes

Library version	Library build	PLCnext Engineer version	Change notes	Supported PLCs
5	20200210	>= 2020.0 LTS	New: • Released for 2020.0 LTS • TECO_IL_TEMP_4_8_RTD function block TECO_5_EXA_IL_TEMP_4_8_RTD example • TECO_5_EXA_IL_TEMP_4_8_EF example	AXC F 1152 (1151412) AXC F 2152 (2404267)
4	20191002	2019.0 LTS 2019.3 2019.6 2019.9	Adapted to 2019.9	AXC F 2152 (2404267)
3	20190724	2019.0 LTS 2019.3 2019.6	Adapted to 2019.6	AXC F 2152 (2404267)
2	20190219	2019.0 LTS	Adapted to PLCnext Engineer 2019.0 LTS	AXC F 2152 (2404267)
1	20180821	PCWE 7.2.2	Converted from PC Worx 6	AXC F 1050 (2404701) AXC F 2152 (2404267)

New version number: Functional changes of at least one function block

New build number: No functional changes, but changes in the MSI file (e.g. documentation update, additional examples)

4 Function blocks

Function block	Description	Version	Supported articles	License
TECO_IL_TEMP_2	Driver function block	1	IB IL TEMP 2 RTD-PAC (2726308) IB IL TEMP 2 UTH-PAC (2727763)	none
TECO_IL_TEMP_2_Para	Parametrization function block	1	IB IL TEMP 2 RTD-PAC (2726308) IB IL TEMP 2 UTH-PAC (2727763)	none
TECO_IL_TEMP_4_8_RTD	Driver function block	1	IB IL TEMP 4/8 RTD-PAC (2863915) IB IL TEMP 4/8 RTD/EF-PAC (2897402)	none

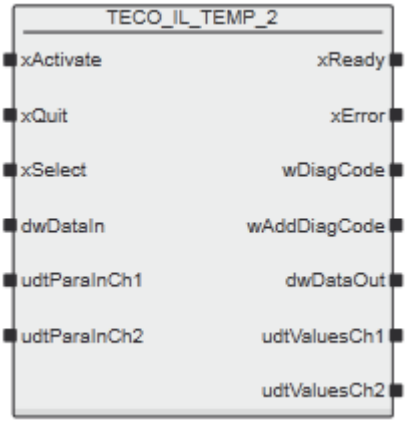
5 TECO_IL_TEMP_2

The TECO_IL_TEMP_2 and TECO_IL_TEMP_2 Para function blocks are intended for the parameterization and operation of the IB IL TEMP 2 RTD-PAC (2726308) and IB IL TEMP 2 UTH-PAC (2727763) inline modules.

5.1 TECO_IL_TEMP_2

This function block parameterizes the IB IL TEMP 2 RTD-PAC (2726308) and IB IL TEMP 2 UTH-PAC (2727763) module and reads out the value of the connected sensor.

5.1.1 Function block call



5.1.2 Input parameters

Name	Type	Description
xActivate	BOOL	Rising edge: Activates the function block. FALSE: Deactivates the function block.
xQuit	BOOL	Sets all output parameters to 0
xSelect	BOOL	Module selection: FALSE = IB IL TEMP 2 RTD-PAC (2726308) TRUE = IB IL TEMP 2 UTH-PAC (2727763)
dwDataIn	DWORD	Input double word
udtParaInCh1	TECO_UDT_TEMP_2_PARA	Structure for parameterizing channel 1
udtParaInCh2	TECO_UDT_TEMP_2_PARA	Structure for parameterizing channel 2

5.1.3 Output parameters

Name	Type	Description
xReady	BOOL	FALSE: The function block is executing services. TRUE: The function block is ready to execute services.
xError	BOOL	TRUE: An error has occurred. For details refer to wDiagCode and wAddDiagCode.
wDiagCode	WORD	Diagnosis code. Refer to diagnostic table.
wAddDiagCode	WORD	Additional diagnosis code. Refer to diagnostic table.
dwDataOut	DWORD	Output double word
udtValuesCh1	TECO_UDT_TEMP_2_VALUES	Channel 1 measured value and diagnostics
udtValuesCh2	TECO_UDT_TEMP_2_VALUES	Channel 2 measured value and diagnostics

5.1.4 Channel parameters

The channels of the RTD or UTH module are transferred via the TECO_UDT_TEMP_2_PARA structure from the TECO_IL_TEMP_2_Para auxiliary block to the TECO_IL_TEMP_2 function block. The structure contains the following variables whose parameters can be obtained from section input parameter of the TECO_IL_TEMP_2_Para auxiliary block.

5.1.4.1 TECO_UDT_TEMP_2_PARA

Name	Type	Description
iConnectionType	INT	Connection type selection (RTD only)
iReferenceResistance	INT	Reference resistor selection (RTD only)
iResolution	INT	Resolution selection (RTD and UTH)
iColdJunction	INT	Cold junction compensation selection (UTH only)
iFormat	INT	Format selection (RTD and UTH)
iSensorType	INT	Sensor type selection (RTD and UTH)
rOffset	REAL	Offset specification, dependent on resolution (RTD and UTH)

If an error in configuration is detected, the TECO_IL_TEMP_2 function block reports this via xError parameter. If a valid value is set for every parameter, xReady indicates that the TECO_IL_TEMP_2 function block is running without an error.

5.1.4.2 TECO_UDT_TEMP_2_VALUES

The measured value is displayed in the TECO_UDT_TEMP_2_VALUES structure. This structure contains the following variables:

Name	Type	Description
rValue	REAL	Measured value of the respective channel
xChError	BOOL	Error on respective channel
wChDiagCode	WORD	Diagnostic code output
wChAddDiagCode	WORD	Additional diagnostic code output

If an error (e.g., open circuit) is detected during operation, it is reported for each channel via xChError, wChDiagCode, wChAddDiagCode. The individual diagnostic codes are described in more detail in the following section Diagnostics.

