



Argos Technical File

Program name:

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Program number:

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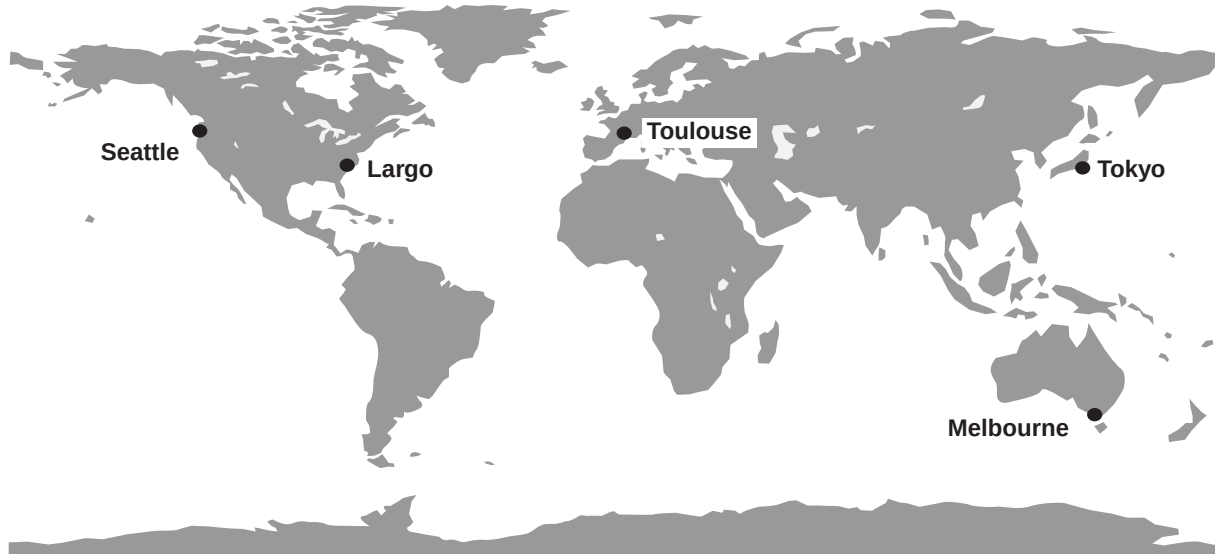
Argos Technical File

This Technical File is the document you use to specify how you want your Argos data processed. You'll probably find that your transmitter manufacturer is pleased to help you define your needs.

Each set of facing pages consists of:

- **on the left: an example and explanations of how to fill out the sheet,**
- **on the right: the part you fill out.**

Your Argos User Manual contains more detailed explanations. You can also contact your User Office by e-mail, fax or phone. We're here to help!



If you are in North America, your User Office is at:
Service Argos, Inc.
Suite 10, 1801 McCormick Drive
Largo MD 20774
USA
Tel.: (+1) 301-925-4411 - Fax: (+1) 301-925-8995
E-mail: useroffice@argosinc.com

Service Argos, Inc. (*West coast*)
4210 198th Street, S.W., Suite 202
Lynnwood - WA 98036 - USA
Tel.: (+ 1) 206 672 4699 - Fax : (+ 1) 206 672 8926
E-mail: seattle@argosinc.com

If you are in Japan, your User Office is at:
Cubic-I Ltd
Takeushi Building 6f - 8-1-14 Nishi Gotanda
Shinagawa-ku
Tokyo 141
Japan
Tel.: (+81) 3-3779-5506 - Fax: (+81) 3-3779-5783
E-mail: cubici@st.rim.or.jp

If you are in Australia or New Zealand, your User Office is at:
SIT
Bureau of Meteorology
GPO Box 1289 K
Melbourne, Victoria 3001
Australia
Tel.: (+61) 3-669-4650 (CLS office)
Fax: (+61) 3-669-4675
E-mail: clsargos@bom.gov.au

If you are anywhere else in the world, your User Office is at:
CLS
8-10, rue Hermès
Parc technologique du Canal
31526 Ramonville-Saint-Agne, France
Tél. (+ 33) 561-394-774 - Fax (+ 33) 561-394-785
E-mail: useroffice@cls.cnes.fr

You and your colleagues

Kate O'Riley is going to use Argos to track a drifting buoy.
The Argos ID n° for her transmitter (also known as
a Platform Transmitter Terminal, or PTT) is **10000**.



