



PROJET CAREMAG

INSTRUMENTATION IDENTIFICATION & NUMBERING PROCEDURE

MTK045-ARTM-INS-0001-PRC



PROJET CAREMAG
Titre 2

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1. INTRODUCTION

1.1. PROJECT OVERVIEW

Caremag Project consists in building a grassroots environmentally friendly production unit for pure rare-earth oxides in France from two main sources:

- Permanent magnets to be recycled
- Rare earth concentrates from mines to fill the plant in the first few years and support the economic ramp-up of recycling.

1.2. PURPOSE OF THE DOCUMENT

This document intends to define the convention to be applied for identification and labelling to all instrumentation and control devices, standard loops, primary cables, junction boxes, terminal strips, individual cores, control panels and cabinets for the overall Project.

It applies to the following families of equipment:

- **Field instrumentation;**
- **Installation bulk / accessories / cables, etc.;**
- **Automatic control system equipment, logics;**
- **Fire & Gas detection and control system equipment;**
- **Security system equipment;**
- **Package Equipment.**

2. REFERENCES

2.1. REFERENCE DOCUMENTS

The reference documents listed below form an integral part of this procedure.

The related equipment of this procedure shall be compliant with the legislation and standards of the country of installation even if not specified or referenced in this document.

The reference documents listed in this section are the minimum requirements, which shall govern the design, manufacturing and supply of the facilities. These, however, do not relieve to use sound engineering judgment and best industry practice if any requirements are not specifically addressed.

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2.1.1. INTERNATIONAL CODES AND STANDARDS

Ref.	Classification Company	Document Title
Instrumentation Systems, and Automation Society (ISA)		
[1]	ISA S.5.1	Instrument Symbol and Identification
[2]	ISA S.5.3	Graphic Symbols for Distributed Control/Shared Display Instrumentation, Logic and Computer Systems

3. DEFINITIONS, ABBREVIATIONS AND ACRONYMS

3.1. DEFINITIONS

For the purposes of this specification, the following definitions shall apply:

CLIENT: **CAREMAG S.A.S.**

Owner/ Client is the Party, that awarded the Project to the ENGINEERING, and CLIENT will be the final recipient of the equipment.

ENGINEERING: **ARTELIA INDUSTRIE**

The Engineering is the Party that carries out all or part of the design, the engineering, the procurement and the construction management of the Project.

SUPPLIER: The party who manufactures and/or supplies equipment, technical documents/drawings, and services to perform the duties specified by ENGINEERING.

SUB-SUPPLIER: The party who carries out all or part of the design, procurement, manufacturing and testing of the System under the responsibility of the SUPPLIER.

EQUIPMENT/PACKAGE: Shall mean the package itself and its associated auxiliaries.

3.2. ACRONYMS AND ABBREVIATIONS

AC	Alternative Current
DC	Direct Current
DCS	Distributed Control System
ESD	Emergency ShutDown
F&G	Fire & Gas
FGS	Fire & Gas System
HMI	Human Machine Interface
HVAC	Heating, Ventilation and Air Conditioning
ICSS	Integrated Control and Safety System
P&ID	Piping & Instrument Diagram
PCS	Process Control System
SIS	Safety Instrumented System
UPS	Uninterruptible Power Supply

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4. GENERAL

All instrument cables, individual cores, junction boxes, terminal strips, panels and other instrument devices are identified according to this procedure. In general, all cables shall be identified according to the equipment that the cable serves. Junction box identification shall relate to the cable/signal that the box serves. Individual cable cores or wires shall be identified according to the equipment that is served and the drawing grid reference system described in dedicated section "Instrument Cables Identification" of this procedure.

The panel and boxes, field mounted instruments, terminals and cables shall be marked clearly in order to facilitate trouble shooting.

