

ACS800 BI-POLAR ANALOG OUTPUT

Description:

This document will detail a method to provide bi-polar analog outputs with the standard 0-20ma drive analog output. It uses a two block AP program to bias the signal so that the 0-20ma analog output simulates a bi-polar output to represent a negative to positive range.

Title for the main body of the document:

ACS800 Simulated bi-polar analog outputs

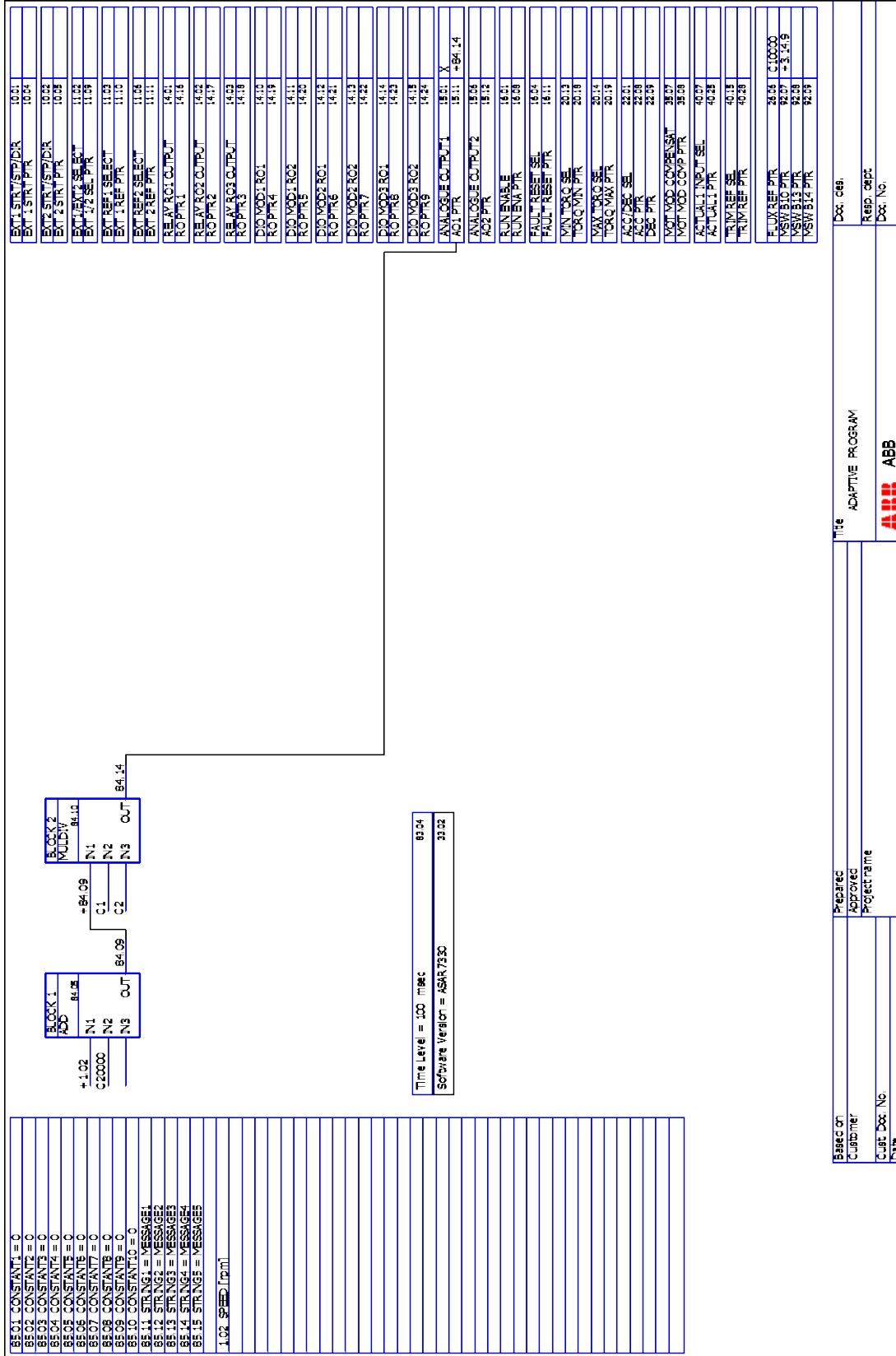
Documents or other reference material:

3AFE 64527274 Rev C / EN Application Guide, Adaptive Programming

Corrective Actions:

None

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Prepared	Doc. Des.
Approved	ADAPTIVE PROGRAM
Project Name	REP. OPRZ
Client Doc. No.	Doc. No.
Date	

EXT 1 STR V/DIA	1031
EXT 1 STR I/PTR	1034
EXT 2 STR V/DIA	1032
EXT 2 STR I/PTR	1035
EXT 1 V2 SEL BOT	1103
EXT 1 V2 SEL PTR	1109
EXT 1 REF SELECT	1109
EXT 1 REF PIR	1109
EXT 1 REF2 SELECT	1109
EXT 2 REF PIR	1111
RELAY RC1 OUTPUT	1401
ROPTR1	1410
RELAY RC2 OUTPUT	1402
ROPTR2	1407
RELAY RC3 OUTPUT	1403
ROPTR3	1418
DIO MOD1 RC1	1410
ROPTR4	1419
DIO MOD1 RC2	1411
ROPTR5	1420
DIO MOD2 RC1	1412
ROPTR6	1421
DIO MOD2 RC2	1413
ROPTR7	1422
DIO MOD3 RC1	1414
ROPTR8	1423
DIO MOD3 RC2	1415
ROPTR9	1424
DIO LOGIC OUTPUT1	1801 X
AO1 PIR	1811 = 84.14
ANALOGUE OUTPUT2	1804
AO2 PIR	1812
RUN ENABLE	1801
RUN ENA PIR	1808
FAULT RESET SEL	1804
FAULT RESET PTR	1811
MIN TORQ SEL	2013
TORQ MIN PIR	2018
MAX TORQ SEL	2014
TORQ MAX PIR	2019
ACC/DEC SEL	2201
ACC PIR	2208
DEC PIR	2209
VOLT MOD COMPENSA	3807
VOLT MOD COMP PTR	3809
ACTUAL INPUT SEL	4007
ACTUAL1 PIR	4028
TRIM REF SEL	4018
TRIM REF PIR	4028
FLUX REF PIR	2605 C10000
NSW B10 PIR	9207 = 3.14.9
NSW B13 PIR	9208
NSW B14 PIR	9209

The simple AP program shown on the previous page creates a 0 to 20 ma output from the drives speed signal in such a way as to show full reverse speed as 0 ma and full forward speed as +20 ma. Zero speed will be biased to 10 ma. Converting this current output to voltage with a 500 ohm resistor provides a 0 to 10 volt output which can drive an analog or digital meter to show the full negative to positive speed range.

This method can be used with other bi-polar signals such as torque by simply changing the input defined in parameter 84.06, the IN1 signal of AP block 1. No scaling changes are required as the drive provides fieldbus scaled values when pointed to actual values. This biasing requires the value of 20,000 to be added to the signal in block 1 and the resulting value divided by 2 with block 2 which transforms the value as shown here:

Input	Output
-20000	0
0	10000
20000	20000

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