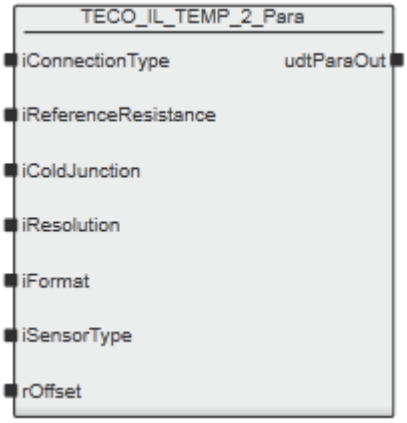
5.1.5 Diagnosis

wDiagCode	wAddDiagCode	Description
16#0000	16#0000	Function block is deactivated.
16#8000	16#8001	Overrange
	16#8002	Open circuit
	16#8004	Measured value invalid/no valid measured value available
	16#8008	Cold junction defective
	16#8010	Configuration invalid
	16#8020	Faulty supply voltage
	16#8040	Device is faulty
	16#8080	Underrange
16#C112	16#0000	Error message from the terminal during initialization of channel 1
16#C122	16#0000	Error message from the terminal during initialization of channel 2
16#C312	16#0000	Error message from the terminal during operation of channel 1
16#C322	16#0000	Error message from the terminal during operation of channel 2

5.2 TECO_IL_TEMP_2_Para

Function block to add parameters to the TECO_IL_TEMP_2_PARA struct.

5.2.1 Function block call



5.2.2 Input parameters

Name	Type	Description
iConnectionType	INT	Connection method (RTD only) 0 = 3-wire 1 = 2-wire 2 = 4-wire (channel 1 only)
iReferenceResistance	INT	Reference resistor R0 (RTD only) 0 = 100 1 = 10 2 = 20 3 = 30 4 = 50 5 = 120 6 = 150 7 = 200 8 = 240 9 = 300 10 = 400 11 = 500 12 = 1000 13 = 1500 14 = 2000 15 = 3000 (can be set)

<table>
<tr><td>iColdJunction</td><td>INT</td><td>Cold junction compensation (UTH only)

0 = internal cold junction active;
TC - measurement with internal cold junction compensation
1 = internal cold junction inactive;
TC - differential measurement cold junction compensation
2 = external cold junction PT1000;
TC - measurement with external cold junction compensation
to an ISO thermal block (for laboratory applications only)
3 = external cold junction Ni1000;
TC - measurement with external cold junction compensation
to an ISO thermal block
(for laboratory applications only)</td></tr>
<tr><td>iResolution</td><td>INT</td><td>Resolution (RTD)
<table><tr><th>Sensortype</th><th>0-10</th><th>13</th><th>14</th><th>15</th></tr><tr><td>0 =</td><td>0.1°C</td><td>1%</td><td>0.1 Ω</td><td>1 Ω</td></tr><tr><td>1 =</td><td>0.01°C</td><td>0.1%</td><td>0.01 Ω</td><td>0.1 Ω</td></tr><tr><td>2 =</td><td>0.1°F</td><td>disabled</td><td>disabled</td><td>disabled</td></tr><tr><td>3 =</td><td>0.01°F</td><td>disabled</td><td>disabled</td><td>disabled</td></tr></table>Resolution (UTH)
<table><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>0.1°C</td><td>1°C</td><td>0.1°F</td><td>1°F</td></tr><tr><td>(1µV)</td><td>(10 µV)</td><td></td><td></td></tr></table></td></tr>
<tr><td>iFormat</td><td>INT</td><td>Format (RTD and UTH)
0 = Format 1: IB standard 15-bit + sign bit with extended diagnostics. The TECO_IL_TEMP_2 block does not support other formats.</td></tr>
</table>

iSensorType	INT	Sensor type (RTD) 0 = Pt DIN 1 = Pt SAMA 2 = Ni DIN 3 = Ni SAMA 4 = Cu10 5 = Cu50 6 = Cu53 7 = Ni1000 (Landis + Gyr) 8 = Ni500 (Viessmann) 9 = KTY81-110 10 = KTY84 11 = disabled 12 = disabled 13 = potentiometer [%] 14 = linear R: 0 to 400 Ω 15 = linear R: 0 to 4000 Ω Sensor type (UTH) 0 = TC type K 1 = TC type J 2 = TC type E 3 = TC type R 4 = TC type S 5 = TC type TB 6 = TC type B 7 = TC type N 8 = TC type U 9 = TC type L 10 = TC type C 11 = TC type W 12 = TC type HK 13 = cold junction (CJ) 14 = U: voltage (-15 mV to +85 mV)
rOffset	Real	Offset (RTD and UTH) Offset specification, dependent on resolution

5.2.3 Output parameters

Name	Type	Description
udtParaOut	TECO_UDT_TEMP_2_PARA	Structure for parameterization

5.2.4 TECO_UDT_TEMP_2_PARA

The channels of the RTD or UTH module are transferred via the TECO_UDT_TEMP_2_PARA structure from the TECO_IL_TEMP_2_Para auxiliary block to the TECO_IL_TEMP_2 block. The structure contains the following variables whose parameters can be obtained from section input parameters of the TECO_IL_TEMP_2_Para auxiliary block.

Struct		
Name	**Type**	**Description**
iConnectionType	INT	Connection type selection (RTD only)
iReferenceResistance	INT	Reference resistor selection (RTD only)
iResolution	INT	Resolution selection (RTD and UTH)
iColdJunction	INT	Cold junction compensation selection (UTH only)
iFormat	INT	Format selection (RTD and UTH)
iSensorType	INT	Sensor type selection (RTD and UTH)
rOffset	REAL	Offset specification, dependent on resolution (RTD and UTH)

If an error in configuration is detected, the TECO_IL_TEMP_2 function block reports this via xError parameter. If a valid value is set for every parameter, xReady parameter indicates that the TECO_IL_TEMP_2 function block is running without an error.

