

Interface Protocol

OR33-RMN-PT-G3-2C (214910), OR33-RMN-PT-G3-T4 (214911), OR34-RMN-PT-G3-T4 (214914)



Vendor: di-soric GmbH & Co. KG

IODD-File: di-soric-OR3x-RMN-PT-G3-yy-20251013-IODD1.1.xml

IODD Release Date: 10/13/2025

Vendor ID

| Vendor Name | Hex | Dec |
|------------------------|--------|-----|
| di-soric GmbH & Co. KG | 0x0221 | 545 |

Product ID

| Product | Product ID | DeviceID hex | DeviceID dec |
|-------------------|------------|--------------|--------------|
| OR33-RMN-PT-G3-2C | 214910 | 0x00013C | 316 |
| OR33-RMN-PT-G3-T4 | 214911 | 0x00013C | 316 |
| OR34-RMN-PT-G3-T4 | 214914 | 0x00013C | 316 |

Identification

| Parameter Description | Index dec | Index hex | R/W | Value | Datatype |
|--------------------------|-----------|-----------|-----|-------------------------------|----------|
| Vendor name | 16 | 0x0010 | RO | di-soric GmbH & Co. KG | StringT |
| Vendor text | 17 | 0x0011 | RO | SOLUTIONS. CLEVER. PRACTICAL. | StringT |
| Product name | 18 | 0x0012 | RO | OR33-RMN-PT-G3-2C | StringT |
| Product ID | 19 | 0x0013 | RO | 214910 | StringT |
| Product text | 20 | 0x0014 | RO | | StringT |
| Firmware version | 23 | 0x0017 | RO | | StringT |
| Application specific tag | 24 | 0x0018 | RW | | StringT |

Features

| Feature | Value |
|--|--------------------|
| IO-Link Revision | 1.1 |
| Data Storage ("DS") | Yes |
| Block Parameter | Yes |
| Min. Cycle Time | 5 ms |
| Transmission Rate | 38,4 kbit/s (COM2) |
| Process Data Input (Device to Master) | 4 Byte |
| Process Data Output (Master to Device) | N/A |

Profile IDs

| Device Profile | | | | |
|----------------------------|---------------|------------|---|------------------------|
| ProfileID hex | ProfileID dec | Name short | Name long | Type Reference |
| 0x0010 | 16 | DMSS | Measuring and Switching Sensor, 1 channel | SSP 4.1.1 Smart Sensor |
| Common Application Profile | | | | |
| ProfileID hex | ProfileID dec | Name short | Name long | Type Reference |
| 0x4000 | 16384 | I&D | Identification & Diagnosis | Common Profile |
| 0x8101 | 33025 | Locator | Locator | Common Profile |
| Function Class | | | | |

| ProfileID hex | ProfileID dec | Name short | Name long | Type Reference |
|---------------|---------------|------------------|-------------------------------|----------------|
| 0x8013 | 32787 | Object detection | Object detection Smart Sensor | Smart Sensor |

Process Data Input (Device to Master)

| Subindex | Name | Offset | Length | Range | Datatype |
|----------|-------------|--------|--------|------------------------|---------------|
| 1 | MDC | 16 | 16 bit | 0...1500 | IntegerT (16) |
| 2 | MDC - Scale | 8 | 8 bit | | IntegerT (8) |
| 3 | SSC.1 | 0 | 1 bit | false=Low true=High | BooleanT |
| 4 | SSC.2 | 1 | 1 bit | false=Low true=High | BooleanT |

| Oc tet | 0 | | | | | | | | 1 | | | | | | | | 2 | | | | | | | | 3 | | | | | | | |
|-----------------------|-----|----|----|----|----|----|----|----|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|
| Bit Of fs et | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Su bi nd ex | 1 | | | | | | | | 2 | | | | | | | | 3 | | | | | | | | 4 | | | | | | | |
| | MDC | | | | | | | | MDC - Scale | | | | | | | | | | | | | | | | | | | | | | | |

Process Data Output (Master to Device)

| Subindex | Name | Offset | Length | Range | Datatype |
|----------|------|--------|--------|-------|----------|
| N/A | | | | | |