Instrumentation items labelling and tagging shall be carefully taken into consideration for the implementation of the following type of project documents:

- **Instrument index;**
- **Tagging system detail drawing;**
- **Fire & Gas detectors list;**
- **Cable list;**
- **Equipment lists (e.g. panels and cabinets);**
- **Architecture drawings;**
- **Equipment location drawings.**

5. INSTRUMENT TAGGING FORMAT - PHILOSOPHY

5.1. INSTRUMENT TAGGING FORMAT

In principle, an instrument is identified by its functions and not by its type or its operating principles. The instrument tagging shall be based on ISA S.5.1 norm [1].

An instrument tagging format shares the following tag number segment with its parented format:

- **Unit/System Code;**
- **Instrument Type;**
- **Sequential number;**
- **Suffix.**

Each instrument shall be tagged as per the following format:

1 st Field	2 nd Field	3 th Field	4 th Field
-----------------------	-----------------------	-----------------------	-----------------------

Unit/System Code	Separation	Function Instrument Identifier	Separation	Sequence Numbering	Suffix
------------------	------------	--------------------------------	------------	--------------------	--------

0	1	0	-	F	I	C				-	0	1	9	A	B
---	---	---	---	---	---	---	--	--	--	---	---	---	---	---	---

5.1.1. 1ST FIELD DESCRIPTION

This 1st Field is dedicated to Unit or System codes relevant to the facilities. It illustrates the system and sub- system codes for different units / functional systems of the facilities. Coding consists of three (3) numeric characters.

Unit/System Code	Description
010	FEED DRESSING
011	SWARF UNLOADING
020	PARTIAL OXIDATION
022	OXIDIZED POWDER MILLING
031	SELECTIVE DISSOLUTION

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Unit/System Code	Description
032	FE SLURRY FILTRATION
050	MIXED RE CARBONATES ATTACK
101	BATTERY 2PH SX0 (RE/BORON)
102	MRE NITRATE EVAPORATION SX0
103	NABORATE CRISTALLISATION & FILTRATION
110	SX0 TREATMENT
111	SX1 TREATMENT
112	LACEPRND NITRATES EVAPORATION SX1
113	HEAVY NITRATES EVAPORATION SX1
114	BATTERIES VENT FANS
121	BATTERY TBP SX2 (LACCE / PRND /ND)
122	LACE NITRATES EVAPORATIONS SX2
123	NB NITRATES EVAPORATION SX2
131	BATTERY TBP SX3 (IMPURITIES/MRE)
132	MRE NITRATES EVAPORATIONS SX3
133	EVAPORATION MUTUALIZED SYSTEM
141	BATTERY ALIQUAT SX4 (HOLU / SMDY)
143	SMDY NITRATES EVAPORATION SX4
144	SX4/SX5/SX6/SX7 BATTERIES VENT FANS
151	BATTERY PC88A SX5 (SM-DY / HIOLUY)
152	HRE NITRATES EVAPORATION SX5
153	HRE NITRATES NEUTRALISATION SX5
161	BATTERY PC88A SX6 (SEG TB/DY)
171	BATTERY PC88A SX7 (SEG / TB)
221	ND & DD NITRATES PRECIPITATION
222	DD OR ND SLURRY FILTRATION
223	ND-DB CALCINATION
224	ND-DD PACKAGING
231	IMPURITIES NITRATES PRECIPITATION
232	IMPURITIES NITRATES FILTRATION
241	HO-LUY NITRATES PRECIPITATION
242	HO-LUY SLURRY FILTRATION
243	HO-LUY CARBONATE DRYING

