

Motorized Capacitor Drive Unit



Document Information

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Document history

Doc. Rev.	Date	Author(s)	Change(s)	Status
1.0	2007-03-30	O. Lehmann	Initial document	released
1.1	2010-06-25	A. Renggli	Various additions	internal
02	2014-01-24	W. Bigler / T. Fenske	Reviewed with minor modifications / configuration section added	released

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Overview of Service Bulletins for Integrated Drives (ID)

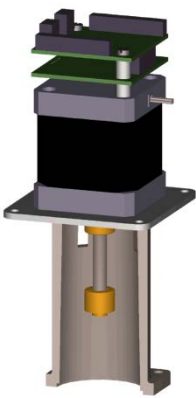

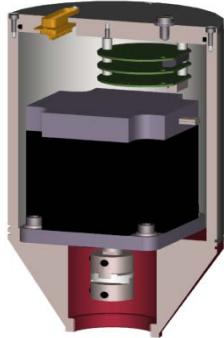

- SB-60** Overview of Integrated Drives
- General product description
 - Drive unit product lines and related capacitor series
 - Function levels and configurations
 - Description of module components
 - Technical specifications
 - Overview of the product range
 - Type designation
- SB-61** Drive Unit
- Drive unit product lines
 - Description of the drive unit components
- SB-62** Introduction to Stepping Motors
- Principal function of stepper motors
 - Control system of the drive unit
- SB-63** Electrical Installation ID-400
- Stepping driver control signals and connections for EXPERT ID
- SB-64** Electrical Installation ID-1200
- Stepping driver control signals and connections for EXPERT ID
- SB-65** Electrical Installation ID-2800
- Stepping driver control signals and connections for EXPERT ID
- SB-66** Electrical Installation ID-5400
- Stepping driver control signals and connections for EXPERT ID
- SB-67** Step/Direction; Clockwise / Counter clockwise (CW/CCW) Interface
- Stepping driver signals
 - Stepping driver timing diagram
- SB-68** Software Protocol Interface RS-232
- Specification of the interface
 - Frame structure
 - Communication protocol between the ID and the host system
- SB-69** Software Protocol Interface RS-485
- Specification
 - Frame structure
 - Communication protocol between the ID and the host system
- SB-72** Safety Aspects of Integrated Drives
- Capacitor
 - Electrical Insulation between ID and Capacitor

DATA SHEETS are available for each Integrated Drive

1 Drive unit product lines and related capacitor series

The different drive units are split up in four product lines named ID - 400, ID - 1200, ID - 2800 and ID - 5400. The number of each product line is based on the holding torque of the stepper motor.

The typical use of the ID – 400 and ID – 2800 is for Semiconductor and Flat-Panel application vs. the ID – 2800 and ID – 5400 is for broadcast applications.

			
ID - 400	ID - 1200	ID - 2800	ID - 5400
Typical application area: Semicon and Flat-Panel		Typical application area: Broadcast	
Uni-Con	Power-Con	SAMI-Con	MAMI-Con
Uni-Solar	Power-Solar	Hiper-Con	LAMI-Con
	Hexa-Con	NAMi-Con	HAMi-Con
	Maxi-Con	Supra-Con	