5.3 Startup example

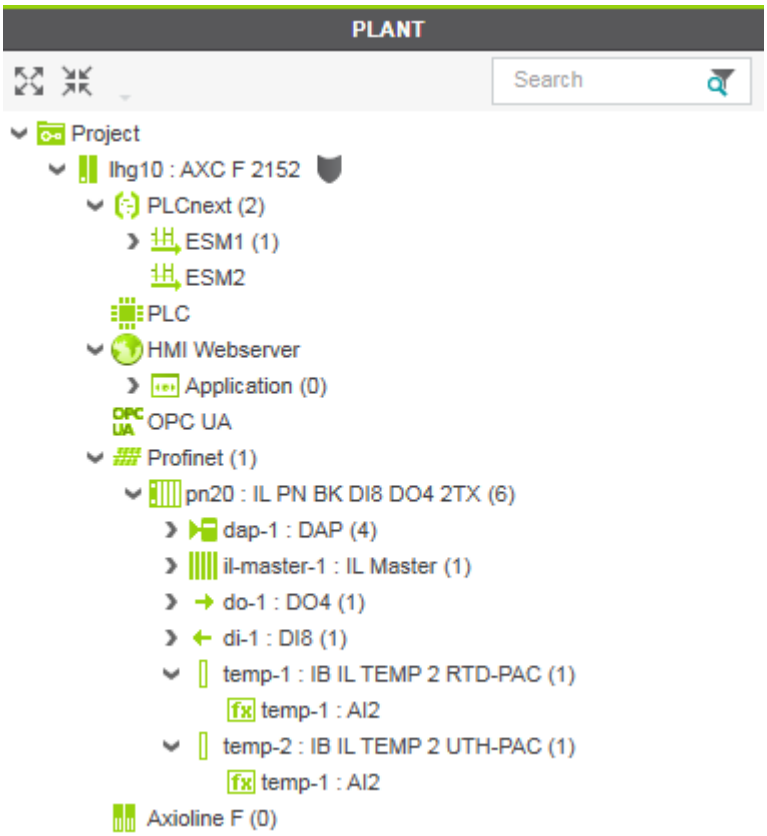
For the startup instruction of the TECO_IL_TEMP_2 and TECO_IL_TEMP_2_Para function blocks please find the following example:

- TECO_5_EXA_TEMP_2.pcwex

This example is located in the “Examples” folder of the unzipped msi file of the library.

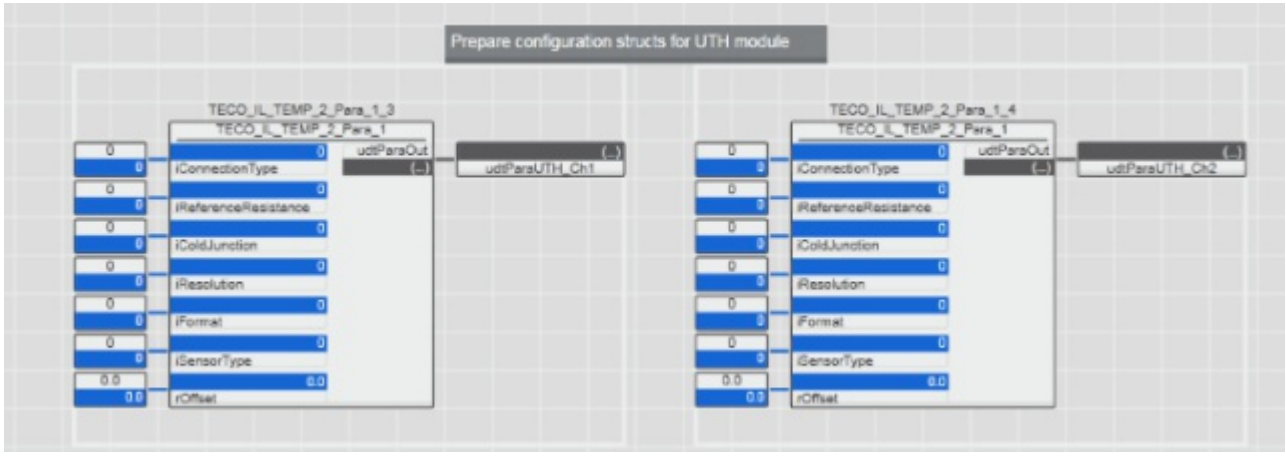
It describes the IB IL TEMP 2 RTD-PAC (2861328) and IB IL TEMP 2 UTH-PAC (2861386) modules in application with the TECO_IL_TEMP_2 and TECO_IL_TEMP_2_Para function blocks.

