

WMT700 SDI-12 SUPPORT

This Application Note describes new and modified SDI-12 commands available from firmware version 2.05.

aXQx;c.c;n;yyyy! – Place Sensor in Submode B

This command starts continuous measurement mode in SDI-12 communication. When the command is executed, WMT700 returns its address.

There is no timeout for Submode B. To return to Submode A, use the **aXS!** command. The sensor stays in the selected submode after reset. This implementation follows WS425L v1.02.

Command:

```
aXQx;c.c;n;yyyy!
```

Response:

```
A<CR><LF>
```

where:

- a = Sensor address
- XQ = Command
- x = 0 = use scalar averaging, 1 = use vector averaging
- c.c = Wind direction coasting threshold in current wind speed units
- n = Number of samples that form the gust wind speed and direction (1 Hz sampling).
Valid range is 1 ... 9.
- yyyy = The length of averaging window [s]
- ! = Terminates the command.

aRo! – Poll Measurement in Submode B

This command returns wind readings with both polar and vector presentation from Submode B. The implementation follows WS425L v1.02. Note that if the sensor is not in Submode B, the response is the sensor address.

Command:

```
aRo!
```

where:

- a = Sensor address
- Ro = Poll command
- ! = Terminates the command

Response:

a <WS><WD><GS><GD><Wx><Wy><CR><LF>

where:

- a = Sensor address
- <WS> = Polar wind speed in selected units. Format: ± (ss)s.s
- <WD> = Polar wind direction in degrees. Format: (dd)d
- <GS> = Gust wind speed in selected units. Format: ± (ss)s.s
- <GD> = Gust wind direction in degrees. Format: (dd)d
- <Wx> = Unit vector pointing from West to East. Format ±s.sss
- <Wy> = Unit vector pointing from South to North. Format: ±s.sss

aXS! – Reset the Sensor to Submode A

This command resets the sensor from Submode B to A.

Command:

aXS!

Response:

A<CR><LF>

where:

- a = Sensor address
- XS = Command
- ! = Terminates the command

aX?! – Check Current Submode

This command shows the current submode.

Command:

aX?!

where:

- a = Sensor address
- X? = Command
- ! = Terminates the command

Response:

ax<CR><LF>

where:

- a = Sensor address
- x = 0 = submode A, 1 = submode B

aXUx! – Change Measurement Unit

This command changes the sensor measurement unit without leaving SDI-12 mode. Note that if an invalid unit value is applied, the response is the sensor address.

Command:

aXUx!

where:

a = Sensor address
XU = Command
x = 0 = mph, 1 = knots, 2 = km/h, 3 = m/s
! = Terminates the command.

Response:

ax<CR><LF>

a = Sensor address
x = 0 = mph, 1 = knots, 2 = km/h, 3 = m/s

aX*! – Check Current Wind Speed Measurement Unit

This command checks the wind speed measurement unit.

aX*!

where:

a = Sensor address
X* = Command
! = Terminates the command

Response:

ax<CR><LF>

a = Sensor address
x = +0 = mph, +1 = knots, +2 = km/h, +3 = m/s