# ACS800 ALARM (FLASHING) AND FAULT INDICATION PROGRAMMED TO ONE RELAY OUTPUT.

## Description:

Customer's requirement was to have one Relay Output be able to indicate an Alarm or Fault was active in the ACS800. The Relay Output would be off if there was no active alarm or fault in the drive however, if there was an active alarm the relay output must flash and with a fault the relay would stay on until the fault was cleared.

## Problem:

The ACS800 standard firmware does not support the ability to have multiple functions tied to one Relay Output.

## Documents or other reference material:

ACS800 Firmware Manual.
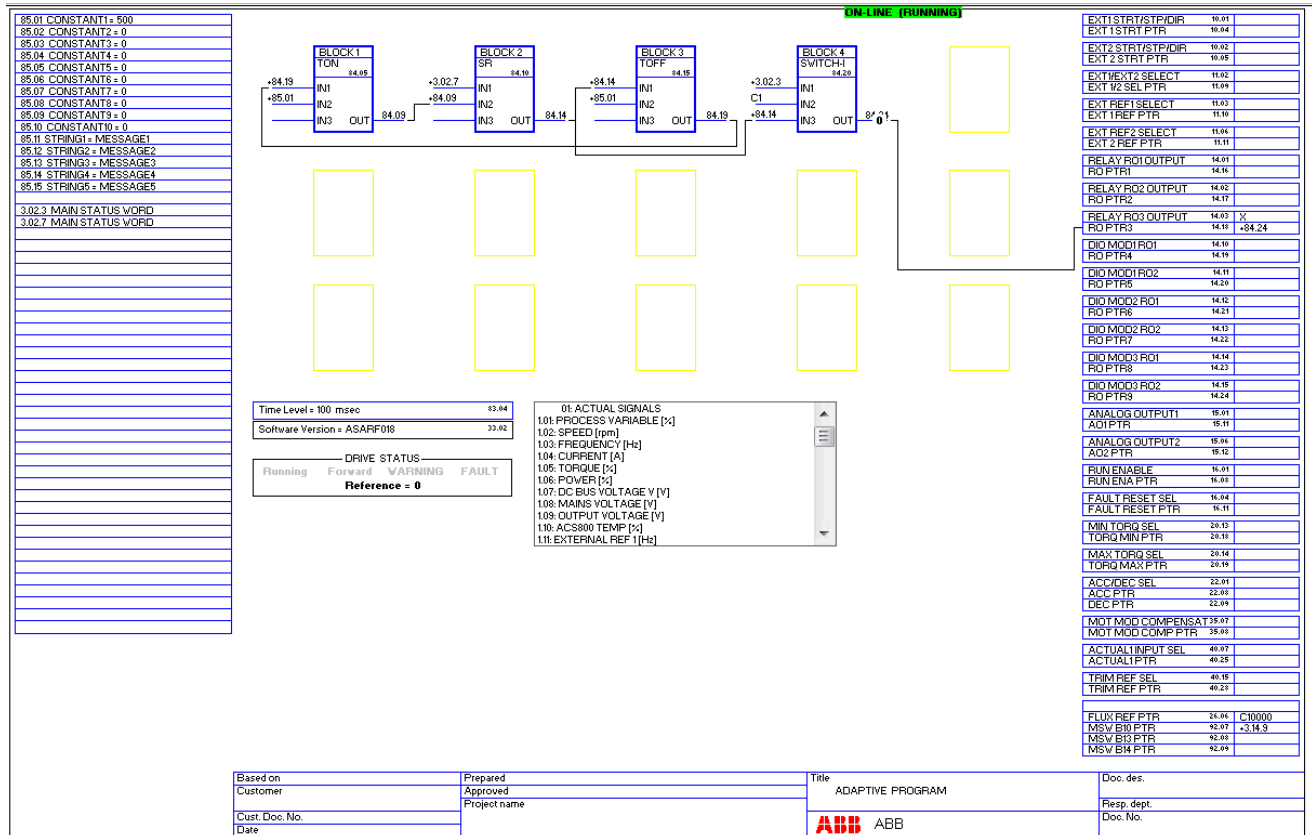*ACS800 Adaptive Programming Guide.*

## Corrective Actions:

By using the AP feature in the ACS800 we are able to program one relay output for both an Alarm and Fault indication. Below is the AP program that will toggle Relay RO3 when there is an Alarm and flash at a rate programmed by 85.01. If a Fault would occur the output will go to a steady on state until reset. Please note that the RO outputs have a limited number of cycles and by incorporating this program may shorten the life of the device.

