• Digital mobile electronics CL-451
• Robust construction with plug-in connection for mobile applications
• Protection class IP68
• Multi-functional pin assignment, up to 17 I/Os
• CAN connection
• Freely programmable

DESCRIPTION
Microcontroller based control with multifunctional inputs/outputs of the PME devices family (Programmable Mobile Electronics). Delivered in a robust and compact plastic housing, it is designed for the hard use in working devices and is perfectly suitable for various open loop and closed loop control tasks.

FUNCTION
The control can be used and programmed as a stand alone unit, or as part of a distributed, decentralised system architecture. The variably usable inputs and outputs enable reading and controlling sensors and actuators of all kinds. The free programmability enables maximum flexibility for the adaptation to any desired machine function.

APPLICATION
This mobile electronics is used mainly in the mobile field because of the compact construction, protection class IP67 as well as the extensive operating temperature range and the selected plug connection. Customer-specific requirements can be easily implemented.

CONTENT
GENERAL SPECIFICATIONS
ELECTRICAL SPECIFICATIONS
DIMENSIONS, ASSEMBLY
ACCESSORIES
CONNECTOR WIRING DIAGRAM /
PIN ASSIGNMENT

TYPE CODE
CL-451-100-10-WAG-00 Master I/O Module
CL-451-100-20-WAG-00 Client I/O Module

GENERAL SPECIFICATIONS
Execution Plastic molded housing
Dimensions 119 x 36 x 133 mm (see Dimensions)
Mounting Mounting flange, screwed on
Weight 250 g
Device receptacle Deutsch DTM04-12PA/B pin header
Mating connectors Deutsch DTM06-12SA / DTM06-12SB
Working temperature -40…+70°C
MTBF 79 years (Telcordia SR-332)

ELECTRICAL SPECIFICATIONS
Protection Class IP68
Supply Voltage 8…32 VDC
No-load current 152 mA at 8 V, 259 mA at 32 V

Analog Inputs
Number of inputs up to 5
Input voltage range 0…5.5 V
Input resistance 58.7 kOhm typ.
Resolution 12 bit

Digital Inputs
number of inputs up to 17
Switching threshold positive >3.5 V, negative <1.0 V

STB Switch to battery input
Input resistance 2.6 kOhm

STG Switch To Ground input
Pull-up resistor 560 Ohm to internal 5 V

FREQ Frequency Input
Pull-up resistor 4.7 kOhm to internal 5 V
Resolution < 5 Hz
Frequency Range max. 10 kHz (open drain, sinking sensor)

Digital Outputs
Number of outputs up to 16
Protection Short to GND
Pull-up / down 560 Ohm / 2.6 kOhm for diagnostics

DOUT Digital Outputs
maximum current 3.0 A (individual)
2.0 A (grouped)

PWM Pulse Width Modulation Output
maximum current 3.0 A (individual)
1.5 A (grouped)

ECC Estimated Current Feedback, 0.2-3.7 A / 10 Bit
Accuracy ECC +/- 50mA at 2A

CAN 40 kbit/s to 500 kbit/s

Software
Apart from the programming tools, a software for diagnostics and error eliminating for the commissioning of the system is available.

Note Mating connector not part of the delivery

Dokument darf ohne schriftliche Einwilligung weder kopiert, verwertet noch an Dritte weitergegeben werden. Zuwiderhandlung ist strafbar und wird gerichtlich verfolgt.
DIMENSIONS

ASSEMBLY
Mounting surface View from below

ACCESSORIES
Mating connector 1 Deutsch DTM06-12SA
Mating connector 2 Deutsch DTM06-12SB
Wedge lock Deutsch WM-12S (2 pcs)
Crimp socket AWG 20, 0.5 mm² Deutsch 0462-201-20141 (max. 24 pcs)
or crimp socket AWG 16-18, 0.75-1 mm² Deutsch 0462-005-20141 (max. 24 pcs)
Sealing plug Deutsch 0413-204-2005 (max. 24 pcs)
CONNECTION WIRING DIAGRAM / PIN ASSIGNMENT

### X1, gray, 12-pole, connector A-coded

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input #1 STB / STG / Output #1 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>2</td>
<td>Input #2 STB / STG / Output #2 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>3</td>
<td>Input #3 STB/STG / VTD / Output #3 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>4</td>
<td>Input #4 STB / STG / VTD / Output #4 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>5</td>
<td>Input #5 STB / STG / Output #5 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>6</td>
<td>Input #6 STB /STG / Output #6 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>7</td>
<td>Input #7 STB / STG / Output #7 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>8</td>
<td>Input #8 STB / STG / Output #8 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>9</td>
<td>CAN1-L</td>
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<tr>
<td>10</td>
<td>CAN1-H</td>
</tr>
<tr>
<td>11</td>
<td>BAT(-) Module</td>
</tr>
<tr>
<td>12</td>
<td>Unswitched BAT(-) Module and Outputs 1-8</td>
</tr>
</tbody>
</table>

### X2, black, 12-pole, connector B-coded

<table>
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<tr>
<th>Pin</th>
<th>Function</th>
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<tbody>
<tr>
<td>1</td>
<td>Input #9 STB / STG / Output #9 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>2</td>
<td>Input #10 STB / STG / Output #10 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>3</td>
<td>Input #11 STB / STG / VTD / Output #11 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>4</td>
<td>Input #12 STB / STG / VTD / Output #12 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>5</td>
<td>Input #13 STB / STG / Output #13 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>6</td>
<td>Input #14 STB / STG / Output #14 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>7</td>
<td>Input #15 STB / STG / Output #15 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>8</td>
<td>Input #16 STB / STG / Output #16 DOUT(+), PWM(+), ECC</td>
</tr>
<tr>
<td>9</td>
<td>Input #17 STB / VTD</td>
</tr>
<tr>
<td>10</td>
<td>BAT(-) Input #18 Battery Voltage</td>
</tr>
<tr>
<td>11</td>
<td>BAT(-) Module</td>
</tr>
<tr>
<td>12</td>
<td>BAT(-) Outputs 9-16</td>
</tr>
</tbody>
</table>

**NOTE**

All 8 inputs and outputs, I/O 5-8 and 13-16, have to be assigned to the same input/output type. Either all as Output, as STB respectively as STG input. The maximum current is 10A per 8 outputs per connector.

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**Orchestra Software Suite**

Art. no. 740.1000

**Project management software**

Ladder-Logic and C-Code

**Display GUI Programming incl.**

Conductor Software

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**Standalone diagnostics and set-up tool**

Conductor Software

**NXP (Freescale) CodeWarrior**

Art. no. 740.1001

**3rd party tool**

NXP (Freescale) CodeWarrior

**C-Code Programming tool / Compiler**

Data subject to change

Data sheet no. 1.13-290E 3/3

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