Parameter

| Variable id | Name | index | subindex | Access Rights | defaultValue | Value Range | Description | Datatype | Data Storage |
|----------------------|-------------------|------------|----------|---------------|--------------|-------------|------------------------|---------------|--------------|
| V_DirectParameters_1 | Reserved | 0 (0x0000) | 1 (0x01) | RW | | | | UIntegerT (8) | X |
| V_DirectParameters_1 | Master Cycle Time | 0 (0x0000) | 2 (0x02) | RW | | | Communication: Current | UIntegerT (8) | X |

| | | | | | | | | | |
|----------------------|---------------------------|------------|----------|----|--|--|---|---------------|---|
| | | | | | | | communication cycle duration used by the master. This value defines the process data cycle. | | |
| V_DirectParameters_1 | Min Cycle Time | 0 (0x0000) | 3 (0x03) | RW | | | Communication: Minimum communication cycle duration supported by the device. This value defines the lowest possible process data cycle. | UIntegerT (8) | X |
| V_DirectParameters_1 | M-Sequence Capability | 0 (0x0000) | 4 (0x04) | RW | | | Communication: Information on the structure and the supported features of the communication messages. | UIntegerT (8) | X |
| V_DirectParameters_1 | IO-Link Revision ID | 0 (0x0000) | 5 (0x05) | RW | | | Communication: Identifier for the currently used communication protocol revision. | UIntegerT (8) | X |
| V_DirectParameters_1 | Process Data Input Length | 0 (0x0000) | 6 (0x06) | RW | | | Communication: Information | UIntegerT (8) | X |

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|----------------------|----------------------------|------------|----------|----|--|--|--|---------------|---|
| | | | | | | | on width and features of the process input data (Process Data from Device to Master). | | |
| V_DirectParameters_1 | Process Data Output Length | 0 (0x0000) | 7 (0x07) | RW | | | Communication: Information on width of the process output data (Process Data from Master to Device). | UIntegerT (8) | X |
| V_DirectParameters_1 | Vendor ID 1 | 0 (0x0000) | 8 (0x08) | RW | | | Identification: Highest octet of the Vendor ID. Combined with the parameter Vendor ID 2, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community. | UIntegerT (8) | X |
| V_DirectParameters_1 | Vendor ID 2 | 0 (0x0000) | 9 (0x09) | RW | | | Identification: Lowest octet of the Vendor ID. Combined with the parameter Vendor ID 1, this | UIntegerT (8) | X |

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|----------------------|-------------|------------|-----------|----|--|--|---|---------------|---|
| | | | | | | | parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community. | | |
| V_DirectParameters_1 | Device ID 1 | 0 (0x0000) | 10 (0x0A) | RW | | | Identification: Highest octet of the Device ID. Combined with the parameters Device ID 2 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID. | UIntegerT (8) | X |
| V_DirectParameters_1 | Device ID 2 | 0 (0x0000) | 11 (0x0B) | RW | | | Identification: Middle octet of the Device ID. Combined with the parameters Device ID 1 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID. | UIntegerT (8) | X |
| V_DirectParameters_1 | Device ID 3 | 0 (0x0000) | 12 (0x0C) | RW | | | Identification: Lowest octet of the Device ID. Combined with the parameters | UIntegerT (8) | X |

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|----------------------|------------------------|-------------|-----------|----|--|--|---|---------------|---|
| | | | | | | | Device ID 1 and 2, this parameter defines the 24-bit value of the vendor-specific Device ID. | | |
| V_DirectParameters_1 | Reserved | 0 (0x0000) | 13 (0x0D) | RW | | | | UIntegerT (8) | X |
| V_DirectParameters_1 | Reserved | 0 (0x0000) | 14 (0x0E) | RW | | | | UIntegerT (8) | X |
| V_DirectParameters_1 | Reserved | 0 (0x0000) | 15 (0x0F) | RW | | | | UIntegerT (8) | X |
| V_DirectParameters_1 | System Command | 0 (0x0000) | 16 (0x10) | RW | | | Application: Command interface for devices without ISDU support. Validity and execution of commands are not confirmed. | | X |
| V_SystemCommand | System Command | 2 (0x0002) | 0 (0x00) | WO | | | Command interface for applications. A positive acknowledge indicates the complete and correct finalization of the requested function. | | X |
| V_DeviceAccessLocks | Parameter Write Access | 12 (0x000C) | 1 (0x01) | RW | | | This lock prevents the write access to all read/write parameters of | | X |