1) 84.05 = TON
2) 84.06 = +.084.019.00
3) 84.07 = +.085.001.00
4) 84.10 = SR
5) 84.11 = +.003.002.03
6) 84.12 = +.084.009.00
7) 84.15 = TOFF
8) 84.16 = +.084.014.00
9) 84.17 = +.085.001.00
10) 84.20 = Switch I
11) 84.21 = +.003.002.03
12) 84.22 = +.C.1
13) 84.23 = +.084.014.00
14) 85.01 = 500 (this sets the Alarm flash time in ms and can be adjusted on the fly if desired)
15) 14.03 = PARAM 14.18
16) 14.18 = -.084.024.00
17) 83.01 = RUN
18) 83.04 = 100ms

# AP PROGRAM FUNCTION BLOCKS

ON-LINE [RUNNING]

| | |
|---|---|
| 85.01 CONSTANT1 = 500 | |
| 85.02 CONSTANT2 = 0 | |
| 85.03 CONSTANT3 = 0 | |
| 85.04 CONSTANT4 = 0 | |
| 85.05 CONSTANT5 = 0 | |
| 85.06 CONSTANT6 = 0 | |
| 85.07 CONSTANT7 = 0 | |
| 85.08 CONSTANT8 = 0 | |
| 85.09 CONSTANT9 = 0 | |
| 85.10 CONSTANT10 = 0 | |
| 85.11 STRING1 = MESSAGE1 | |
| 85.12 STRING2 = MESSAGE2 | |
| 85.13 STRING3 = MESSAGE3 | |
| 85.14 STRING4 = MESSAGE4 | |
| 85.15 STRING5 = MESSAGE5 | |
| 3.02.3 MAIN STATUS WORD | |
| 3.02.7 MAIN STATUS WORD | |

**BLOCK 1** TON  84.05
IN1 +84.19
IN2 +85.01
IN3  OUT  84.09

**BLOCK 2** SR  84.10
IN1 +3.02.7
IN2 +84.09
IN3  OUT  84.14

**BLOCK 3** TOFF  84.15
IN1 +84.14
IN2 +85.01
IN3  OUT  84.19

**BLOCK 4** SWITCH-I  84.20
IN1 +3.02.3
C1
IN2 +84.14
IN3  OUT  &or1

| | |
|---|---|
| Time Level = 100 msec | 83.04 |
| Software Version = ASARF018 | 33.02 |

── DRIVE STATUS ──
Running  Forward  WARNING  FAULT
**Reference = 0**

01: ACTUAL SIGNALS
1.01: PROCESS VARIABLE [%]
1.02: SPEED [rpm]
1.03: FREQUENCY [Hz]
1.04: CURRENT [A]
1.05: TORQUE [%]
1.06: POWER [%]
1.07: DC BUS VOLTAGE V [V]
1.08: MAINS VOLTAGE [V]
1.09: OUTPUT VOLTAGE [V]
1.10: ACS800 TEMP [%]
1.11: EXTERNAL REF 1 [Hz]

| | | |
|---|---|---|
| EXT1 STRT/STP/DIR | 10.01 | |
| EXT 1 STRT PTR | 10.04 | |
| EXT2 STRT/STP/DIR | 10.02 | |
| EXT 2 STRT PTR | 10.05 | |
| EXT1/EXT2 SELECT | 11.02 | |
| EXT 1/2 SEL PTR | 11.09 | |
| EXT REF1SELECT | 11.03 | |
| EXT 1 REF PTR | 11.10 | |
| EXT REF2 SELECT | 11.06 | |
| EXT 2 REF PTR | 11.11 | |
| RELAY RO1 OUTPUT | 14.01 | |
| RO PTR1 | 14.16 | |
| RELAY RO2 OUTPUT | 14.02 | |
| RO PTR2 | 14.17 | |
| RELAY RO3 OUTPUT | 14.03 | X |
| RO PTR3 | 14.18 | +84.24 |
| DIO MOD1 RO1 | 14.10 | |
| RO PTR4 | 14.19 | |
| DIO MOD1 RO2 | 14.11 | |
| RO PTR5 | 14.20 | |
| DIO MOD2 RO1 | 14.12 | |
| RO PTR6 | 14.21 | |
| DIO MOD2 RO2 | 14.13 | |
| RO PTR7 | 14.22 | |
| DIO MOD3 RO1 | 14.14 | |
| RO PTR8 | 14.23 | |
| DIO MOD3 RO2 | 14.15 | |
| RO PTR9 | 14.24 | |
| ANALOG OUTPUT1 | 15.01 | |
| AO1 PTR | 15.11 | |
| ANALOG OUTPUT2 | 15.06 | |
| AO2 PTR | 15.12 | |
| RUN ENABLE | 16.01 | |
| RUN ENA PTR | 16.08 | |
| FAULT RESET SEL | 16.04 | |
| FAULT RESET PTR | 16.11 | |
| MIN TORQ SEL | 20.13 | |
| TORQ MIN PTR | 20.18 | |
| MAX TORQ SEL | 20.14 | |
| TORQ MAX PTR | 20.19 | |
| ACC/DEC SEL | 22.01 | |
| ACC PTR | 22.08 | |
| DEC PTR | 22.09 | |
| MOT MOD COMPENSAT | 35.07 | |
| MOT MOD COMP PTR | 35.08 | |
| ACTUAL1 INPUT SEL | 40.07 | |
| ACTUAL1 PTR | 40.25 | |
| TRIM REF SEL | 40.15 | |
| TRIM REF PTR | 40.28 | |
| FLUX REF PTR | 26.06 | C10000 |
| MSV B10 PTR | 92.07 | +3.14.9 |
| MSV B13 PTR | 92.08 | |
| MSV B14 PTR | 92.09 | |

| | | | |
|---|---|---|---|
| Based on | Prepared | Title | Doc. des. |
| Customer | Approved | ADAPTIVE PROGRAM | |
| | Project name | | Resp. dept. |
| Cust. Doc. No. | | | Doc. No. |
| Date | | ABB | |

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|---|---|---|
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| Product Categories: ACS800 | | |