

Catalogues, Product Data Sheets and Manuals: tools to select instruments?

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A B C D E F G

Sensor Type
 Resolution
 Accuracy : +/- % F.S.
 Maximum Pressure (x Rated Range)
 Temperature Coefficient
 Filter
 Materials
 Size
 Weight

Type
 Range
 Accuracy : +/- % F.S.
 Temperature Limit
 - Operational
 - Compensated
 Coil Resistance
 Over Range Limit
 over range effect
 Dead Band
 Vibration Effect
 Thermistore
 Enclosure

Standard Range
 Over Range
 Resolution
 Accuracy : +/- % F.S.
 Linearity
 Temperature range
 Thermal Zero shift
 Diaphragm Displacement
 Length and Diameter
 Mass

Range
 Material
 Accuracy : +/- % F.S.
 Linearity
 Resolution (1)
 Over Range
 Diaphragm Displacement
 Diameter
 Weight
 Temperature range
 Excitation Method

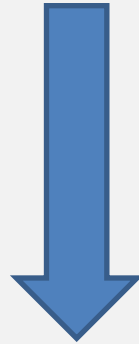
Range
 Accuracy : +/- % F.S.
 Resolution (with read out)
 Thermal drift (in lab condition)
 Thermistance
 Housing
 Diameter
 Length
 Material
 Filter

Type of sensor
 Measuring Range
 Overload
 Sensitivity
 Accuracy : +/- % F.S. (with explanatory note)
 Thermic Zero Shift
 Thermic Sensitivity Shift
 Electric Supply
 Output signal
 Electric insulation
 Temperature operating Range
 Material
 Diameter
 Length
 Weight
 Filter

Type of sensor
 Range
 Over range
 Resolution
 Accuracy : +/- % F.S.
 Operating Temperature
 Diaphragm displacement
 Thermal zero drift
 Materials
 Filter

Which one?

Catalogues, Product Data Sheets and Manuals



Present the production

Describe the Instruments

Explain how to use instruments

Enable products selection

The Situation

- ✓ **Catalogues** are commercial documents. They express the commercial policy of the Manufacturers;
- ✓ **Operation Manuals** are generally of good quality. Two extremes:
 - simple, basic, step-by-step procedures, essential. Instrument as a black box;
 - textbook, theory and applications, formulas. Not suitable for practical field activities.

- ✓ **Data Sheets (Product Data Sheets)** are the interface between Manufacturers and Users.
 - content is not always clear and easy to understand;
 - specifications are not referred to standards;
 - terminology is not unique;
 - technical and commercial aspects are mixed;
 - not easy to compare specifications.

Are they a useful tool to select instruments ?

Key points:

- ✓ **Catalogues:** are commercial documents; nothing to say.
- ✓ **Manuals:**
 - balance the content (theory and practice);
 - “fieldproof” solutions;
 - new technologies (Palm, Smartphone, MP3, I-Pod, I-Pad, etc..)

SPECIFICATIONS:

Define a “*minimum common content*”:

✓ **Metrology**

✓ **Electrical / Mechanical**

✓ **Environmental**

✓ **General / Application**

✓ Data Sheets:

- Specifications
- Terminology
- Applications
- Plus (commercial info)

SPECIFICATIONS:

Define a “*minimum common content*”:

1 - Metrology:

Measurement Principle

Range

Over Range

Accuracy Class

Dead Band

Stability

Repeatability

Resolution

Hysteresis

SENSOR OR INSTRUMENT? LAB OR FIELD?