5.3.1 Plant

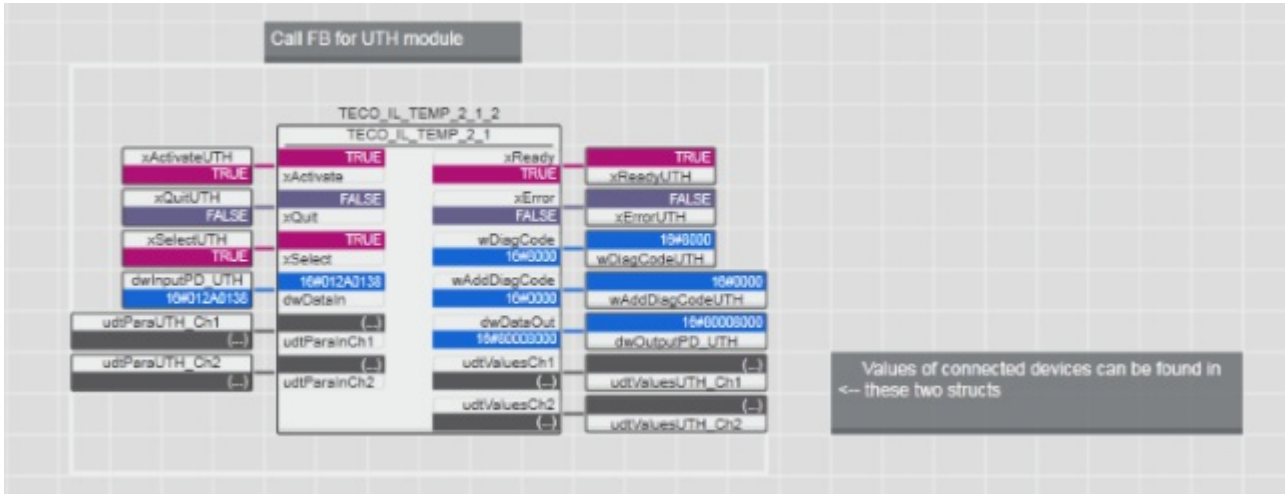


5.3.2 Parameterizing of the IB IL TEMP 2 UTH-PAC (2861386) module

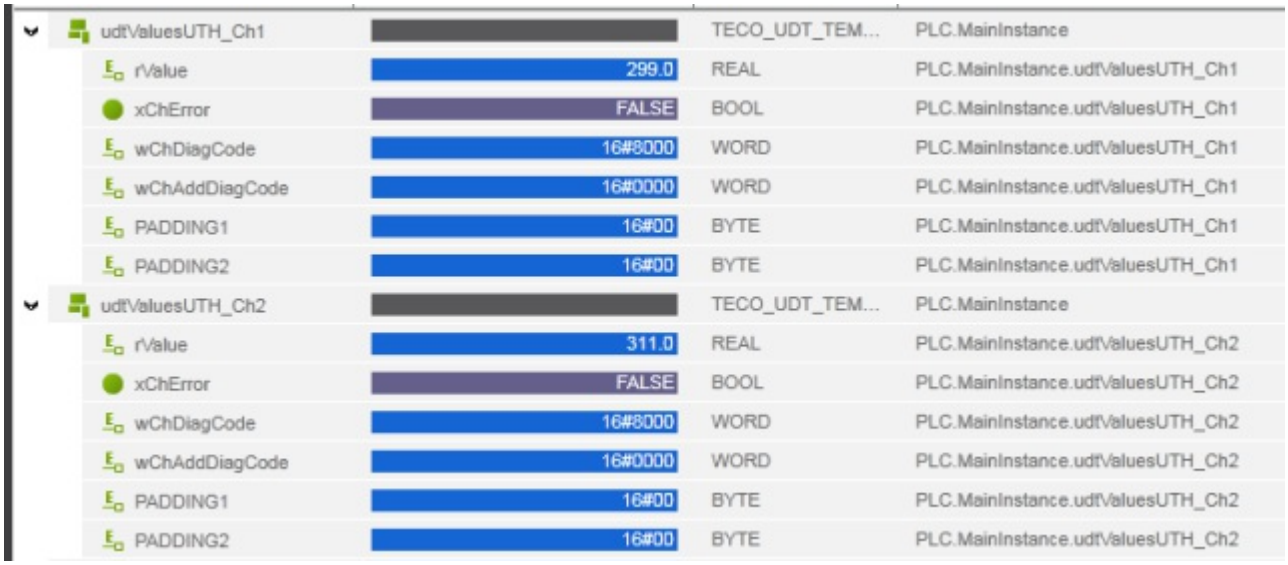
First of all, we have to set all the parameter for our application. This depends on the module (RTD or UTH) and the used sensor. To find out the perfect configuration, please refer to chapter six for the TECO_IL_TEMP_2_Para function block.



Now we connect the output structures of the TECO_IL_TEMP_2_Para function block with the TECO_IL_TEMP_2 function block and ativate it. The value of xSelect depends on the used module (RTD = FALSE, UTH = TRUE).



At least we can find the values of the sensor in the value structure.

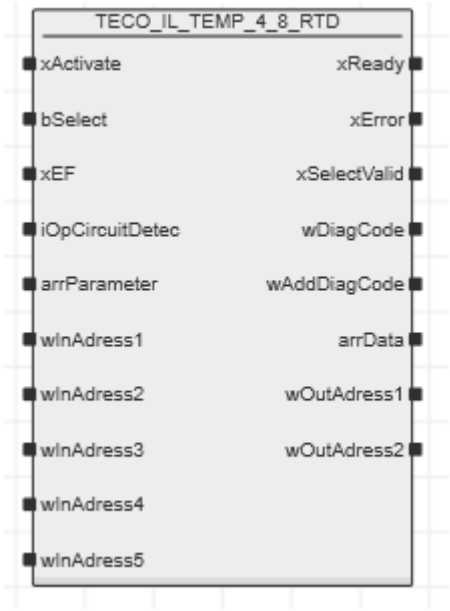


udtValuesUTH_Ch1		TECO_UDT_TEM...	PLC.MainInstance
rValue	299.0	REAL	PLC.MainInstance.udtValuesUTH_Ch1
xChError	FALSE	BOOL	PLC.MainInstance.udtValuesUTH_Ch1
wChDiagCode	16#8000	WORD	PLC.MainInstance.udtValuesUTH_Ch1
wChAddDiagCode	16#0000	WORD	PLC.MainInstance.udtValuesUTH_Ch1
PADDING1	16#00	BYTE	PLC.MainInstance.udtValuesUTH_Ch1
PADDING2	16#00	BYTE	PLC.MainInstance.udtValuesUTH_Ch1
udtValuesUTH_Ch2		TECO_UDT_TEM...	PLC.MainInstance
rValue	311.0	REAL	PLC.MainInstance.udtValuesUTH_Ch2
xChError	FALSE	BOOL	PLC.MainInstance.udtValuesUTH_Ch2
wChDiagCode	16#8000	WORD	PLC.MainInstance.udtValuesUTH_Ch2
wChAddDiagCode	16#0000	WORD	PLC.MainInstance.udtValuesUTH_Ch2
PADDING1	16#00	BYTE	PLC.MainInstance.udtValuesUTH_Ch2
PADDING2	16#00	BYTE	PLC.MainInstance.udtValuesUTH_Ch2

6 TECO_IL_TEMP_4_8_RTD

The IL_TEMP_4_8_RTD function block can be used to parameterize and operate the IB IL TEMP 4/8 RTD-PAC (2863915) and IB IL TEMP 4/8 RTD/EF-PAC (2897402) modules. Specified parameter data is subject to a plausibility check. Faults detected by the function block are represented in the diagnostics tab of the function block. This affects device error messages and limit value exceedance of the parameter data. A block call is required for each Inline terminal.

6.1 Function block call



6.2 Input parameters

Name	Type	Description
xActivate	BOOL	Rising edge: Activates the function block. FALSE: Deactivates the function block.
bSelect	BYTE	By activating the individual bits from 0 - 7 (corresponds with channel 1 to 8), the automatic read in of the individual channels is activated. From channel > 4: Multiplex mode. Individual channels are selected as follows: BYTE#01 = channel 1 BYTE#02 = channel 2 BYTE#04 = channel 3 BYTE#08 = channel 4 BYTE#10 = channel 5, etc. Channels 1 and 3 are read with BYTE#05.
xEF	BOOL	Activation for the Inline terminal IB IL TEMP 4/8 RTD/EF-PAC (2897402). TRUE: If the xEF parameter is activated, the Inline terminal IB IL TEMP 4/8 RTD/EF-PAC (2897402) should be used.

iOpCircuiteDetec	INT	ODS 0 = High sensitivity 1 = Medium sensitivity 3 = Off Only applies for EF and only as of Version 1.10 of the IB IL TEMP 4/8 RTD/EF-PAC (2897402) module.
arrParameter	FCM_ARR_TEMP_4_8_RTD_Para_1_8	Channel input parameter.
wInputAddress1	WORD	Process data input address 1 for the terminal.
wInputAddress2	WORD	Process data input address 2 for the terminal.
wInputAddress3	WORD	Process data input address 3 for the terminal.
wInputAddress4	WORD	Process data input address 4 for the terminal.
wInputAddress5	WORD	Process data input address 5 for the terminal.