Program leader:

Last name

O'Riley

First name

Kate

Organization: **Wavey, Inc.**

Address: **Suite 204, 4015 Atlantic Avenue,**

Cocoa Beach, FL 326 994

Country: **USA**

Telephone: **(+1) 456-448-9673**

Telex: Fax: **(+1) 456-448-9688**

E-mail:

Colleagues who you authorize to modify your data processing requirements

Last name

Sanchez

First name

Brian

Phone

Kate authorizes Brian Sanchez to make
any modifications he wishes to the way
her data will be processed.

You and your colleagues

Program leader:

Last name

First name

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Organization:

Address:
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Country:

Telephone:

Telex: Fax:

E-mail:

Colleagues who you authorize to modify your data processing requirements

Last name

First name

Phone

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Data collection processing

If your transmitters are dedicated to the data collection service only, please fill out the following pages:

- Platform information,
- Sensor data processing,
- Type B1 processing and/or Type B4 processing.

Platform information*

* You can have your sensor messages time-coded to the nearest thousand of a second. Please consult your User Office for details.

Data collection processing

If your transmitters are dedicated to the data collection service only, please fill out the following pages:

- Platform information,
- Sensor data processing,
- Type B1 processing and/or Type B4 processing.

Platform information*

Platform number in decimal	Latitude	Longitude
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* You can have your sensor messages time-coded to the nearest thousand of a second.
Please consult your User Office for details.

Please fill out a sheet for each platform or set of identical platforms.

Location processing

If your transmitters are dedicated to the location service or to the location and data collection service, please fill out the following pages:

- Platform information,
- Sensor data processing,
- Type B1 processing and/or Type B4 processing.

Platform information

Platform IDs, in decimal

10000

Kate O'Riley enters 10000, the ID n° assigned on her Program Review, sent back by Argos.

• What type of platform will you be using?

- ☒ Drifting buoy ☐ Moored buoy
☐ Marine animal ☐ Land animal
☐ Boat ☐ Land mobile
☐ Other:

The type of platform, altitude and speed information will help us provide you with more accurate locations.

• What is the mean altitude of your platform (in meters)? 0

• What is the mean speed of your platform (in meters per second)? 2

• What type of location processing do you need for your platform:

- ☐ Standard location
☐ Standard location
+ Location Service Plus

Service Plus: location is calculated from just two (or more) messages during a satellite pass. This gives you the greatest number of locations. It's up to you to decide whether they're accurate enough. A surcharge is made for location Service Plus.

Please fill out a sheet for each platform or set of identical platforms.

Location processing

If your transmitters are dedicated to the location service or to the location and data collection service, please fill out the following pages:

- Platform information,
- Sensor data processing,
- Type B1 processing and/or Type B4 processing.

Platform information

Platform IDs, in decimal

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.....							
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.....							

• What type of platform will you be using?

- | | | |
|--|--------------------------------------|----------------------------------|
| ☐ Drifting buoy | ☐ Moored buoy | |
| ☐ Marine animal | ☐ Land animal | ☐ Bird |
| ☐ Boat | ☐ Land mobile | ☐ Balloon |
| ☐ Other: | | |

• What is the mean altitude of your platform (in meters)?

• What is the mean speed of your platform (in meters per second)?

• What type of location processing do you need for your platform:

- ☐ Standard location
- ☐ Standard location + Location Service Plus

Please fill out a sheet for each platform or set of identical platforms.

Sensor data processing

Please choose how you want your sensor data processed:

Type-A processing outputs results as raw data

Option Output	A1 decimal	A2 hexadecimal	A3 octal	A4 BCD
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Type-B processing produces physical data, for example temperatures in °C, by reading a calibration curve, or transfer function, to interpret the raw sensor outputs. The results are therefore immediately usable.

Option B1: you can use up to 20 points to define your calibration curve. Between the points, Argos estimates by linear interpolation.

Option B4: is suitable when your sensor calibration curve can be represented by a fifth-degree polynomial function. You can provide a second function to compensate the main sensor.

Platform IDs, in decimal

10000

Measurement n°	N° of bits	Type of Processing	Parameter	Measurement n°	N° of bits	Type of Processing	Parameter
1	10	B1	Atmospheric pressure	17	.....	.....	.....
2	8	B1	Water temperature	18	.....	.....	.....
3	8	A2	Not used	19	.....	.....	.....
4	6	A1	Battery	20	.....	.....	.....
5	.....	.....	.....	21	.....	.....	.....
6	.....	.....	.....	22	.....	.....	.....
7	.....	.....	.....	23	.....	.....	.....
8	.....	.....	.....	24	.....	.....	.....
9	.....	.....	.....	25	.....	.....	.....
10	.....	.....	.....	26	.....	.....	.....
11	.....	.....	.....	27	.....	.....	.....
12	.....	.....	.....	28	.....	.....	.....
13	.....	.....	.....	29	.....	.....	.....
14	.....	.....	.....	30	.....	.....	.....
15	.....	.....	.....	31	.....	.....	.....
16	.....	.....	.....	32	.....	.....	.....

