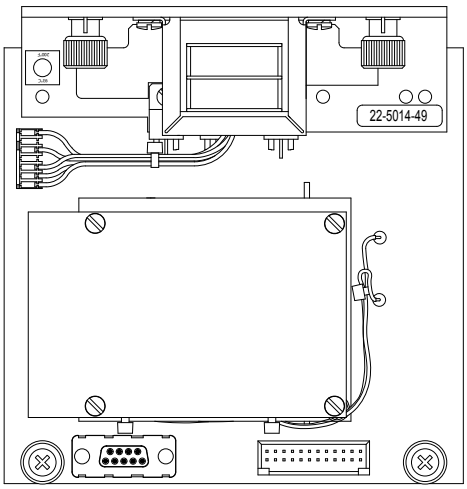
80-1404-05
Rev. 03.2
SUPPLEMENT TO MANUAL:
• 80-1403-01

PROFIBUS SUPPLEMENT - MODEL GROUP 14

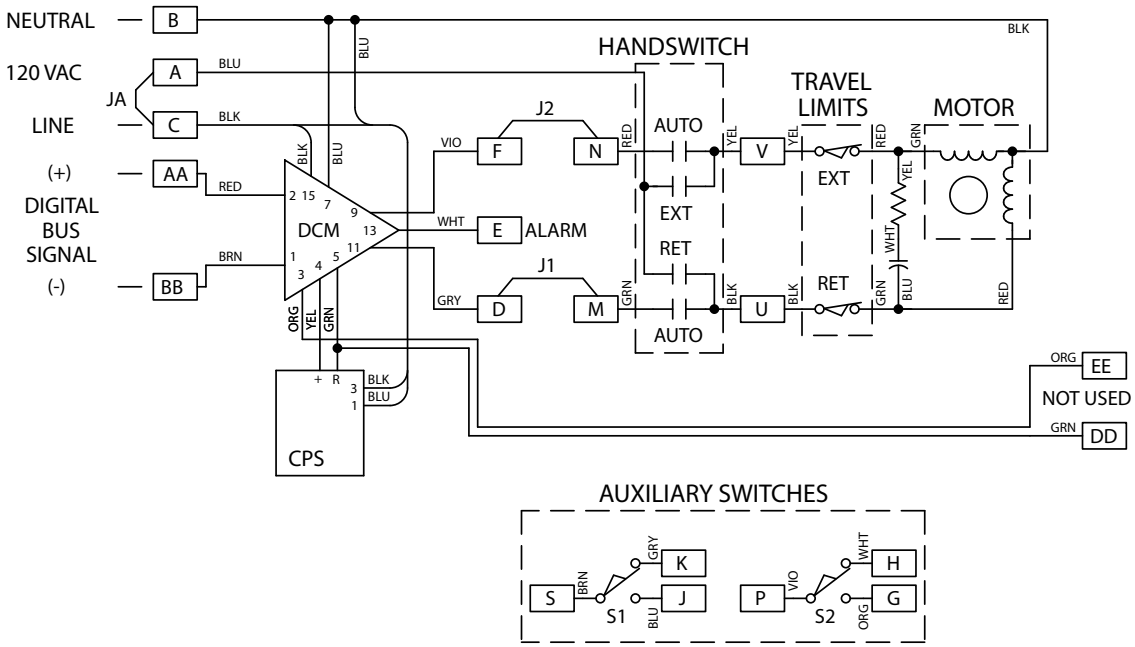
The instructions and procedures for the Installation, Operation, Calibration and Maintenance of Beck Group 14 Actuators are the same as listed in the above manual, except for the differences pertaining to the Profibus interface which are detailed herein.

For actuators equipped with the DCM-3 (built after July, 2016)

DCM WITH PROFIBUS



TYPICAL WIRING DIAGRAM



DCM FOR PROFIBUS (P/N 22-5014-49)

The Profibus DCM is designed for Profibus PA networks. Configuration, setup and diagnostics can be accomplished through the Profibus PA interface using appropriate software. The Profibus DCM does not have a local configuration interface or the associated status LEDs.