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Unit/System Code	Description
244	HO-LUY & SEG CARBONATES PACKAGING
251	SEG NITRATES PRECIPITATION
252	SEG SLURRY FILTRATION
253	SEG CARBONATES DRYING
254	SEG PACKAGING
261	DY NITRATES PRECIPITATION
262	DY SLURRY FILTRATION
263	DY CALCINATION
264	DY PACKAGING
271	TB NITRATES PRECIPITATION
272	TB SLURRY FILTRATION
273	TB CALCINATION
274	TB PACKAGING
281	NITRATES PACKAGING
301	DILUTED MIXED RE - BORON NITRATES STORAGE
302	CONCENTRATED MIXED RE NITRATES STORAGE
303	CONCENTRATED LA CE PR ND NITRATES STORAGE
305	CONCENTRATED MIXED RE NITRATES STORAGE
306	CONCENTRATED PR ND NITRATES STORAGE
307	CONCENTRATED ND NITRATES STORAGE
308	CONCENTRATED LA CE NITRATES STORAGE
309	CONCENTRATED IMPURITIES NITRATES STORAGE
331	IONIC CLAY NITRATES STORAGE
332	HO LUY NITRATES STORAGE
333	SM DY NITRATES STORAGE
341	HRE NITRATE TRUCK UNLOADING
342	DILUTED HRE NITRATES STORAGE
351	SEG/TB NITRATES STORAGE
352	DY NITRATES STORAGE
353	SEG NITRATES STORAGE

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Unit/System Code	Description
354	TB NITRATES STORAGE
411	DILUTED NH ₄ NO ₃ TREATMENT
412	NH ₄ NO ₃ EVAPORATION
701	SX0 SOLVENTS STORAGE
702	TBP 75% / KEROSENE PREPARATION & STORAGES
703	NH ₄ CO ₃ PREPARATION AND STORAGE
704	HNO ₃ STORAGES AND PREPARATION
705	NAOH STORAGE
706	ALIQUATS SOLVLESSO STORAGES & PREPARATION
707	PC88A/KERPSENE STORAGE & PREPARATION
708	NH ₄ OH STORAGE & PREPARATION
801	GAS TREATMENT
802	COV GAS TREATMENT
803	NOX TREATMENT
850	UID - INDUSTRIAL EFFLUENT NETWORK
860	UID - OILY WATER NETWORK
870	UID - RAIN WATER NETWORK
900	UID - HEAT PUMP PACKAGE
910	STEAM PRODUCTION
916	RE CONDENSATES TREATMENT
917	WARM NH ₄ NO ₃ CONDENSATES STORAGE
920	INDUSTRIAL WATER FILTERED NETWORK
925	UID - POTABLE WATER NETWORK SUPPLY
930	SOFT WATER SYSTEM
940	COOLING WATER GENERATION
950	CHILLED WATER PRODUCTION AND NETWORK
960	COMPRESSED AIR NETWORK
961	COMPRESSED AIR - NITROGEN PRODUCTION
970	NITROGEN NETWORK
980	UID - FIRE FIGHTING NETWORKS

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5.1.2. 2ND FIELD DESCRIPTION

The 3rd Field description is dedicated to the function Instrument identifier consisting of six (6) alphabetic characters maxi, based on ISA S.5.1 norm [1]. The first character is based on the process condition, property to be measured or initiating variable.

Instrument Code	Measured or Initiating Variable
A	Analysis, Moisture, Humidity
B	Burner / Combustion
C	Conductivity, Corrosion
D	Density
E	Voltage / Emergency
F	Flow, Flow Rate
G	Gas, Gauging
H	Hand (Manually) Operated
I	Current (Electrical)
J	Power
K	Time, Time Schedule, Sequence Control
L	Level
M	Motorized
N	User's Choice
O	User's Choice
P	Pressure
Q	Quantity, Quality
R	Radiation, Radioactivity
S	Speed / Frequency, Sample Connection
T	Temperature
U	Multi-Variable, Trip Function
V	Vibration, Viscosity, Mechanical Analysis, Key-Phasor
W	Weight, Force
X	Unclassified
Y	Event, State or Presence
Z	Position, Running, Dimension

The other characters describe the function identifier or modification based on particular instrument function base on the ISA S 5.3 norm [2]. Refer to Appendix A for instrumentation identification letters.

In addition to the 1st character, as “A” for example specified on P&IDs, other information shall be indicated on P&IDs, adjacent to the instrument symbol, typically as L, LL, H, HH. These functions shall also appear within the instrument database, defined by the function instrument identifier.

5.1.3. 3RD FIELD DESCRIPTION

The serial number shall consist of 3 (three) characters (001 – 999).