6.3 Output parameters

Name	Type	Description
xReady	BOOL	FALSE: The function block is executing services. TRUE: The function block is ready to execute services.
xError	BOOL	TRUE: An error has occurred. For details refer to wDiagCode and wAddDiagCode.
xSelectValid	BOOL	Selected channels are ready.
wDiagCode	WORD	Diagnosis code. Refer to diagnostic table.
wAddDiagCode	WORD	Additional diagnosis code. Refer to diagnostic table.
arrData	FCM_ARR_TEMP_4_8_RTD_Data_1_8	Measured value and error output.
wOutputAddress1	WORD	Process data output address 1 for the terminal
wOutputAddress2	WORD	Process data output address 2 for the terminal

6.4 Block parameters

6.4.1 Channel parameters

The table describes the data structure FCM_ARR_TEMP_4_8_RTD_Para_1_8 of the input parameter. The channels can be configured with the iFilter, xConnectionType, iResistor, iResolution, and iSensortype parameters. In order to configure the filter, for example, use the following call on the input parameter arrParameter: Parameter[1].Filter. Here the number in the array corresponds to the respective channel 1 to 8.

For the meaning of the configuration values, please refer to the module data sheet.

Name	Type	Description
iFilter	INT	For the filter setting (value 0 to 3), see the module data sheet.
xConnectionType	BOOL	TRUE: 2-conductor connection FALSE: 3-conductor connection, see module data sheet.
iResistor	INT	For resistance value (value 0 to 15), see the module data sheet.
iResolution	INT	For resolution (value 0 to 3), see the module data sheet.
iSensortype	INT	Sensor type (value 0.. 11, 13..15), see the module data sheet.

6.4.2 Measured value and channel diagnostics

The table describes the data structure FCM_ARR_TEMP_4_8_RTD_Data_1_8 of the udtData output parameter. The read measured value of a channel is represented as a real number in the rValue parameter; the process data word is represented in wValue_PD. A value update can be detected in the xNDR bit. This is only ever for one cycle = TRUE. If a channel-specific error (xError) occurs, the cause must be eliminated. The error is then reset with the next read cycle. The wDeviceDiagCode can be found in the module data sheet under diagnostic codes.

Name	Type	Description
xNDR	BOOL	TRUE: New measured value is present.
xError	BOOL	Channel reports an error.
rValue	REAL	Measured value of channel.
wValue_PD	WORD	Measured value of channel.
wDeviceDiagCode	WORD	Error code for channel (IL format), see data sheet of the module under diagnostic codes.

6.5 Diagnosis

wDiagCode	wAddDiagCode	Description
16#0000	16#0000	Function block is deactivated.
16#8000	16#0000	Function block is in regular operation.
16#C010		Timeout communication.
	16#0001	Module does not respond to request or displays an error.
16#C014		Filter range limit exceeded.
	16#xxyy_yyxx	yy = channel, xx = range value
16#C015		Resistor range limit exceeded.
	16#xxyy_yyxx	yy = channel, xx = range value
16#C016		Resolution range limit exceeded.
	16#xxyy_yyxx	yy = channel, xx = range value
16#C017		Sensor type range limit exceeded.
	16#xxyy_yyxx	yy = channel, xx = range value
16#C018		Resolution not available for sensor type.
	16#xxyy_yyxx	yy = channel, xx = range value

6.6 Startup examples

For the startup instruction of the IL_TEMP_4_8_RTD function block please find the following examples:

- TECO_5_EXA_TEMP_4_8_RTD.pcwex
- TECO_5_EXA_TEMP_4_8_RTD_EF.pcwex

These examples are located in the “Examples” folder of the unzipped msi file of the library.

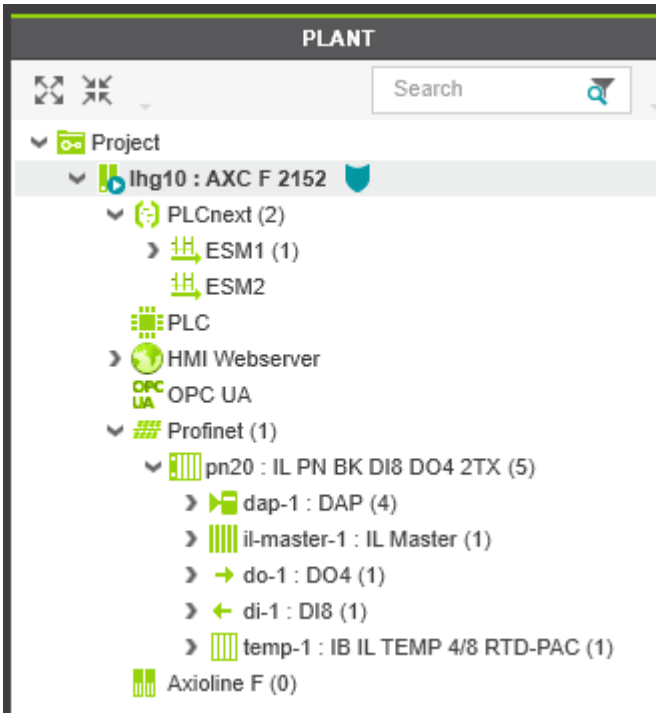
They describe the use of the IB IL TEMP 4/8 RTD-PAC (2863915) and IB IL TEMP 4/8 RTD/EF-PAC (2897402) modules with the IL_TEMP_4_8_RTD function block.

