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ServoPac-A TTA-PRO Positioners

Operation in speed or torque mode via Profibus

1) INTRODUCTION

This application note is dedicated to the TTA-PRO drive operation in speed or torque mode via Profibus. The complete information for the TTA-PRO amplifier commissioning and parameterization can be found in the pertaining manuals. This specific information concerns the operation of bit 3 of the control word in speed or torque mode via Profibus, and the saving, in the drive EEPROM, of the speed or torque operating mode selection.

2) EVOLUTION OF THE DRIVE FUNCTIONALITIES

The evolution of the drive functionalities in the speed or torque operating mode via Profibus are listed below.

TTA-PRO firmware release	Control word bit 3 operation in torque or speed mode	Selection of the torque or speed mode	Reference manual
Up to 529.C8 (March 2007)	Any influence on the drive behaviour in torque or speed mode	Not saved in the drive EEPROM (the drive is always configured in position mode at power on)	TTA-PRO Profibus drive: Profibus communication profile (Issue 1.0)
From 529.D8 (April 2007) to 52A.A8 (September 2008)	"Inhibit operation" if set to 0 (stops with ramp given by PNU 723 and goes to Ready state). "Enable operation" if set at 1	Not saved in the drive EEPROM (the drive is always configured in position mode at power on)	TTA-PRO Profibus drive: Profibus communication profile (Issue 1.1 & 1.2)
From 52B.08 (October 2008)	If bit 8 of the ASCII command HW or of PNU 842 is set at 0 (factory setting): control word bit 3 allows to "Enable" or "Inhibit" the drive operation If bit 8 of the ASCII command HW or of PNU 842 is set at 1: control word bit 3 has no influence on the drive behaviour in torque or speed mode (compatibility with first firmware releases) Remark: the drive configuration (HW ASCII command) is saved in the drive EEPROM and also in the parameter file (*.par)	If bit 9 of the ASCII command HW or of PNU 842 is set at 0 (factory setting): the selection of the torque or speed mode is not saved in the drive EEPROM If bit 9 of the ASCII command HW or of PNU 842 is set at 1: the selection of the torque or speed mode is saved in the drive EEPROM Remark: the drive configuration (HW ASCII command) is saved in the drive EEPROM and also in the parameter file (*.par)	TTA-PRO Profibus drive: Profibus communication profile (Issue 1.3)

3) DRIVE CONFIGURATION VIA THE SERIAL LINK RS232

For the compatibility with the first firmware releases (before version 529.D8) regarding the control word bit 3 operation in torque or speed mode, proceed as follows:

- check that the drive firmware version is equal to or greater than version 52B.08,
- read the value of the ASCII command HW by using an ASCII terminal,
- send the ASCII command HW for setting to 1 bit 8 in the value previously read,
- save the drive parameter file (*.par) to be used in the future,
- execute the command "Save parameters to EEPROM".

For getting the selection of the torque or speed mode saved in the drive EEPROM, proceed as follows:

- check that the drive firmware version is equal to or greater than version 52B.08,
- read the value of the ASCII command HW by using an ASCII terminal,
- send the ASCII command HW for setting to 1 bit 9 in the value previously read,
- save the drive parameter file (*.par) to be used in the future,
- execute the command "Save parameters to EEPROM".

Drive configuration   Variable

Instruction	HW
Parameter	double word.
Remarks	This variable gives the drive configuration.

Bit(0-31)	Meaning
4	Analog input reversal for speed limitation (TTA-PRO) or torque limitation (ServoPac-A)
6	Enable "Phasing OK" signal on the analog output (TTA & TTA-PRO)
7	Enable/Disable analog input for speed limitation (TTA-PRO)
8	Control word bit 3 (C.3) not operating in torque/speed mode (TTA-PRO)
9	Speed / Torque mode saving in the EEPROM (TTA-PRO)
10	Stop with current limit on ENABLE input desactivation and fault reaction (TTA-PRO)
others	Reserved

4) DRIVE CONFIGURATION VIA PROFIBUS

Drive configuration   **PNU :   842**

Parameter	1 word.

bit	description
4	Analog input reversal for speed limitation
6	Enable "Phasing OK" signal on the analog output
7	Enable/Disable analog input for speed limitation
8	Control word bit 3 (C.3) not operating in torque/speed mode
9	Speed / Torque mode saving in the EEPROM
10	Stop with current limit on ENABLE input desactivation and fault reaction
others	Reserved

The drive configuration can be saved in the drive EEPROM by using the PNU 729.