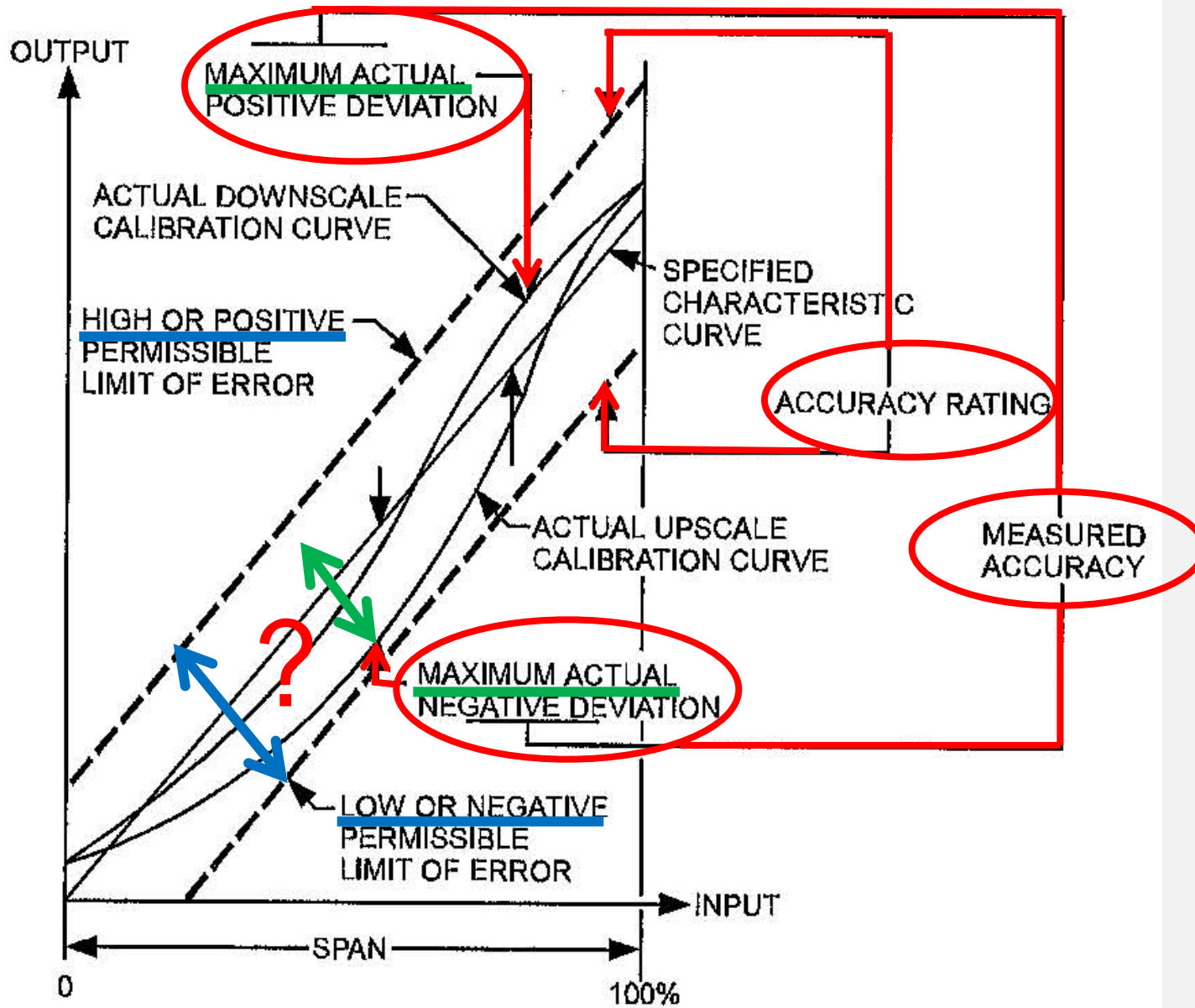


Figure 1 — Accuracy

(Ref.: ISA-S-51.1)

SPECIFICATIONS:

2 - Electrical / Mechanical:

Power Supply

Output

Scale of Displaying

Mounting / Connecting Elements

Overvoltage protection

Grounding Connection

Warm-up time

Wiring

SPECIFICATIONS:

3 - Environmental:

Temperature Range

Temperature Drift

Waterproofing

Chemical Aggression

Hazards (ATEX)

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SPECIFICATIONS:

4 - General:

Suggested Field of application

Special features

Experiences

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Classification

(based on Long Term Stability and Serviceability)

Class 1: stable and low prob of failure

Class 2: stable but not low prob of failure

Class 3: no long term stability but low prob of failure

Class 4: no long term stability no low prob of failure

TERMINOLOGY:

Use recognized international Standards

- V.I.M. (International Vocabulary of Metrology)

- ANSI/ISA-S51.1 (Process Instrumentation Terminology)

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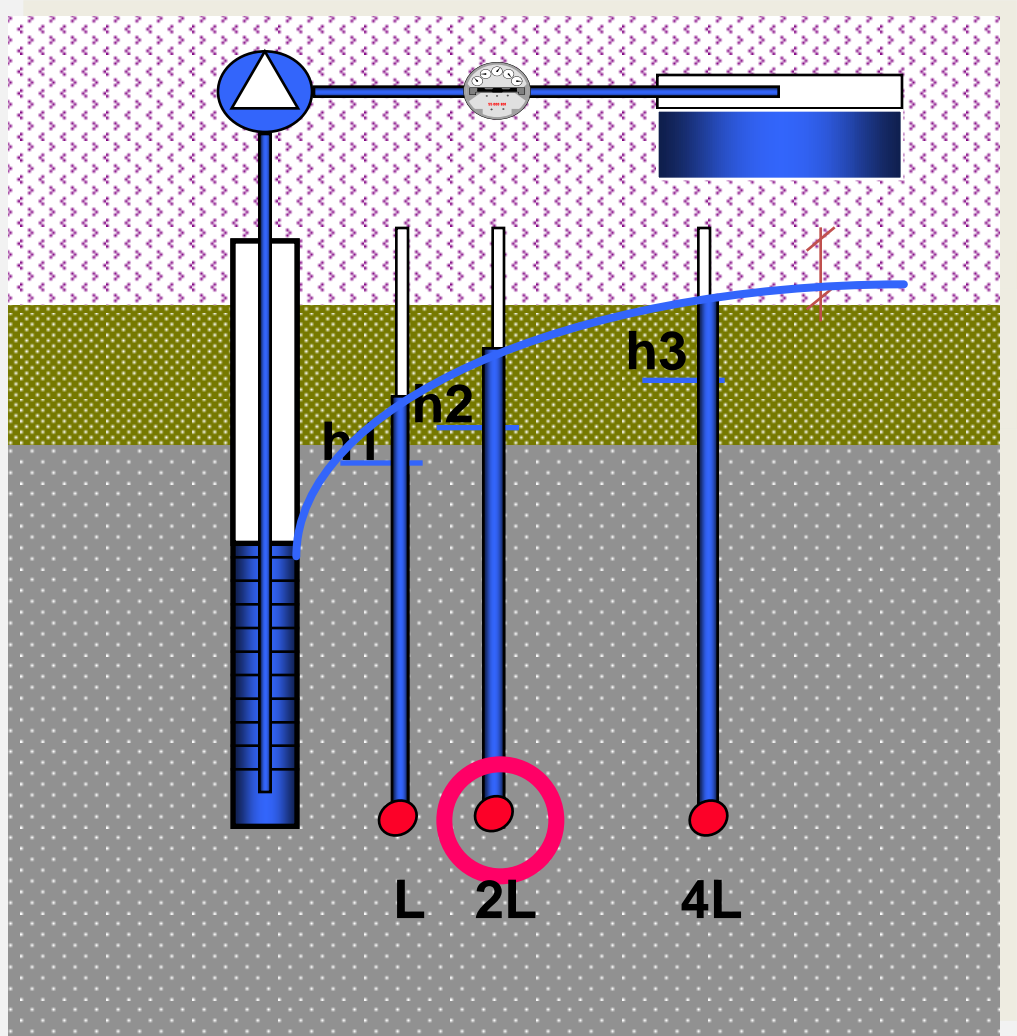
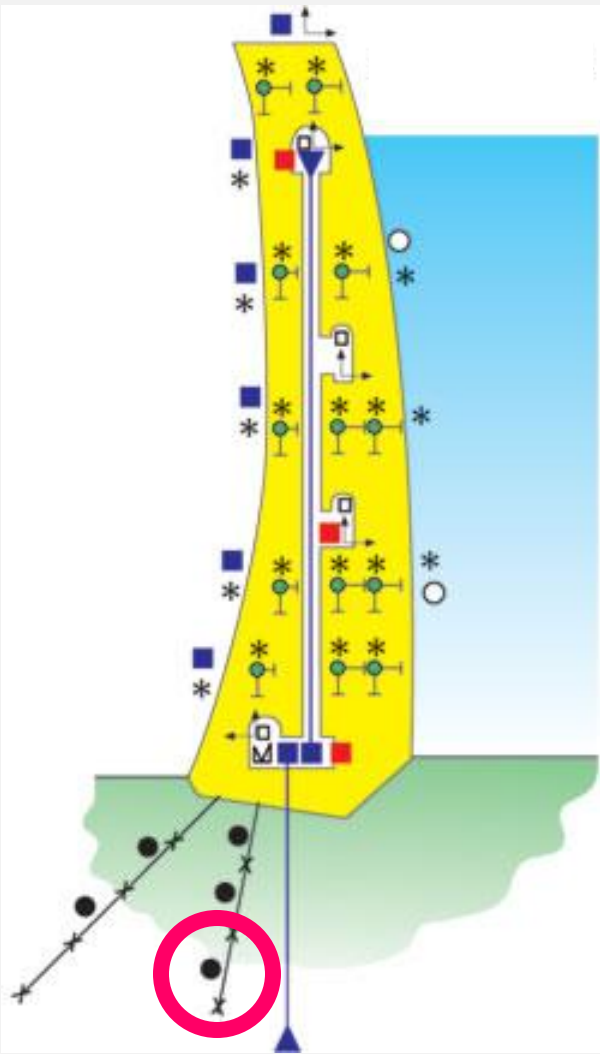
**PROBLEM OF DIFFERENT LANGUAGES AND CULTURES
AND LOCAL STANDARDS / GUIDELINES / CODES**