6.6.1 TECO_5_EXA_TEMP_4_8_RTD example

For this example, the following hardware is used:

- AXC F 2152 (2404267)
- IL PN BK DI8 DO4 2TX-PAC (2703994)
- IB IL TEMP 4/8 RTD-PAC (2863915)
- Pt100/B/2 cable sensor

Plant:

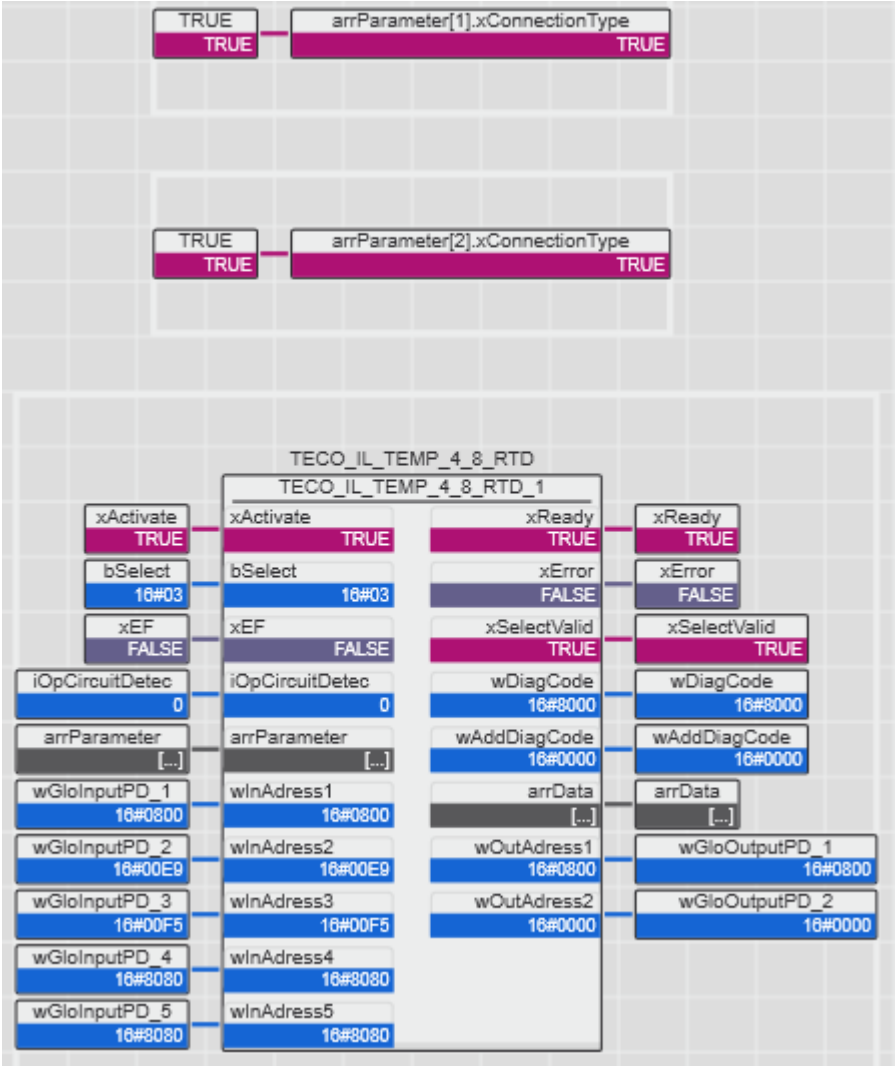


This example represents temperature measurement with a Pt1000 cable sensor via channel 1 and channel 2 of IB IL TEMP 4/8 RTD-PAC (2863915) module.

For this purpose, the inputs must be parameterized accordingly on the function block.

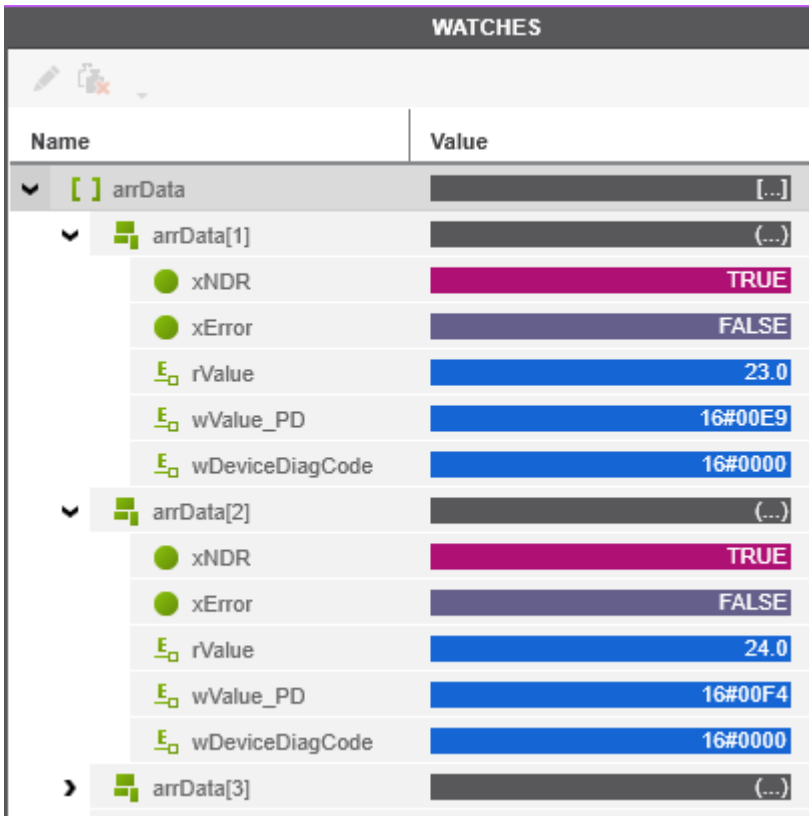
As channel 1 and 2 are used for the temperature measurement, the hexadecimal value BYTE#16#03 must be provided at the input bSelect.
The input xEF is set to FALSE because IB_IL_TEMP_4_8_RTD_PAC module is connected.

The connection type must also be parameterized at the function block. This input parameter xConnectionType can only be accessed via arrParameter. Therefore xConnection = TRUE must be set above the function block, in arrays one and two for the corresponding channels, as this is a 2-wire connection!



After the input xActivate is set to TRUE, the temperature values can be read out.

