

Supplement to the ACS 600 Firmware Manual, System Application Program 5.2

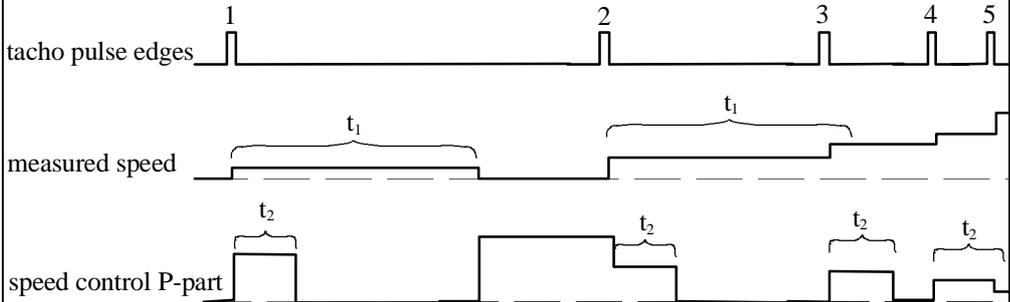
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This supplement is to be used in conjunction with the ACS 600 Firmware Manual for System Application Program 5.2.

This supplement gives information for the software version AMXX5220 (also for AMXX5210).

14	Group name:	DIGITAL OUTPUTS			
12		DO2 GRP+INDEX MOD (not available with NAMC-03/04)			
Index	Description:	This parameter defines the DO2 control in LOCAL and REMOTE modes. 0 = REM/LOCAL = DO2 Group + Index parametrisation with Par. 14.04 and 14.05 affects in REMOTE and LOCAL mode. 1 = LOCAL = DO2 Group + Index parametrisation is effective only in LOCAL mode. In the REMOTE mode, signal 7.02 ACW bit 14 controls DO2.			
unit:	type: B	Min: 0	Max: 1	Def: 0	Integer scaling: 1 == 1

27	Group name:	FLUX CONTROL			
06		FLUX RAMP GAIN1			
Index	Description:	This parameter can be used to speed up the slope of the flux reference and it is needed only when very fast (e.g. 2...4 s) acceleration or deceleration is required in the process. The value increment effects to faster flux reference changes. Tuning procedure: Record the speed, torque reference, torque actual and flux actual: Run the acceleration and deceleration test. Increase the values until torque actual follows correctly the used torque reference.			
unit:	type: I	Min: 5	Max: 1000	Def: 8	Integer scaling:
07		FLUX RAMP GAIN2			
Index	Description:	This parameter is used together with previous parameter 27.06 FLUX RAMP GAIN1 in the same way.			
unit:	type: I	Min: 1	Max: 8	Def: 1	Integer scaling:

50	Group name:	SPEED MEASUREMENT			
13 Index:	Description:	<p>ZERO DETECT DELAY</p> <p>This parameter can be adjusted for the best possible performance at the low speeds when a pulse encoder is used and pulses are not received during the 1 ms measurement cycle.</p> <p>The definition of “low speeds” depends on the type of the encoder used. For example if encoder pulse number is 2048 and both edges of A and B channels are calculated, there are 8192 pulses per revolution. Then at least one pulse per millisecond is received at 7.3 rpm (1 pulse / ms \Rightarrow 1000 pulses/s \Rightarrow 1000/8192 rev/s \approx 7.3 rpm). Thus 4 ms between pulses corresponds to 1.8 rpm and 80 ms to 0.09 rpm.</p> <p>See the following example with parameter settings: 50.13 = 250 ms, 50.14 = 4 ms, constant speed reference.</p> <p>After receiving a pulse, measured speed is calculated and speed control P-part is set to a value related to speed error. When no new pulses are received within 1 ms, the measured speed and P-part (due the constant speed reference) are held. After the SPEED HOLD TIME P-part is forced to zero so that speed control will not be based on an obsolete speed measurement value. After ZERO DETECT DELAY, it is assumed that speed is zero, causing clearing of measured speed and allowing use of P-part.</p> <p>After the next pulse, some measured speed is calculated again and P-part accordingly. P-part is cleared again after SPEED HOLD TIME. The measured speed is not set to zero anymore, because a new pulse comes before ZERO DETECT DELAY.</p> <p>The time between pulses 3 and 4 is still longer than SPEED HOLD TIME and P-part is forced to zero.</p> <p>The time between pulses 4 and 5 is already so short that neither P-part nor the measured speed is forced to zero.</p>  <p><i>Figure 1: ZERO DETECT DELAY = 250ms (t_1) and SPEED HOLD TIME = 4ms (t_2).</i></p> <p>With the configuration of figure 1 there is a long ZERO DETECT DELAY that gives accurate speed measurement. The short SPEED HOLD TIME keeps the speed control stable in many cases, because speed control output is not influenced by “old” speed measurement. On the other hand, if P-part is very large, forcing it to zero causes undesirable torque steps. The tuning values depends on the clearances of mechanics. Therefore after increasing these parameter values, check that the torque actual value is still smooth.</p>			
unit: ms	type: I	Min: 2 ms	Max: 2000 ms	Def: 4 ms	Integer scaling:

50	Group name:	<i>SPEED MEASUREMENT</i>			
14		SPEED HOLD TIME			
Index:	Description:	<p>The time after the P-part of speed control is forced to zero, if the time has been elapsed and no new pulses have been received after the last sample. By increasing the value, it amplifies the effect of P-part at the low speeds due to the longer effect time of P-part. Oscillation can occur, if the time is too long.</p> <p>See description of Par. 50.13 ZERO DETECT DELAY above.</p> <p>Note! The value of SPEED HOLD TIME <= ZERO DETECT DELAY.</p>			
unit: ms	type: I	Min: See 50.13	Max: 2000 ms	Def: 4 ms	Integer scaling:

70	Group name:	<i>DDCS COMMUNICATION</i>			
19		CH0 HW CONNECTION			
Index:	Description:	<p>This parameter is used to enable or disable the regeneration of CH0 optotransmitter in DDCS mode (Par. 71.01 DRIVEBUS MODE = OFF). Regeneration means that the drive echoes all messages back. DDCS mode is typically used with APC2, AC70 and AC450 controllers.</p> <p>0 = RING Regeneration is disabled. Used with ring-type bus topology.</p> <p>1 = STAR Regeneration disabled. Used with star-type bus topology. Typically with configurations: AC450 – CI810 – NDBU-95 branching unit(s) – ACS 600.</p> <p>Note: This parameter has no effect in DriveBus mode.</p> <p>Select RING, if the CH0 channels on the NAMC boards have been connected to ring.</p>			
Unit:	type: B	Min: 0	Max: 1	Def: 1 = STAR	Integer scaling: 1 == 1