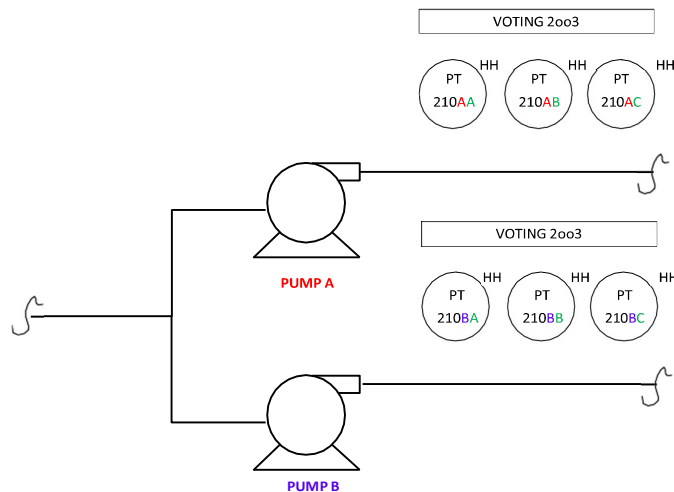
The sequential number shall be assigned in sequence applying the below rule:

Sequential Number	Designation
From 001 to 499	Dedicated to ENGINEERING instrument loop number
From 500 to 999	Dedicated to Package instrument loop number

5.1.4. 4TH FIELD DESCRIPTION

The function instrument tagging suffix consists of one (1) to two (2) alphabetic characters based on particular instrument function. The first character of tag number suffix shall be used to identify and differentiate between multiple components in a loop or voting instruments or split range controls. The first letter of suffix uses A, B, C, etc. The second letter is used when first letter is not enough to differentiate these multiple components and it uses A, B, C, etc.

The following principle details how suffixes are implemented:



5.2. INTEGRATED CONTROL & SAFETY SYSTEM (ICSS) TAG NUMBERING SYSTEM

ICSS (Integrated Control & Safety Systems) comprises the PCS, ESD, FGS and associated applications such as data historians, asset management system, etc.

Within the ICSS, function blocks are the basic elements for building control algorithms, performing calculation etc. All loops consist of the appropriate quantity and type of the function blocks, e.g. for a simple control loop, a transmitter input block; a control block and an actuator output are all required. The ICSS requires that each of these function blocks has a unique tag number, which, preferably, also indicates its function.

The most concise and clear method of achieving this, is to use the tag number identifier, typically in the form PT, PIC and PIV etc., or the identifier letters, typically F, M, S, etc. as defined in Appendix A.

All function blocks are accessible via the ICSS engineering terminals.

By utilizing the tag numbering convention discussed above, the function blocks that provide the functionality available at the HMI have logical tags, which enables easy access to, and retrieval of, control function diagrams by operating/maintenance personnel. It is not, therefore, necessary to have knowledge of computational function block tagging, to access control function diagrams.

5.2.1. ICSS TAG NAME FORMAT

The typical format of the ICSS tag name as displayed at the HMI shall be as shown below and described in the following table:

A ICSS tag numbering shares the following tag number segment with its parented format:

- **Unit number:** Always Used;
- **Instrument type:** Always Used;
- **Sequence number:** Always Used;
- **Suffix:** Optional.

The Control System Tag Identification is as per the following format:

1 st Field	2 nd Field	3 rd Field	4 th Field
Unit/System Code	Function Instrument Identifier	Sequence Numbering	Suffix
2	2	2	F I C
			0 1 9 A B

5.2.2. TAG NAME FORMAT FOR COMPUTING FUNCTIONS:

In addition to the internal function blocks discussed there is often a need to configure software function blocks for the computational functions and calculations required in complex control schemes.

Note that the serial numbers of the computational components are not required to have any logical association with the serial number of the associated loop.

In any case the numbering scheme shall be unique and consistent across all process modules and function block types.

