

## AVT-85x ATD Monitor Function (ATD)

The so-called “ATD Monitor” function (noted as “ATD”) became available in firmware version “0.8 (0B)”. It is available in later versions. This document provides a brief description of the function and the related commands.

In firmware version “0.8 (0B)” the function searched and processed all received CAN messages with ISO15765 operations disabled.

In firmware version “0.9 (0B)” the function searched and processed all received CAN messages with ISO15765 operations enabled.

In firmware version “1.0 (0A)” two ISO15765 operational modes were introduced.

- The “ATD Monitor” function is active for all received CAN messages when ISO15765 Mode1 is active.
- The “ATD Monitor” function is active only for the specified CAN message when ISO15765 Mode2 is active.

### Operational Description

The “ATD Monitor” function was developed to read a specified CAN message that is reporting an “Analog To Digital” (ATD) reading.

The “ATD” monitor function is available for both CAN0 and CAN4 channels simultaneously.

The user specifies the CAN ID to watch for.

The user specifies the first three bytes of the data field (they are assumed to be static).

The fourth byte of the data field is assumed to be the ATD channel number (\$00 to \$0F).

The fifth and sixth bytes of the data field are assumed to be the ATD value, 16-bit, unsigned.

The last two bytes of the data field (if present) are ignored.

The minimum and maximum values ‘seen’ for each ATD channel are stored.

The count of the number of messages, for each channel, ‘seen’ are stored.

When the operator requests a status read of an ATD channel, the AVT-85x interface will report the count, the minimum, and the maximum values. Note that a status read is destructive: the count, minimum, and maximum are immediately reset. Reads can be done ‘on the fly’.

Operational commands are described on the following pages.

### ATD Monitor Function Status

71 41: Request status of ATD monitor function, both CAN channels.

72 41 0x: Request status of ATD monitor function.  
x: CAN channel 0 or 4

73 41 0x 0y Set status of ATD monitor function.  
x: CAN channel 0 or 4  
y: 0 - disabled  
1 - enabled

Response is:

83 41 0x 0y

### Report and Reset Count, Minimum, and Maximum values

71 42: Report and clear all ATD channels for both CAN channels  
(this command is not recommended, too much data is reported).

72 42 0x: Report and clear all ATD channels for CAN channel.  
x: CAN channel 0 or 4

73 42 0x 0y: Report and clear ATD channel and CAN channel.  
x: CAN channel 0 or 4  
y: ATD channel 0 to F

Response is:

89 42 0x 0y mm nn pp qq rr ss  
x: CAN channel 0 or 4  
y: ATD channel 0 to F  
mm nn: count  
pp qq: minimum value 'seen'  
rr ss: maximum value 'seen'

### Expected CAN ID

71 43: Report expected CAN ID for both CAN channels.

72 43 0x: Report expected CAN ID for CAN channel.  
x: CAN channel 0 or 4

7x 43 rs mm nn ... : Specify the expected CAN ID for CAN channel.  
r: b7: IDE bit:  
0: 11-bit  
1: 29-bit  
b6: RTR bit:  
0: normal frame  
1: RTR true, remote transmit request  
b5: 0  
b4: 0

s: CAN channel 0 or 4  
mm nn: 11-bit ID, right justified  
mm nn pp qq: 29-bit ID, right justified

Response is:

8x 43 rs mm nn ...

### Expected Data

71 44: Report expected first three bytes of data field, both CAN channels.

72 44 0x: Report expected first three bytes of data field CAN channel.  
x: CAN channel 0 or 4

75 44 0x mm nn pp: Set expected first three bytes of data field for CAN channel.  
x: CAN channel 0 or 4  
mm nn pp: expected data

Response is:

85 44 0x mm nn pp

### Example

Here is an example to set up CAN0.

Set the expected CAN ID = 73B

74 43 00 07 3B

Set the first three data bytes = FA 00 01

75 44 00 FA 00 01

Enable the function.

Each ATD channel for CAN0 is cleared when the function is enabled.

73 41 00 01

Let it run.

Read and clear ATD channel 4.

73 42 00 04

### Technical Support

Questions or Problems ?? Write or call for prompt support.

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The AVT-85x processes incoming (from the CAN bus) messages, using the following algorithm:

    If the CAN ID matches

        If the first three bytes of the data field match

            the fourth byte is the ATD channel number

                obtain the channel number

            the fifth and sixth bytes are the ATD reading

                obtain the ATD value (16-bit unsigned)

                If the reading, for the channel, is less than the stored minimum

                    save the new minimum

                If the reading, for the channel, is more than the stored maximum

                    save the new maximum