For general information regarding Profibus-PA, the following two publications are recommended resources:

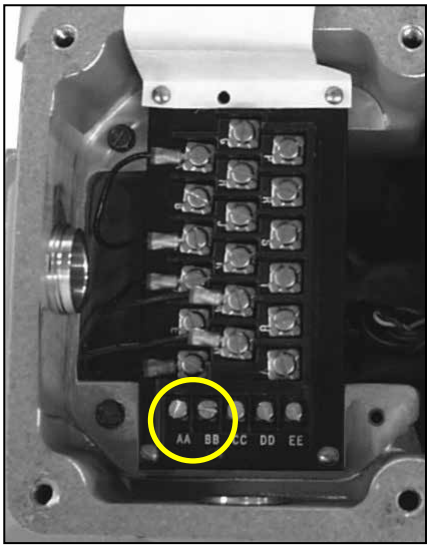
PROFIBUS-PA Profile for Process Control Devices
Version 3.01
Order No.: 3.042

PROFIBUS-PA User and Installation Guideline
Version 2.2
Order No.: 2.092

Both documents are published by:
PROFIBUS Nutzerorganisation e.V.
Haid-und-Neu-Str. 7, D-76131 Karlsruhe
http://www.profibus.org

SETUP

The DCM should be connected to the Profibus DP to PA coupler at terminals AA (+) and BB (-) in the actuator terminal compartment (see below).



PROFIBUS COMMUNICATION OVERVIEW

Configuration and Control of the Beck Profibus Actuator is divided into two separate filesets. The BECK0B3A GSD file is used with the control system to write the setpoint, read back shaft position and read torque and temperature values. The Beck Profibus Enhanced Device Description (EDD) is used to configure the actuator parameters and read diagnostic information.

A Profibus address is a simple number that ranges from 0–126. Each device on a Profibus network must be configured for a unique address. Address 126 is a special address reserved for uncommissioned Profibus devices. Each device added to a Profibus network starts at address 126 and is then changed to a lower permanent address. All Beck Profibus actuators are shipped at address 126.

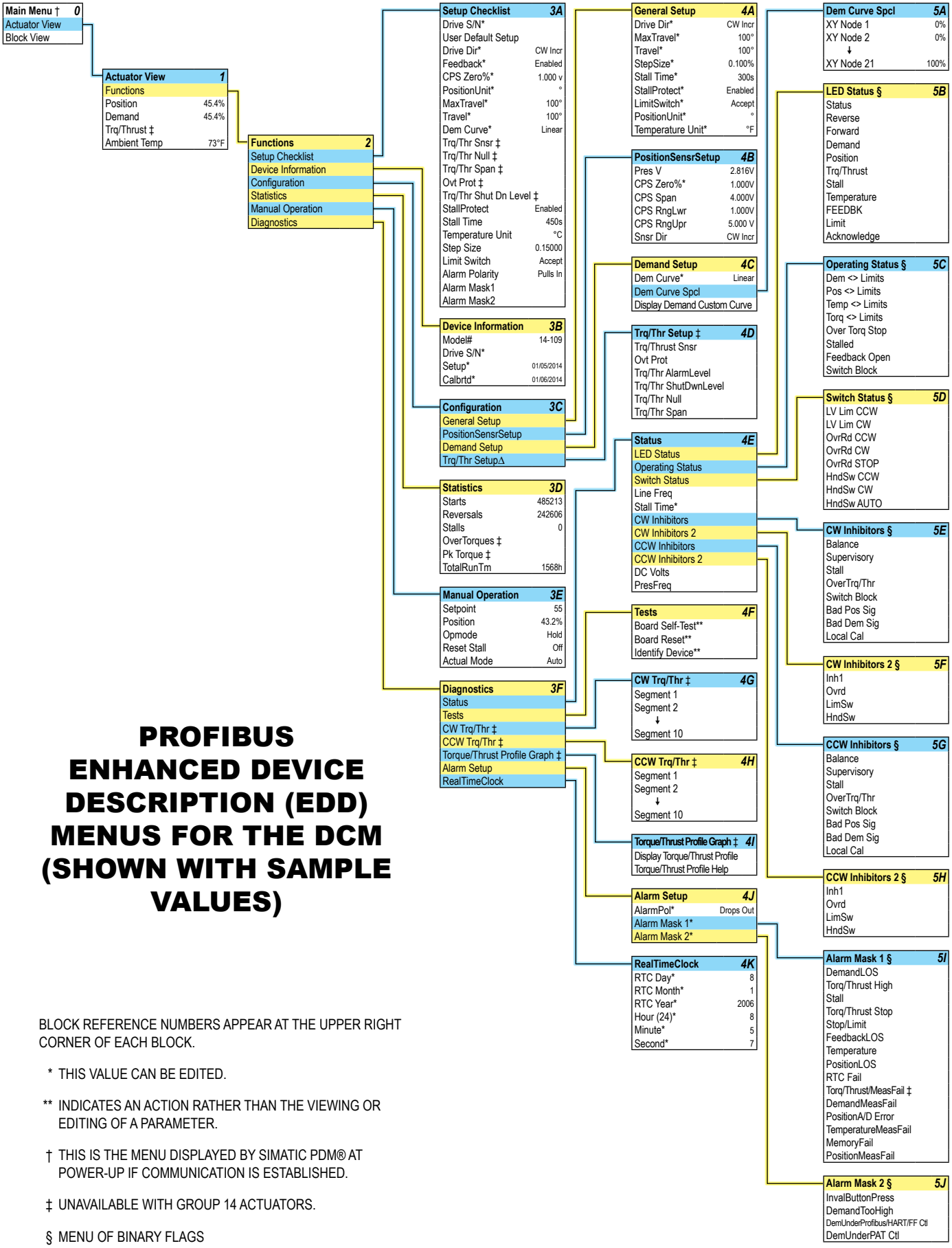
PROFIBUS CONFIGURATION for the DCM

The Beck Profibus EDD is used to configure the actuator parameters and read diagnostic information. This EDD includes two separate menu systems: Actuator View and Block View.