5.3. SAFETY CODING PRINCIPLES

Process safety instruments (transmitters) are identical in structure to all other tag numbers as the process instruments. To differentiate them from the process instruments, the letter “S” is added to the Function instrument identifier.

Examples:

- **200-FT-0199AB:** Process instrument;
- **200-FTS-0199AB:** Safety instrument.

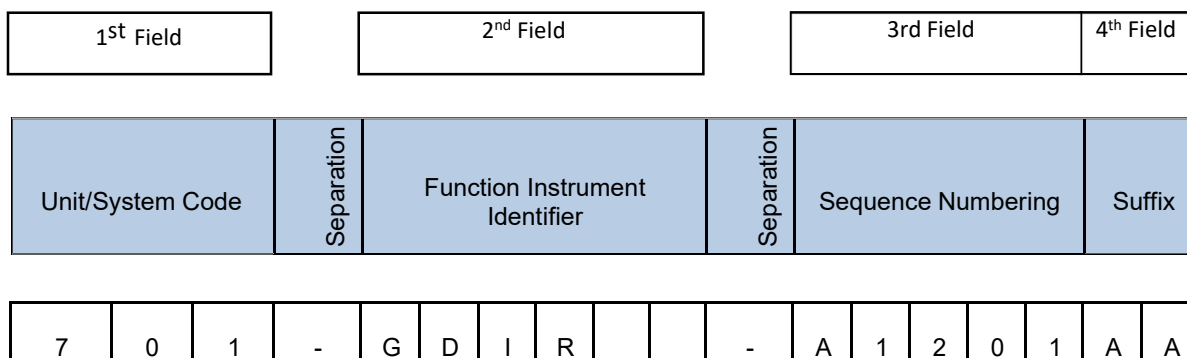
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5.4. FIRE & GAS CODING PRINCIPLES

The Fire & Gas (F&G) instruments coding are depending to the Fire Zone and Fire Area where the instruments are located.

The safety's P&IDs and the F&G layouts are defined as per following principle:



5.4.1. 1ST FIELD DESCRIPTION

Refer to § 5.1.1.

5.4.2. 2ND FIELD DESCRIPTION

The function code identifier shall use six (6) alphabetic characters maxi, defining the type of the F&G detectors: The letter "G" shall be used for gas detection as initiating variable and using following codes:

Instrument Code	Description
GDC	Catalytic gas detector
GDCH	Catalytic gas detector Hydrogen
GDT	Toxic gas detector
GDTR	Toxic gas refrigerant detector
GDIR	Infrared point gas detector
GDBX	Gas beam detector transmitter
GDBR	Gas beam detector receiver
GDO	Fixed oxygen detector
GDU	Ultrasonic gas detector

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The letter “R” shall be used for fire detection as initiating variable and using following codes:

Instrument Code	Description
RADD	Addressable fire loop
RDEW	Early warning smoke detector (or high sensitive smoke detector)
RDH	Heat detector – thermostatic
RDIS	Ionisation smoke detector
RDOS	Optical smoke detector
RDHR	Heat rate of rise detector
RDIR	Flame detector (Infra-Red)
RDUV	Flame detector (Ultra Violet)
RFPS	Fusible plug sensor
RHDX	Temperature rise detector
RHSSD	High Sensitive Smoke Detector
RHS	F&G push button
RFM	Foam Monitor

For other instrument types:

Instrument Code	Description
RFD	Fire Damper
RDV	Deluge Valve
MAC	Manual Alarm Call Point
TZT	Cold spill detector
UA	General alarm
UK	Audible alarm horn
UZA	Beacon alarm
UY	Yellow beacon flash light
UR	Red beacon

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5.4.3. 3RD FIELD DESCRIPTION

5.4.3.1. FIRE ZONE NUMBER

This one (1) alphabetic character shall be used to assign the plant Fire Zone number. The Fire Zone Numbers will be defined during APD (Basic) Phase.

5.4.3.2. SEQUENCE NUMBERING

The serial number shall consist of 2 (two) characters (01 – 99).