APPLICATIONS:

Suggestions based on Manufacturers' experience and Case histories

PLUS (commercial info):

Anything the Manufacture wants to enhance regarding its product



A B C D E F G

Sensor Type	Type	Standard Range	Range	Range	Type of sensor	Type of sensor
Resolution	Range	Over Range	Material	Accuracy : +/- % F.S.	Measuring Range	Range
Accuracy : +/- % F.S.	Accuracy : +/- % F.S.	Resolution	Accuracy : +/- % F.S.	Resolution (with read out)	Overload	Over range
Maximum Pressure (x Rated Range)	Temperature Limit - Operational - Compensated	Accuracy : +/- % F.S.	Linearity	Thermal drift (in lab condition)	Sensitivity	Resolution
Temperature Coefficient	Coil Resistance	Linearity	Resolution (1)	Thermistance	Accuracy : +/- % F.S. (with explanatory note)	Accuracy : +/- % F.S.
Filter	Over Range Limit	Over Range	Over Range	Housing	Thermic Zero Shift	Operating Temperature
Materials	over range effect	Temperature Range	Diaphragm Displacement	Diameter	Thermic Sensitivity Shift	Diaphragm displacement
Size	Dead Band	Thermal Zero shift	Diameter	Length	Electric Supply	Thermal zero drift
Weight	Vibration Effect	Diaphragm Displacement	Weight	Material	Output signal	Materials
	Thermistore	Length and Diameter	Temperature range	Filter	Electric insulation	Filter
	Enclosure	Mass	Excitation Method		Temperature operating Range	
					Material	
					Diameter	
					Length	
					Weight	
					Filter	

Which one?

Grazie e Arrivederci