The Actuator View is designed for maintenance of drive parameters and is based on the existing Beck-MK2 HART DD. Long time users of HART will find the Actuator View familiar. The chart details the structure of the Actuator View menu tree.

The Block View contains standard Profibus settings that are of more interest to control room end users. Block view is where Profibus-specific parameters are located as well as the 4 block types supported by the The Beck Profibus EDD: a Physical Block, a Transducer Block, an Analog Output Function Block and two Analog Input Function Blocks. The Beck Profibus EDD supports all mandatory parameters listed in the PROFIBUS-PA Profile for Process Control Devices Version 3.01.

PROFIBUS® PA *Enhanced Device Description (EDD)*



PROFIBUS ENHANCED DEVICE DESCRIPTION (EDD) MENUS FOR THE DCM (SHOWN WITH SAMPLE VALUES)

BLOCK REFERENCE NUMBERS APPEAR AT THE UPPER RIGHT CORNER OF EACH BLOCK.

* THIS VALUE CAN BE EDITED.

** INDICATES AN ACTION RATHER THAN THE VIEWING OR EDITING OF A PARAMETER.

† THIS IS THE MENU DISPLAYED BY SIMATIC PDM® AT POWER-UP IF COMMUNICATION IS ESTABLISHED.

‡ UNAVAILABLE WITH GROUP 14 ACTUATORS.

§ MENU OF BINARY FLAGS

PROFIBUS CONTROL for DCM

Profibus control systems use GSD files to communicate with devices. The BECK0B3A GSD file is compatible with a wide variety of different PLCs and control systems. The parameters in the GSD file are organized into "slots" and "signals".

The following diagram details how the actuator setpoint, shaft position, shaft torque and temperature are mapped within the GSD file. Please note that the setpoint status (Slot 0, Signal 1) must be set to the Profibus status code of "GOOD" (128) or the DCM setpoint will not change.

SLOT# 000	MODULE SP+ READ-BACK+ POS_D	SIGNAL 0	BYTE OFFSET 0	I/O DIRECTION OUTPUT	DATA TYPE FLOAT	BLOCK AOFB	PARAMETER SP (VALUE)	SETPOINT
		SIGNAL 1	BYTE OFFSET 4	I/O DIRECTION OUTPUT	DATA TYPE BYTE	BLOCK AOFB	PARAMETER SP (STATUS)	SETPOINT STATUS
		SIGNAL 2	BYTE OFFSET 0	I/O DIRECTION INPUT	DATA TYPE FLOAT	BLOCK AOFB	PARAMETER READBACK (VALUE)	SHAFT POSITION
		SIGNAL 3	BYTE OFFSET 4	I/O DIRECTION INPUT	DATA TYPE BYTE	BLOCK AOFB	PARAMETER READBACK (STATUS)	POSITION STATUS
SLOT# 001	MODULE OUT (long)	SIGNAL 0	BYTE OFFSET 0	I/O DIRECTION INPUT	DATA TYPE FLOAT	BLOCK AIFB1	PARAMETER OUT (VALUE)	TORQUE
		SIGNAL 1	BYTE OFFSET 4	I/O DIRECTION INPUT	DATA TYPE BYTE	BLOCK AIFB1	PARAMETER OUT (STATUS)	TORQUE STATUS
SLOT# 002	MODULE OUT (long)	SIGNAL 0	BYTE OFFSET 0	I/O DIRECTION INPUT	DATA TYPE FLOAT	BLOCK AIFB2	PARAMETER OUT (VALUE)	AMBIENT °C / °F
		SIGNAL 1	BYTE OFFSET 4	I/O DIRECTION INPUT	DATA TYPE BYTE	BLOCK AIFB2	PARAMETER OUT (STATUS)	AMBIENT STATUS

BECK® HAROLD BECK & SONS, INC. Made in USA
11 TERRY DRIVE • NEWTOWN, PENNSYLVANIA 18940 • USA
PHONE: 215-968-4600 • FAX: 215-860-6383 • E-MAIL: sales@haroldbeck.com
www.haroldbeck.com