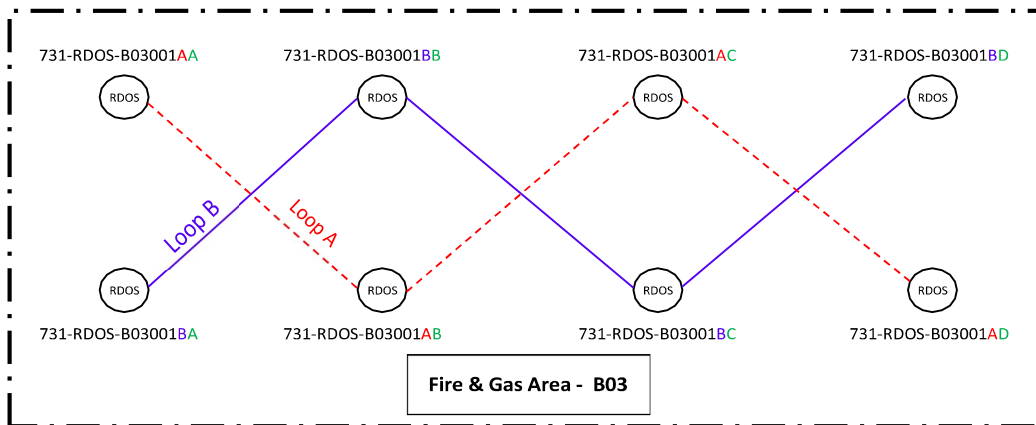
The sequential number shall be assigned in sequence applying the below rule:

Sequential Number	Designation
From 01 to 49	Dedicated to site instrument tag number
From 50 to 99	Dedicated to package instrument tag number

5.4.4. 4TH FIELD DESCRIPTION

The tag number suffix consists of (2) two digits that shall be used to identify and differentiate, between multiple components in a loop; as described here above § 0.

Following principle is used for F&G loops (e.g. smoke detectors into building):

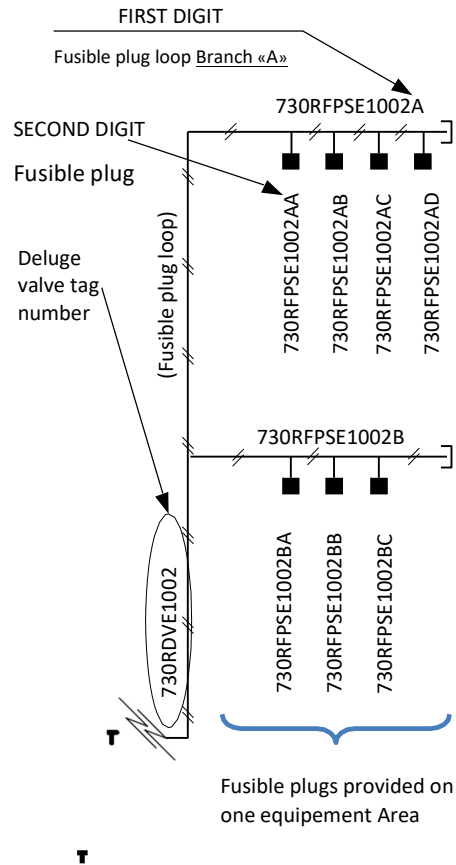


In addition, the suffixes "E" or "I" may be used for gas detectors where the sensor is installed remotely from the local indicator. Consequently, suffix "I" is allocated to the local indicator and suffix "E" to the sensor element.

5.5. FUSIBLE PLUG TAGGING PRINCIPLE

The following principle shall be used for the fusible plug loops:

EXAMPLE TAGGING FUSIBLE PLUG



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5.6. VALVES CODING PRINCIPLES

The following coding shall be used for the valves:

5.6.1. MEASURED VARIABLE

Code	Measured Variable
X	Process Valve (XV)
(*)	Control Valve

Note: (*) means control loop either for F (flow), L (level), P (pressure), and T (temperature).