| | | | | | | | | | |
|---------------------|------------------------|-------------|----------|----|-------------------------------------|--|--|--------------|---|
| | | | | | | | the device except for the parameter 'Device Access Locks'. | | |
| V_DeviceAccessLocks | Data Storage | 12 (0x000C) | 2 (0x02) | RW | | | This lock prevents the write access to the device parameters via the data storage mechanism. | | X |
| V_DeviceAccessLocks | Local Parameterization | 12 (0x000C) | 3 (0x03) | RW | | | This lock prevents the device settings from being changed via local operating elements on the device. | | X |
| V_DeviceAccessLocks | Local User Interface | 12 (0x000C) | 4 (0x04) | RW | | | This lock prevents the access to the device settings and display via a local user interface. The user interface is disabled. | | X |
| V_VendorName | Vendor Name | 16 (0x0010) | 0 (0x00) | RO | di-soric GmbH & Co. KG | | The vendor name that is assigned to a Vendor ID. | StringT (64) | X |
| V_VendorText | Vendor Text | 17 (0x0011) | 0 (0x00) | RO | SOLUTIONS. CLEVER. PRACTICAL. | | Additional information about the vendor. | StringT (64) | X |

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|--------------------------|--------------------------|-------------|----------|----|-----|--|---|--------------|---|
| V_ProductID | Product ID | 19 (0x0013) | 0 (0x00) | RO | | | Vendor-specific product or type identification (e.g., item number or model number). | StringT (64) | X |
| V_ProductName | Product Name | 18 (0x0012) | 0 (0x00) | RO | | | Complete product name. | StringT (64) | X |
| V_ProductText | Product Text | 20 (0x0014) | 0 (0x00) | RO | | | Additional product information for the device. | StringT (64) | X |
| V_SerialNumber | Serial Number | 21 (0x0015) | 0 (0x00) | RO | | | Unique, vendor-specific identifier of the individual device. | StringT (16) | X |
| V_HardwareRevision | Hardware Revision | 22 (0x0016) | 0 (0x00) | RO | | | Unique, vendor-specific identifier of the hardware revision of the individual device. | StringT (64) | X |
| V_FirmwareRevision | Firmware Revision | 23 (0x0017) | 0 (0x00) | RO | | | Unique, vendor-specific identifier of the firmware revision of the individual device. | StringT (64) | X |
| V_ApplicationSpecificTag | Application-specific Tag | 24 (0x0018) | 0 (0x00) | RW | *** | | Possibility to mark a device with | StringT (32) | X |

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|------------------------|------------------------|-------------|----------|----|-----|---|--|----------------|---|
| | | | | | | | user- or application-specific information. | | |
| V_ErrorCount | Error Count | 32 (0x0020) | 0 (0x00) | RO | | | Number of errors that occurred in the technology-specific application since power on or restart. | UIntegerT (16) | X |
| V_DeviceStatus | Device Status | 36 (0x0024) | 0 (0x00) | RO | | 0=Device is OK 1=Maintenance required 2=Out of specification 3=Functional check 4=Failure | Indicator for the current device condition and diagnosis state. | UIntegerT (8) | X |
| V_DetailedDeviceStatus | Detailed Device Status | 37 (0x0025) | 0 (0x00) | RO | | | List of all currently pending events in the device. | ArrayT (64) | X |
| V_CP_FunctionTag | Function Tag | 25 (0x0019) | 0 (0x00) | RW | *** | | Possibility to mark a device with function-specific information. | StringT (32) | X |
| V_CP_LocationTag | Location Tag | 26 (0x001A) | 0 (0x00) | RW | *** | | Possibility to mark a device with location-specific information. | StringT (32) | X |
| V_SSP_TeachSelect | Teach Select | 58 (0x003A) | 0 (0x00) | RW | 1 | 1=SSC.1 2=SSC.2 | Selects the switching signal channel for which a teach | UIntegerT (8) | |