The measured values and the channel diagnostics are located in the arrData output, which can be called up in the watch window. Under the corresponding array for the channel, the measured value of the channel can be read as REAL value (rValue) or as a WORD (wValue_PD).

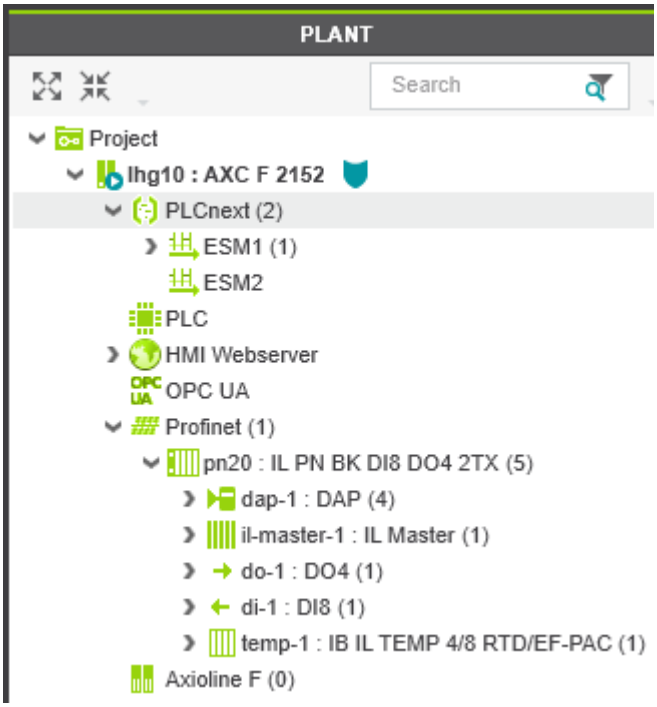


6.6.2 TECO_5_EXA_TEMP_4_8_RTD_EF example

For this example, the following hardware is used:

- AXC F 2152 (2404267)
- IL PN BK DI8 DO4 2TX-PAC (2703994)
- IB IL TEMP 4/8 RTD/EF-PAC (2897402)
- Pt100/B/2 cable sensor

Plant:

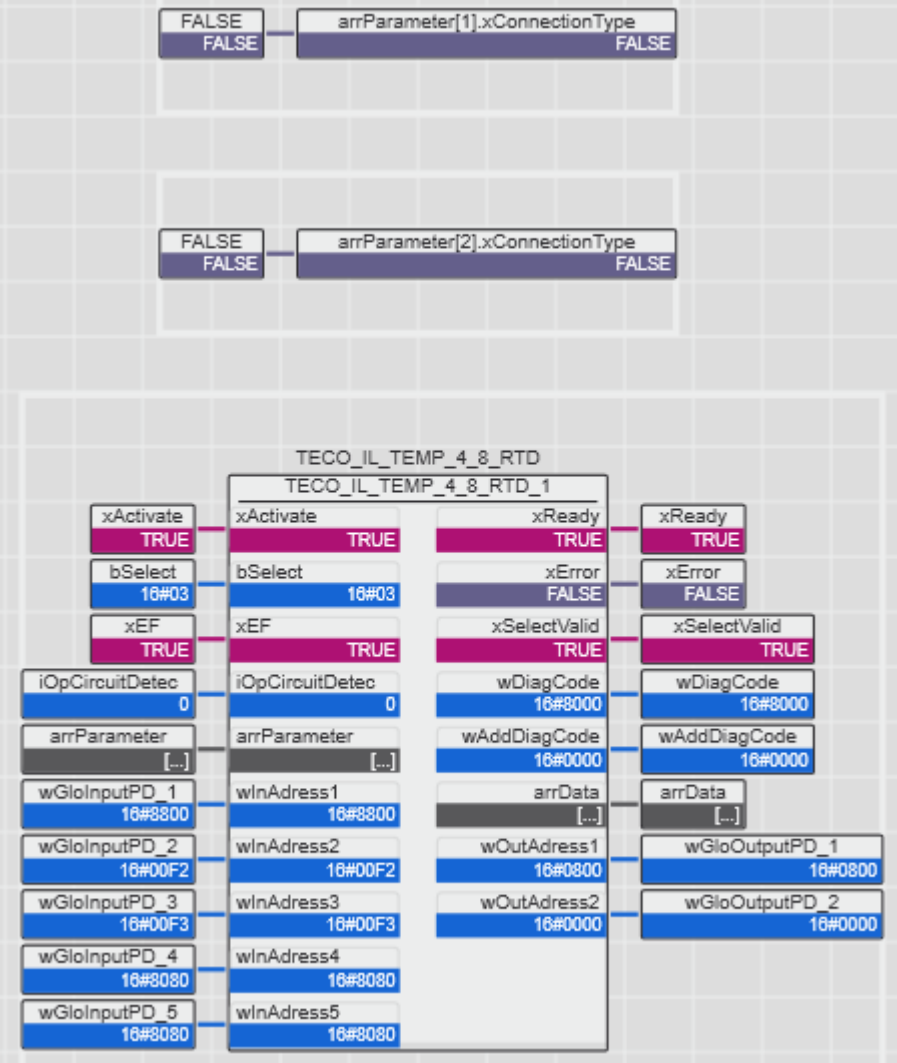


This example represents temperature measurement with a Pt1000 cable sensor via channel 1 and channel 2 of IB IL TEMP 4/8 RTD/EF-PAC (2897402) module.

For this purpose, the inputs must be parameterized accordingly on the function block.