Kate's platform, n° 10000, will measure atmospheric pressure and water temperature.

Please fill out a sheet for each platform or set of identical platforms.

Sensor data processing

Your transmitter can send numerical data collected by sensors connected to it. The values appear with your location results.

Please refer to your User Manual for explanations of the processing options, and for the message formats.

Your transmitter manufacturer will probably be pleased to discuss your requirements with you.

- Notes**
- You can connect up to 32 sensors to your transmitter.
 - Each measurement can use 1 to 32 bits.
 - Each measurement can be processed with a different option.
 - The total number of bits must be in the range 32 to 256.

Platform IDs, in decimal

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Measurement n°	N° of bits	Type of Processing	Parameter	Measurement n°	N° of bits	Type of Processing	Parameter
1				17	.....	.....	.....
2				18	.....	.....	.....
3				19	.....	.....	.....
4				20	.....	.....	.....
5				21	.....	.....	.....
6				22	.....	.....	.....
7				23	.....	.....	.....
8				24	.....	.....	.....
9				25	.....	.....	.....
10				26	.....	.....	.....
11				27	.....	.....	.....
12				28	.....	.....	.....
13				29	.....	.....	.....
14				30	.....	.....	.....
15				31	.....	.....	.....
16				32	.....	.....	.....

Fill out this sheet for sensors needing B1 processing.
Please use separate sheets for each different calibration curve.

Type-B1 processing

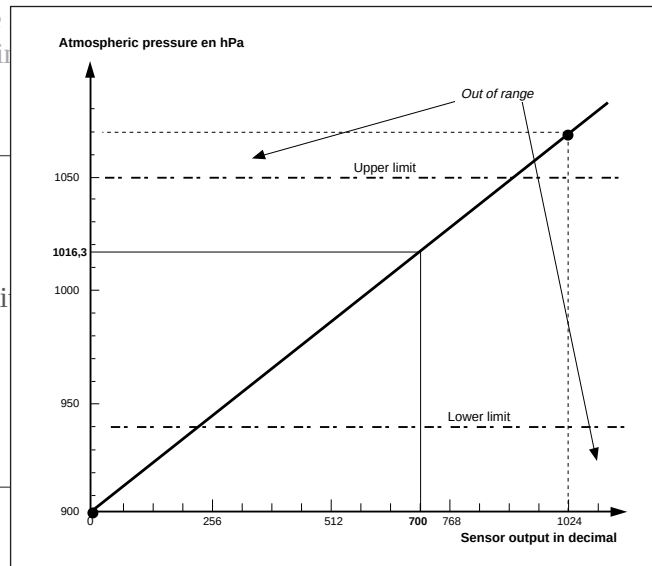
Kate O'Riley is using processing option B1 in its simplest form, i.e. defining two points to give a straight line

physical data, for example temperatures in °C, transfer function, to interpret the raw sensor

You can provide up to 20 points, including end points, to define your calibration curve. The curve points, Argos estimates

In the example, a raw sensor output of 700 converts to a pressure of 1016.3 hPa

seven signed (+ or -) significant figures, with signed or unsigned exponent.
Examples: -352, 10E-2.



Platform IDs, in decimal

10000

Measurement n°:

Number of bits:

Units

1

10

Hectopascal

Lower physical limit:

940.00

Upper physical limit:

1050.00

Raw value		Physical value	Raw value		Physical value
1	0	900	11		
	1023	1070	12		
Lower limit			13		
Upper limit			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

Fill out this sheet for sensors needing B1 processing.
Please use separate sheets for each different calibration curve.

Type-B1 processing

Processing option B1 outputs physical data, for example temperatures in °C, by reading a calibration curve, or transfer function, to interpret the raw sensor outputs.

You can provide up to 20 points, including end points, to define your calibration curve. The curve is a straight line segment or set of segments. Between the points, Argos estimates by linear interpolation.

Comments

- Raw values must be unsigned integers.
- Physical values may be expressed as up to seven signed (+ or -) significant figures, with a signed or unsigned exponent.
Examples: -352, 10E⁻².
- The first raw value / physical value pair must represent a raw value with all bits 0.
- The last raw value / physical value pair must represent a raw value with all bits 1.

Platform IDs, in decimal

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.....							

