

Control IQ – Functional Devices Driver Details

This document contains the details for using the Functional Driver

Subsystem Type: FunDev

Personality field details in the Subsystem table

RefreshInterval=[30] = Wait Time (in seconds) between rescans of AIs and DIs
DefaultSetpoint=[72] = Set the default UC202 Setpoint for Function 61
Addressing

Addressing Schema

[SynthesizerAddress].TransceiverAddress.Parameter

NOTE if the SynthesizerAddress is omitted, then the driver assumes a single synthesizer on the port. If the Synthesizer address IS provided, the address MUST be 1 through 31. Synthesizer Address 0 is NOT supported. You may have a single synthesizer address (lets say "1") and that would indicate to the driver, that the synthesizer needs to be shut down when it had completed it's transmit. This is used when a Functional Devices, and Scientific Controls transmitter is on the same power distribution system.

Where

SynthesizerAddress - the address of the Synthesizer - 1-32
TransceiverAddress - 1-1024 (Note the DIP switch address is 1 less than the value DIP=0 is Address=1)
Parameter - 1 = Meter (accumulator)
2 = AI
3 = AI as Second Address (UC202)
4-9 = AIs (Future)
10 = DI1 DI1 on RTC7/9
11 = DI2 DI2 on RTC7/9
12 = DI1 Latched
13 = DI2 Latched
14 = Command State (2nd Byte or D command)

20 = Bit 1 on highest byte of Return Data from "A" command (AI)
21 = Bit 2 on highest byte of Return Data from "A" command (AI)
22 = Bit 3 on highest byte of Return Data from "A" command (AI)
23 = Bit 4 on highest byte of Return Data from "A" command (AI)
24 = Bit 5 on highest byte of Return Data from "A" command (AI)
25 = Bit 6 on highest byte of Return Data from "A" command (AI)
26 = Bit 7 on highest byte of Return Data from "A" command (AI)

30 = Bit 1 on highest byte of Return Data from "B" command (AI)
31 = Bit 2 on highest byte of Return Data from "B" command (AI)
32 = Bit 3 on highest byte of Return Data from "B" command (AI)
33 = Bit 4 on highest byte of Return Data from "B" command (AI)

- 34 = Bit 5 on highest byte of Return Data from "B" command (AI)
- 35 = Bit 6 on highest byte of Return Data from "B" command (AI)
- 36 = Bit 7 on highest byte of Return Data from "B" command (AI)

- 40 = Bit 1 on highest byte of Return Data from "D" command (DI)
- 41 = Bit 2 on highest byte of Return Data from "D" command (DI)
- 42 = Bit 3 on highest byte of Return Data from "D" command (DI)
- 43 = Bit 4 on highest byte of Return Data from "D" command (DI)
- 44 = Bit 5 on highest byte of Return Data from "D" command (DI)
- 45 = Bit 6 on highest byte of Return Data from "D" command (DI)
- 46 = Bit 7 on highest byte of Return Data from "D" command (DI)

- 50 = DO1
- 51 = DO2
- 52-59 = DOs (Future)
- 60 = AO Direct
- 61 = AO Setpoint Adjustment to UC202
- 62-69 = AOs (Future)

AI's and AO's are scaled 0-255 based on the values in the Class_AI / Class_AO tables for Zero and Span. I.E. for a 1000 ohm temperature sensor, Zero= -40(f) and Span= 215(f). A 1K ohm resistor produces 70 deg F. In a UC202 the scaling is 40 to 103.

AOs (on a RTC7) appears to be 0-10vdc, however testing (without a load) produced 1-11 vdc output.

DI's actually come back with the bit set (1) if the DI is open and (0) if the DI is closed. The driver reverses this and returns a 1 when the input is shorted and a 0 when the input is open. The DI actually brings back the status of the upper most byte of the return data.

Supported Commands

- xxM - Change Sythesizer address (wake it up) (xx = 1-31)
- xxxxF - Send Off command to xxxx
- xxxxN - Send On command to xxxx
- xxxxH - Send Half command to xxxx
- xxxxA - Read Analog Input / Meter from xxxx
- xxxxB - Read Analog Input from Secondary Address
- xxxxD - Read Digital Input(s) from xxxx
- xxxxL - Read Latched Digital Inputs from xxxx
- xxxxR - Reset Latched Digital Inputs (follows the L command)
- xxxxVhh - Send Hex Value (AO) to xxxx