Supplementary Instructions
DULCOMARIN® II, I Module
(Current Input Module, Standard Signal Inputs mA)
DXMa

Please enter the identcode of your module!

Please carefully read these operating instructions before use!· Do not discard!
The operator shall be liable for any damage caused by installation or operating errors!
Imprint

These operating resp. supplementary instructions apply only in conjunction with the following ticked operating resp. supplementary instructions:

✓ Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Swimming Pool Controller and Disinfection Controller DXCa
✓ Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Swimming Pool Controller DXCa
Part 2: Operation
✓ Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Disinfection Controller DXCa
Part 2: Operation
✓ Supplementary Instructions DULCOMARIN® II Videographic Recorder Operation
✓ Supplementary Instructions DULCOMARIN® II, M Module (Measurement Module for pH, Redox/ORP, Temperature) DXMaM Operation
✓ Supplementary Instructions DULCOMARIN® II, M Module (Measurement Module for pH, Redox/ORP, Temperature) DXMaM Connection
✓ Supplementary Instructions DULCOMARIN® II, A Module (Actuator Module, Pumps and Standard Signal Outputs mA) DXMaA
✓ Supplementary Instructions DULCOMARIN® II, N Module (Power Supply Module without Relays) DXMaN
✓ Supplementary Instructions DULCOMARIN® II, P Module (Power Supply Module with Relays) DXMaP
✓ Supplementary Instructions DULCOMARIN® II, I Module (Current Input Module, Standard Signal Inputs mA) DXMaI

Imprint:
Supplementary Instructions
DULCOMARIN® II, I Module
(Current Input Module, Standard Signal Inputs mA)
DXMaI
© ProMinent Dosiertechnik GmbH, 2008

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Identcode

Identcode
The identcode describes the external modules for the DULCOMARIN® II, series DXM

<table>
<thead>
<tr>
<th>DXMa</th>
<th>External module for DULCOMARIN® II, series DXM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Module: I-module, Current input module: 3 analogue inputs</td>
</tr>
<tr>
<td>W</td>
<td>Type of mounting: Wall mounting (IP 65)</td>
</tr>
<tr>
<td>E</td>
<td>Retrofit module (installation module for DXCa, IP 20)</td>
</tr>
<tr>
<td>0</td>
<td>Version: With controls</td>
</tr>
<tr>
<td>2</td>
<td>Without controls</td>
</tr>
<tr>
<td>3</td>
<td>Without controls (only mounting type &quot;E&quot;)</td>
</tr>
<tr>
<td>O</td>
<td>Application: Standard</td>
</tr>
<tr>
<td>S</td>
<td>Swimming pool</td>
</tr>
<tr>
<td>D</td>
<td>Potable water/Disinfection</td>
</tr>
<tr>
<td>00</td>
<td>Language: No controls ¹)</td>
</tr>
<tr>
<td>DE</td>
<td>German</td>
</tr>
<tr>
<td>EN</td>
<td>English</td>
</tr>
<tr>
<td>01</td>
<td>Approval: CE mark</td>
</tr>
</tbody>
</table>

¹) only with Version: "2", no operator control

Only the sensor module and the current input module in the mounting type W “wall-mounted” are available with controls and then with different languages.

DXMa Internal modules for DULCOMARIN® II, series DXC
These modules can be ordered via the identcode of the DXC (see “Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Swimming Pool Controller and Disinfection Controller DXCa, Part 1: Mounting and Installation”).
1 About this Module

With the current input module DXMal, 2 switches / relays and 3 sensors can be connected via the mA inputs 0/4...20 mA of the DULCOMARIN® II.

The control module DXMal is equipped with the following inputs:
- contact inputs for sample water monitoring and pause
- 3 standard signal inputs 0/4 - 20 mA

The mA values of the sensors for flow, turbidity, UV intensity, conductive conductivity, dissolved oxygen, and ammonia are recorded as treated (compensated and calibrated).

The mA values of the sensors for ClO₂, H₂O₂, PES, fluoride, and chlorite can be temperature-compensated. For this purpose, a PT1000 sensor with mA transformer must be connected to a mA input.