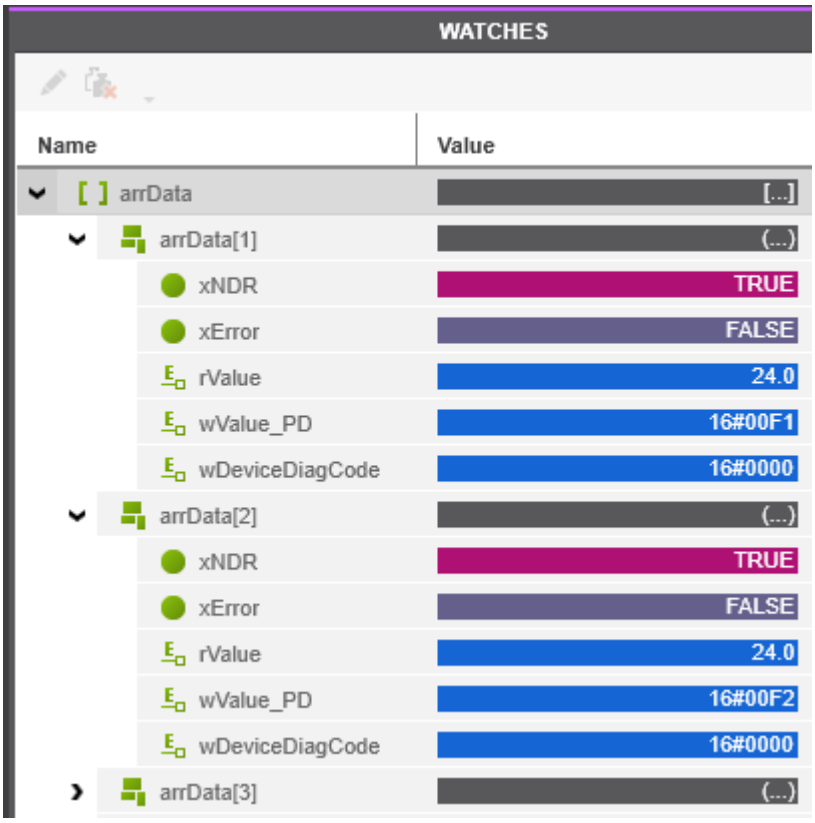
As channel 1 and 2 are used for the temperature measurement, the hexadecimal value BYTE#16#03 must be provided at the input bSelect.
The input xEF is set to TRUE because IB_IL_TEMP_4_8_RTD_EF_PAC module is connected.

The connection type must also be parameterized at the function block. This input parameter xConnectionType can only be accessed via arrParameter. Therefore xConnection = FALSE must be set above the function block, in arrays one and two for the corresponding channels, as this is a 3-wire connection!


FALSE
FALSE
arrParameter[1].xConnectionType
FALSE
FALSE
FALSE
arrParameter[2].xConnectionType
FALSE
TECO_IL_TEMP_4_8_RTD
TECO_IL_TEMP_4_8_RTD_1
xActivate
TRUE
bSelect
16#03
xEF
TRUE
iOpCircuitDetec
0
arrParameter
[...]
wGloInputPD_1
16#8800
wGloInputPD_2
16#00F2
wGloInputPD_3
16#00F3
wGloInputPD_4
16#8080
wGloInputPD_5
16#8080
xActivate
TRUE
bSelect
16#03
xEF
TRUE
iOpCircuitDetec
0
arrParameter
[...]
wInAdress1
16#8800
wInAdress2
16#00F2
wInAdress3
16#00F3
wInAdress4
16#8080
wInAdress5
16#8080
xReady
TRUE
xError
FALSE
xSelectValid
TRUE
wDiagCode
16#8000
wAddDiagCode
16#0000
arrData
[...]
wOutAdress1
16#0800
wOutAdress2
16#0000
xReady
TRUE
xError
FALSE
xSelectValid
TRUE
wDiagCode
16#8000
wAddDiagCode
16#0000
arrData
[...]
wGloOutputPD_1
16#0800
wGloOutputPD_2
16#0000

After the input xActivate is set to TRUE, the temperature values can be read out.

The measured values and the channel diagnostics are located in the arrData output, which can be called up in the watch window. Under the corresponding array for the channel, the measured value of the channel can be read as REAL value (rValue) or as a WORD (wValue_PD).



7 Appendix

7.1 Data types

```
TYPE
    ANL_ARR_W_0_6 : ARRAY [0..6] OF WORD;

    TECO_UDT_TEMP_2_PARA : STRUCT
        iConnectionType         :   INT;(*(RTD) Defines the connection type*)
        iReferenceResistance    :   INT;(*(RTD) Defines the reference resistance*)
        iResolution             :   INT;(*(RTD) Defines the output resolution*)
        iColdJunction           :   INT;(*(UTH) Defines the cold juction
                                            compensation*)
        iFormat                 :   INT;(*(RTD)(UTH) Only 0 is supported*)
        iSensorType             :   INT;(*(RTD) Defines the sensor type*)
        rOffset                 :   REAL;(*(RTD)(UTH) Offset specification,
                                            dependent on resolution *)
    END_STRUCT;

    TECO_UDT_TEMP_2_VALUES : STRUCT
        rValue                  :   REAL;(*Value of the sensor*)
        xChError                :   BOOL;(*Error at the selected channel*)
        wChDiagCode             :   WORD;(*Diagnostic code of the selected channel*)
        wChAddDiagCode          :   WORD;(*Additional diagnostic code of the
                                            selected channel*)
        PADDING1                :   BYTE;(*No function*)
        PADDING2                :   BYTE;(*No function*)
    END_STRUCT;
END_TYPE

TYPE
    FCM_UDT_TEMP_4_8_RTD_Para_V2 :
        STRUCT
        iFilter             : INT;(*Filter setting*)
        xConnectionType     : BOOL;(*Conductor connection*)
        iResistor           : INT;(*Resistance*)
        iResolution         : INT;(*Resolution*)
        iSensortype         : INT;(*Sensor type*)
        END_STRUCT;
    FCM_UDT_TEMP_4_8_RTD_Data_V2 :
        STRUCT
            xNDR                : BOOL;(*New measured value available*)
            xError              : BOOL;(*Channel error*)
            rValue              : REAL;(*Measured value of channel*)
            wValue_PD           : WORD;(*Measured value of channel*)
            wDeviceDiagCode     : WORD;(*Channel error code*)
        END_STRUCT
    FCM_ARR_TEMP_4_8_RTD_Para_1_8   : ARRAY[1..8] OF FCM_UDT_TEMP_4_8_RTD_Para_V2;
    FCM_ARR_TEMP_4_8_RTD_Data_1_8   : ARRAY[1..8] OF FCM_UDT_TEMP_4_8_RTD_Data_V2;
    T_TEMP_Factor                   : ARRAY[1..8] OF REAL;
    FCM_Test                        : ARRAY[1..8] OF WORD;
END_TYPE
```

8 Support

For technical support please contact your local PHOENIX CONTACT agency

at https://www.phoenixcontact.com

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