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|----------------------|--------------|-------------|----------|----|-------|---|--|---------------|---|
| | | | | | | | procedure will be applied. | | |
| V_SSP_TI_TeachResult | State | 59 (0x003B) | 1 (0x01) | RO | 0 | 0=Idle 1=SP1 success 2=SP2 success 3=SP1, SP2 success 4=Wait for command 5=Busy 7=Error | Indicates the current state of the teach procedure. | UIntegerT (4) | X |
| V_SSP_TI_TeachResult | Flag SP1 TP1 | 59 (0x003B) | 2 (0x02) | RO | false | false=Initial or not ok true=Ok | Indicates the current teach result for the teach point. | BooleanT | X |
| V_SSP_TI_TeachResult | Flag SP1 TP2 | 59 (0x003B) | 3 (0x03) | RO | false | false=Initial or not ok true=Ok | Indicates the current teach result for the teach point. | BooleanT | X |
| V_SSP_TI_TeachResult | Flag SP2 TP1 | 59 (0x003B) | 4 (0x04) | RO | false | false=Initial or not ok true=Ok | Indicates the current teach result for the teach point. | BooleanT | X |
| V_SSP_TI_TeachResult | Flag SP2 TP2 | 59 (0x003B) | 5 (0x05) | RO | false | false=Initial or not ok true=Ok | Indicates the current teach result for the teach point. | BooleanT | X |
| V_SSP_SSC01_Param | SP1 | 60 (0x003C) | 1 (0x01) | RW | 100 | | Defines the setpoint 1 value for the switching signal channel. | IntegerT (32) | X |
| V_SSP_SSC01_Param | SP2 | 60 (0x003C) | 2 (0x02) | RW | 1500 | | Defines the setpoint 2 value for the switching signal channel. | IntegerT (32) | X |
| V_SSP_SSC01_Config | Logic | 61 (0x003D) | 1 (0x01) | RW | 0 | 0=High active 1=Low active | Defines the logical representatio | UIntegerT (8) | X |

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|---------------------|------------|-------------|----------|----|------|--|---|---------------|---|
| | | | | | | | n of the switching signal SSC in the process data. | | |
| V_SSP_SSC0_1_Config | Mode | 61 (0x003D) | 2 (0x02) | RW | 1 | 0=Deactivated 1=Single point 2=Window 3=Two point | Defines the evaluation mode for the switching signal SSC. | UIntegerT (8) | X |
| V_SSP_SSC0_1_Config | Hysteresis | 61 (0x003D) | 3 (0x03) | RW | 0 | 0=0 | Defines the hysteresis at the switchpoint. A higher hysteresis may help to increase stability in critical applications. | IntegerT (32) | X |
| V_SSP_SSC0_2_Param | SP1 | 62 (0x003E) | 1 (0x01) | RW | 100 | | Defines the setpoint 1 value for the switching signal channel. | IntegerT (32) | X |
| V_SSP_SSC0_2_Param | SP2 | 62 (0x003E) | 2 (0x02) | RW | 1500 | | Defines the setpoint 2 value for the switching signal channel. | IntegerT (32) | X |
| V_SSP_SSC0_2_Config | Logic | 63 (0x003F) | 1 (0x01) | RW | 0 | 0=High active 1=Low active | Defines the logical representation of the switching signal SSC in the process data. | UIntegerT (8) | X |
| V_SSP_SSC0 | Mode | 63 (0x003F) | 2 (0x02) | RW | 0 | 0=Deactivated | Defines the | UIntegerT (8) | X |