Measurement n°:		Lower physical limit:	
Number of bits:		Upper physical limit:	
Units			

Raw value			Physical value		
Raw value			Physical value		
1	.....	.....	11	.....	.....
2	.....	.....	12	.....	.....
3	.....	.....	13	.....	.....
4	.....	.....	14	.....	.....
5	.....	.....	15	.....	.....
6	.....	.....	16	.....	.....
7	.....	.....	17	.....	.....
8	.....	.....	18	.....	.....
9	.....	.....	19	.....	.....
10	.....	.....	20	.....	.....

Fill out this sheet for sensors needing B4 processing.
Please use separate sheets for each different B4 calibration curve.

Type-B4 processing

Processing option B4 outputs physical data, for example temperatures in °C, by reading a calibration curve, or transfer function, to interpret the raw sensor outputs.

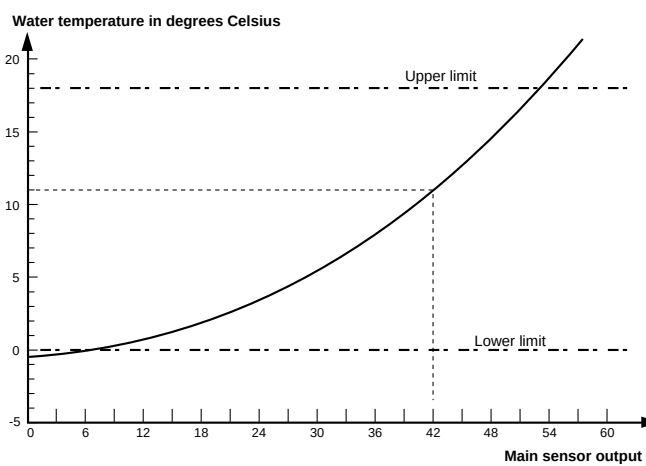
Your transfer function must be expressed as a fifth-degree polynomial, A_i , for the response of the main sensor. If you wish, you may define a second B_j , for the response of a compensating sensor.

Example: Kate O'Riley defines a sensor response such that the physical value for a main sensor output of 42 is 11°, for any compensating sensor output: all coefficients for the compensating sensor are zero.

- The formula is:

$$R = A_0 + A_1X_i + A_2X_i^2 + A_3X_i^3 + A_4X_i^4 + A_5X_i^5 + B_1X_j + B_2X_j^2 + B_3X_j^3 + B_4X_j^4 + B_5X_j^5$$

where: R is the result
 X_i and X_j are the main
and compensating sensor



Platform IDs, in decimal

10000

Measurement n°:

10

Number of bits:

6

Units

°C

Lower physical limit:

0

Upper physical limit:

15

Main raw value

Compensating raw value

Measurement n°

10

Number of bits

6

Coefficients

Main raw value

Compensating raw value

A0 : - 0.5
A1: 0
A2: 6.52 E-3
A3: 0
A4: 0
A5: 0

B1: 0
B2: 0
B3: 0
B4: 0
B5: 0

Fill out this sheet for sensors needing B4 processing.
Please use separate sheets for each different B4 calibration curve.

Type-B4 processing

Processing option B4 outputs physical data, for example temperatures in °C, by reading a calibration curve, or transfer function, to interpret the raw sensor outputs.

Your transfer function must be expressed as a fifth-degree polynomial, A_i , for the response of the main sensor. If you wish, you may define a second polynomial, B_j , for the response of a compensating sensor.

Comments

- Coefficients may be expressed as up to seven signed (+ or -) significant figures, with one or two figures signed or unsigned exponents.
Examples: -352, $10E^{-2}$.
- The formula is:

$$R = A_0 + A_1X_i + A_2X_i^2 + A_3X_i^3 + A_4X_i^4 + A_5X_i^5 + B_1X_j + B_2X_j^2 + B_3X_j^3 + B_4X_j^4 + B_5X_j^5$$
 where: R is the result
 X_i and X_j are the main and compensating sensor outputs
- By setting the B coefficients to zero, the formula becomes a simple polynomial for use with a single sensor.
- B4 processing can be used to switch the order of the sensor data in the results by setting A_1 through A_5 to zero and transferring to the compensating sensor (B_1 through B_5).

Platform IDs, in decimal

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.....							

Measurement n°:			
Number of bits:		Lower physical limit:	
Units		Upper physical limit:	

Main raw value

Compensating raw value

Measurement n°	.....	.....
Number of bits	.....	.....

Coefficients

Main raw value

Compensating raw value

A_0 :	
A_1 :	B_1 :
A_2 :	B_2 :
A_3 :	B_3 :
A_4 :	B_4 :
A_5 :	B_5 :