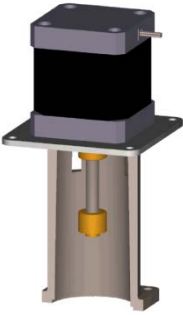

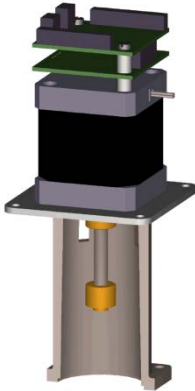

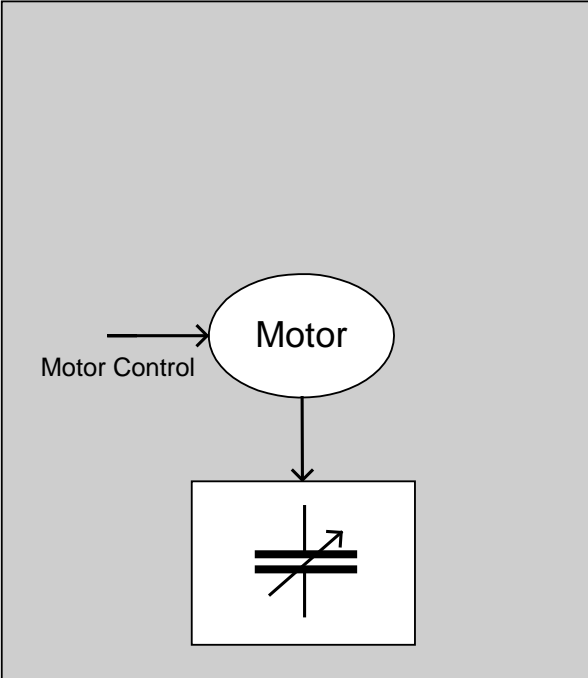
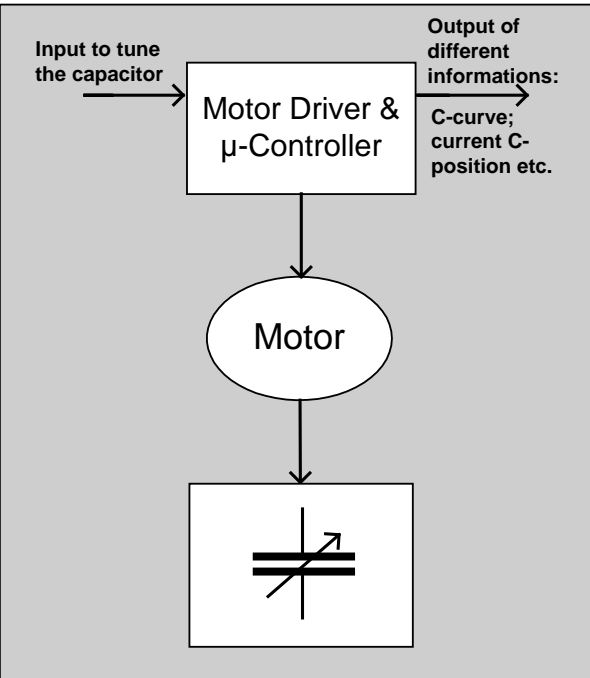
Picture 1: Drive unit product lines and related capacitor series

2 Function levels and configurations

In this section, the different Integrated Drive function levels and configurations are described. There are three different function levels BASIC, ENTRY and EXPERT.

The BASIC is only available for ID-400.

The ENTRY is only available for ID-400 and ID-1200.

			
<p>ID - 400</p>	<p>ID - 1200</p>	<p>ID - 400</p>	<p>ID - 1200</p>
<p>BASIC or ENTRY</p>		<p>EXPERT</p>	
			
<p>Using a stepping motor, the capacitance of the variable capacitor can be tuned between the mechanical end stops. Therefore, an external stepping motor driver that generates the respective signals is required.</p>		<p>This function level can be controlled from a PC or control board using high level commands. Different logical interfaces are available. The COMET proprietary protocol allows the execution of the following commands:</p>	

	<ul style="list-style-type: none"> ▪ Reading the calibration data, including characteristic capacitance curve (C-Curve) and serial number of the module, that is stored on the microcontroller ▪ Control the motion of the stepper-motor that drives the capacitor in the module, namely set the capacitor to a specific capacitance value, set the capacitor to C_{max} value, set the capacitor to C_{min} value, reference at C_{min} position or move the drive by a given number of steps.
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Table 1: Overview of the Integrated Drive function levels

As aforementioned the EXPERT has different logical interfaces to tune the capacitor. The following table gives an overview about the available interfaces:

	EXPERT - 1	EXPERT - 2	EXPERT - 3
Interface	RS - 232	RS - 485	Step/Direction CW/CCW

Table 2: Available function levels at the EXPERT

The function level EXPERT ID – 400 and ID – 1200 are available as shielded¹ or non shielded version whereas the ID – 2800 and ID – 5400 are only available as shielded version.

¹ Shielded: The shielded version implement the motor and motor driver in a RF box

3 Revision history

Changes from document SB-61 V.1.1 to SB-61 Rev. 02:

Section	Description of change
General	Updated document to cover firmware version V.2.X in addition to V.1.X
2	Difference between Basic and Entry version