| | | | | | | | | | |
|---------------------------|--------------------------|-------------|----------|----|---|---|---|----------------|---|
| 2_Config | | | | | | 1=Single point 2=Window 3=Two point | evaluation mode for the switching signal SSC. | | |
| V_SSP_SSC0 2_Config | Hysteresis | 63 (0x003F) | 3 (0x03) | RW | 0 | 0=0 | Defines the hysteresis at the switchpoint. A higher hysteresis may help to increase stability in critical applications. | IntegerT (32) | X |
| V_Control | Adjustment | 65 (0x0041) | 0 (0x00) | RW | 1 | 0=Remote 1=Local | Selection of local / remote adjustment | UIntegerT (8) | X |
| V_SSC11_DS | SSC.1 Delay Time | 66 (0x0042) | 0 (0x00) | RW | 0 | 0...10000 | Defines the delay time for the switching signal of signal channel 1 | UIntegerT (16) | X |
| V_SSC12_DS | SSC.2 Delay Time | 67 (0x0043) | 0 (0x00) | RW | 0 | 0...10000 | Defines the delay time for the switching signal of signal channel 2 | UIntegerT (16) | X |
| V_SO1_DELA Y_CTRL | SSC.1 Delay Control | 68 (0x0044) | 0 (0x00) | RW | 0 | 0=Disabled Timer 1=T-on delay 2=T-off delay 3=T-on/T-off delay | SSC.1 Delay Control [disabled, Ton, Toff, Ton/Toff]. | UIntegerT (8) | X |
| V_SO2_DELA Y_CTRL | SSC.2 Delay Control | 69 (0x0045) | 0 (0x00) | RW | 0 | 0=Disabled Timer 1=T-on delay 2=T-off delay 3=T-on/T-off delay | SSC.2 Delay Control [disabled, Ton, Toff, Ton/Toff]. | UIntegerT (8) | X |
| V_OutputMode inSIOMode | Switching Output (Pin 4) | 70 (0x0046) | 0 (0x00) | RW | 0 | 0=SSC.1 PP 1=SSC.1 NPN | polarity of the switching | UIntegerT (8) | X |

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|---------------------------|---------------------------|-------------|----------|----|---|--|--|----------------|---|
| | | | | | | 2=SSC.1 PNP 3=SSC.2 PP 4=SSC.2 NPN 5=SSC.2 PNP | output | | |
| V_OutputMode | Multi I/O (Pin 2) | 71 (0x0047) | 0 (0x00) | RW | 1 | 0=Deactivated 1=Teach High active 2=Teach Low active 3=SSC.1 PP 4=SSC.1 NPN 5=SSC.1 PNP 6=SSC.2 PP 7=SSC.2 NPN 8=SSC.2 PNP | Operation mode for Multi I/O (Pin 2) | UIntegerT (8) | X |
| V_SensorPresets | Sensor Mode | 72 (0x0048) | 0 (0x00) | RW | 0 | 0=Standard 1=Precision | | UIntegerT (8) | X |
| V_interference_protection | Anti Crosstalk | 78 (0x004E) | 0 (0x00) | RW | 0 | 0=Off 1=1 Sensor mode 2=2 Sensor mode - Sensor 1 3=2 Sensor mode - Sensor 2 4=3 Sensor mode - Sensor 1 5=3 Sensor mode - Sensor 2 6=3 Sensor mode - Sensor 3 | | UIntegerT (8) | X |
| V_SwitchcounterSSC11 | Switch Counter SSC.1 | 85 (0x0055) | 0 (0x00) | RO | | | Number of switching after power-up or reset for switching signal channel 1 of sensor 1 | UIntegerT (32) | X |
| V_Temperature | Temperature | 87 (0x0057) | 0 (0x00) | RO | | | Sensor temperature | IntegerT (16) | X |
| V_SensitivitySwitch | Switchpoint Potentiometer | 90 (0x005A) | 0 (0x00) | RO | | | position of the local sensibility | UIntegerT (16) | X |