2 Safety Chapter

The current input module DXMal may only be used as component part of the DULCOMARIN® II.
The installation may only be performed by specially trained personnel!

3 Storage and Transport

Only store and transport the module in its original packaging.

CAUTION
Also protect the packaged module against humidity and exposure to chemicals!

Environmental conditions for storage and transport:
- Temperature: -10 °C to 70 °C
- Climate: Permissible relative humidity: 95%, non-condensing (DIN IEC 60068-2-30)

4 Mounting and Installation

WARNING
- The installation may only be performed by specially trained personnel!
- Please observe the notes in the "Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Swimming Pool Controller and Disinfection Controller DXCa, Part 1: Mounting and Installation" before carrying out any mounting and installation work!

NOTE
The terminal connection diagram is enclosed at the end of these supplementary instructions.

Carry out the CAN connection as described in the "Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Swimming Pool Controller and Disinfection Controller DXCa, Part 1: Mounting and Installation".
5 Technical Data

Electrical data

Digital inputs (K1 - K2):
2 inputs: for contacts, switching transistors and for analogue PLC outputs according to DIN EN 61131-2
Insulation voltage: 500 V
Input resistance: 3.5 kΩ
Off-load voltage: 10 V ... 12 V
Switching point: passive: 1.750 Ω, typical active: 3.15 mA, typical
Input current: 4 mA (0 V)
5.8 mA (30 V)
Input capacity: 100 nF
Switching hysteresis: 20 μA
Max. switching frequency: 1 kHz

Standard signal outputs mA (I out 1 - I out 3):
3 inputs: 0/4 ... 20 mA, electrically isolated
Insulation voltage: 500 V
Input resistance: 50 Ω
Load rating: 30 mA
2 inputs with 2-wire connection (loop supply) (I out 2, I out 3):
Supply voltage 22.0 V - 25.0 V
Measuring accuracy: ± 0.5 % of the measuring range (at 25 °C)
Representation: 1/215

Environmental conditions

Storage temperature: -10...70 °C

Type of protection
Type of protection: as internal module IP 20
as external module, wall-mounted IP 65 pursuant to IEC 60529, DIN EN 60529, VDE 0470
as external module, control panel-mounted IP 54 pursuant to IEC 60529, DIN EN 60529, VDE 0470

Humidity: Permissible relative humidity: 95 %, non-condensing (DIN IEC 60068-2-30)

Materials

Housing: PPE-GF 10

6 Terminal Assignment

<table>
<thead>
<tr>
<th>Description</th>
<th>Terminal</th>
<th>Terminal no.</th>
<th>Polarity</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact input 1</td>
<td>K 1</td>
<td>1</td>
<td>-</td>
<td>Fault measuring water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Contact input 2</td>
<td>K 2</td>
<td>3</td>
<td>-</td>
<td>Pause control (e.g. backwashing)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Analogue input 1</td>
<td>I out 1</td>
<td>5</td>
<td>out</td>
<td>Flow (turbidity)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>GND (-)</td>
<td></td>
</tr>
<tr>
<td>Analogue input 2</td>
<td>I out 2</td>
<td>7</td>
<td>V+</td>
<td>Fluoride (ClO₂⁻, ClO₂⁺, H₂O₂, NH₄OH)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>out</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>GND (-)</td>
<td></td>
</tr>
<tr>
<td>Analogue input 3</td>
<td>I out 3</td>
<td>10</td>
<td>V+</td>
<td>Temperature (UV, turbidity, conductivity, ClO₂⁻)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>out</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>GND (-)</td>
<td></td>
</tr>
</tbody>
</table>
For the measured variables via the terminal "I out 2", the software includes the following functionalities:

<table>
<thead>
<tr>
<th></th>
<th>F⁻</th>
<th>O₂</th>
<th>ClO₂</th>
<th>ClO₃⁻</th>
<th>H₂O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlling *</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Calibration</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

* Configure a pump in advance (see "Operating Instructions Multi-Channel Measuring and Control System DULCOMARIN® II Disinfection Controller, DXCs, Part 2: Operation")