5.6.2. FUNCTION IDENTIFIER

Code	Function Identifier
PROCESS VALVE (XV)	
XV	ON / OFF VALVE
XHS	XV REMOTE OPEN/CLOSE SELECTOR
XY	XV SOLENOID VALVE
XZAD	XV DISCREPANCY
XZSC	XV LIMIT SWITCH CLOSE
XZSO	XV LIMIT SWITCH OPEN
XZLC	XV CLOSE STATUS
XZLO	XV OPEN STATUS
CONTROL VALVE WITH SOLENOID VALVE	
(*)Y	Solenoid valve/Positioner(**)
(*)ZSO	Limit switch Open
(*)ZSC	Limit switch Close

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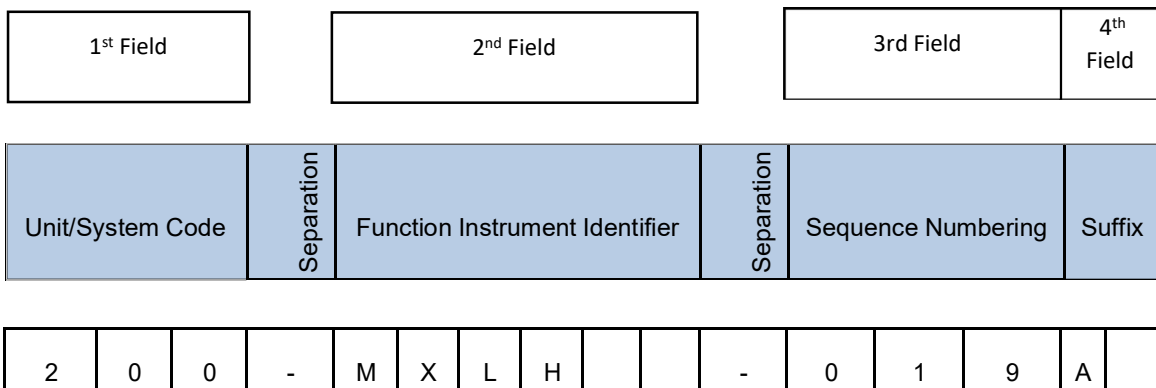
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Code	Function Identifier
(*)ZT	Positioner transmitter

Notes: (*) means control loop either for F (flow), L (level), P (pressure), and T (temperature).(**) the positioner is differentiated by suffix.

5.7. ELECTRICAL DRIVEN EQUIPMENT TAGGING PRINCIPLES

The coding systems, used for the exchanged data with the Motor Control Centre and other electrical signals, are defined as per following principle:



5.7.1. 1ST FIELD DESCRIPTION

Refer to § 5.1.1

5.7.2. 2ND FIELD DESCRIPTION

Each motors item shall be defined by the following principle for the tag number identifier:

Code	Function Identifier
MZA	Motor discrepancy indication
MYF	Motor fault/tripped indication

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Code	Function Identifier
MEI	Motor voltage indication
MWI	Motor power indication
MII	Motor current indication
MSI	Motor speed indication
MYSB	Motor duty/standby indication
MSC	Motor speed set point
MHKAM	Motor in auto/manual position
MXSL	Motor ESD trip command
MYR	Motor in local/remote position indication
MY	Available status
MXP	Motor permissive to start
MYHL	Motor running status
MHKH	Motor order to start
MHKL	Motor order to stop

5.7.3. 3RD FIELD DESCRIPTION

The serial number shall consist of 3 (three) characters (001 – 999).

The sequential number shall be assigned in sequence applying the below rule:

Sequential Number	Designation
From 001 to 499	Dedicated to ENGINEERING instrument tag number
From 500 to 999	Dedicated to Package instrument tag number

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5.7.4. 4TH FIELD DESCRIPTION

The tag number suffix consists of (2) two digits that shall be used to identify and differentiate, between multiple components in a loop, as described here above § 0.