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| | | | | | | | switch | | |
| V_OperatingTime | Operating hours | 93 (0x005D) | 0 (0x00) | RO | | | duration of duty | UIntegerT (32) | X |
| V_StartUps | Count Of System Start-ups | 94 (0x005E) | 0 (0x00) | RO | | | count of system start-ups | UIntegerT (32) | X |
| V_Temperature_Max | Maximum Temperature | 96 (0x0060) | 0 (0x00) | RO | | | maximum temperature in use | IntegerT (16) | X |
| V_Temperature_Min | Minimum Temperature | 97 (0x0061) | 0 (0x00) | RO | | | minimum temperature in use | IntegerT (16) | X |
| V_QualityOfTeach | Quality of Teach | 102 (0x0066) | 0 (0x00) | RO | 0 | 0...100 | | UIntegerT (8) | X |
| V_QualityOfRun | Quality of Run | 103 (0x0067) | 0 (0x00) | RO | 0 | | | UIntegerT (8) | X |
| V_Excess_Gain | Excess Gain | 104 (0x0068) | 0 (0x00) | RO | | | | UIntegerT (8) | X |
| V_SSP_MDC_Descriptor | Unit | 16512 (0x4080) | 3 (0x03) | RO | 1997 | 1001=°C 1005=° 1010=m 1034=m³ 1061=m/s 1076=m/s² 1077=Hz 1085=rpm 1088=kg 1120=N 1126=Nm 1130=Pa 1164=cSt 1186=W 1209=A 1240=V 1299=S/m 1322=kg/s 1342=% 1349=m³/h 1383=dB 1422=pH 1423=ppm 1675=B/s | Shows the physical unit. | UIntegerT (16) | X |

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|--|--|--|--|--|--|--|--|--|--|
| | | | | | | 1684=bit/s 1689=dBm 1691=°/s 1692=°/s² 1694=bit 1997=none | | | |
|--|--|--|--|--|--|--|--|--|--|

System Commands

| Command dec | Command hex | Description |
|-------------|-------------|--|
| 65 | 0x41 | Teach SP1 |
| 66 | 0x42 | Teach SP2 |
| 76 | 0x4C | Teach Object |
| 77 | 0x4D | Teach Background |
| 126 | 0x7E | Locator Start |
| 127 | 0x7F | Locator Stop |
| 240 | 0xF0 | IO-Link 1.1 system test command 240, Event 8DFE appears |
| 241 | 0xF1 | IO-Link 1.1 system test command 241, Event 8DFE disappears |
| 242 | 0xF2 | IO-Link 1.1 system test command 242, Event 8DFF appears |
| 243 | 0xF3 | IO-Link 1.1 system test command 243, Event 8DFF disappears |

Errors

| Error ID | Name | Description |
|----------|---------------------------------------|---|
| 8000 | Device application error - no details | Service was denied by the technology-specific application. No detailed root-cause information is available. |
| 8011 | Index not available | Read or write access attempt to a non-existing index. |
| 8012 | Subindex not available | Read or write access attempt to a non-existing subindex of an existing index. |
| 8020 | Service temporarily not available | Parameter not accessible due to the current state of the technology-specific application. |
| 8023 | Access denied | Write access to a read-only parameter or read access to write-only parameter. |
| 8030 | Parameter value out of range | Written parameter value is outside of the permitted value range. |
| 8031 | Parameter value above limit | Written parameter value is above its specified value range. |
| 8032 | Parameter value below limit | Written parameter value is below its specified value range. |
| 8033 | Parameter length overrun | Written parameter is longer than specified. |
| 8034 | Parameter length underrun | Written parameter is shorter than specified. |
| 8035 | Function unavailable | Written command is not supported by the technology-specific application. |
| 8036 | Function temporarily unavailable | Written command is unavailable due to the current state of the technology-specific application. |
| 8040 | Invalid parameter set | Written single parameter value collides with other existing parameter settings. |
| 8041 | Inconsistent parameter set | Parameter set inconsistencies at the end of block parameter transfer. Device plausibility check failed. |
| 8082 | Application not ready | Read or write access denied. The technology-specific application is temporarily unavailable. |

Events

| Event Code | Name | Description |
|------------|---------------------------------------|---|
| 36350 | Test Event 1 | Event appears by setting index 2 to value 240, Event disappears by setting index 2 to value 241 |
| 36351 | Test Event 2 | Event appears by setting index 2 to value 242, Event disappears by setting index 2 to value 243 |
| 0 | No malfunction | |
| 20480 | Device hardware fault | Exchange device |
| 16384 | Temperature fault | Overload |
| 16912 | Device temperature overrun | Clear source of heat |
| 16928 | Device temperature underrun | Insulate device |
| 30480 | Short circuit | Check installation |
| 35840 | Technology-specific application fault | Reset device |
| 35841 | Simulation active | Check operating mode |
| 35904 | Maintenance required - Cleaning | Clean device |