6. INSTRUMENT ACCESSORIES CODING PRINCIPLE

6.1. JUNCTION BOXES TAGGING PRINCIPLES

The various types of junction boxes shall be tagged as follows:

1 st Field	2 nd Field	3 rd Field	4 th Field	5 th Field
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Unit/System Code	Separation	Equipment Identifier	Separation	Intrinsically signal Identifier	Separation	Sequence Numbering	Suffix
------------------	------------	----------------------	------------	---------------------------------	------------	--------------------	--------

2	0	0	-	J	B	E	-	I	-	0	1	9	A
---	---	---	---	---	---	---	---	---	---	---	---	---	---

6.1.1. 1ST FIELD DESCRIPTION

Refer to § 5.1.1

6.1.2. 2ND FIELD DESCRIPTION

The Equipment identifier shall differentiate the type of the junction boxes:

Code	Equipment Identifier
JBE	Electronic junction box (e.g. PCS signals)
JBF	Fire & Gas junction box

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Code	Equipment Identifier
JBP	Power supply junction box
JBC	Telecommunication junction box
JBS	Safety junction box

6.1.3. 3RD FIELD DESCRIPTION

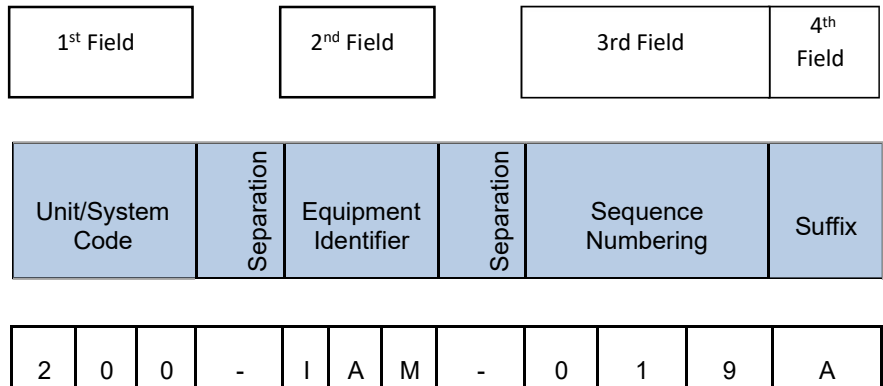
If Intrinsically safe signal is used on the Project, dedicated junction box shall be installed with “I” identifier.

6.1.4. 4TH AND 5TH FIELD DESCRIPTION

Refer to § 0 and § 0.

6.2. INSTRUMENT AIR MANIFOLDS

6.2.1. INSTRUMENT AIR MANIFOLD TAGGING PRINCIPLE



6.2.2. 1ST FIELD DESCRIPTION

Refer to §5.1.1.

6.2.3. 2ND FIELD DESCRIPTION

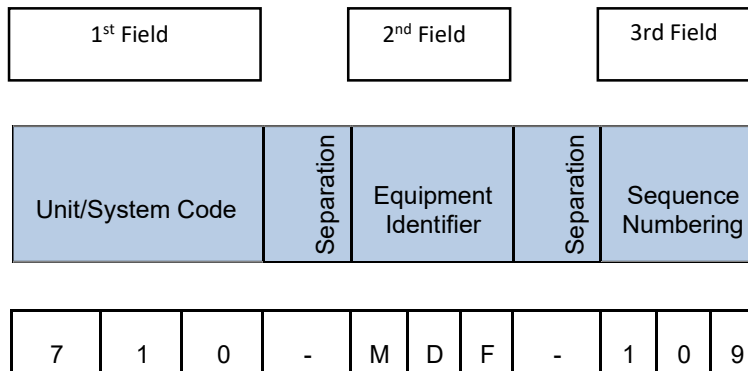
All instrument air manifolds shall be identified by the tag IAM.

6.2.4. 3RD FIELD DESCRIPTION

Refer to § 0 and § 0.

6.3. INSTRUMENT CONTROL EQUIPMENT CODING

Equipment located in various technical rooms shall follow the following rule:



6.3.1. 1ST FIELD DESCRIPTION

Refer to § 5.1.1

6.3.2. 2ND FIELD DESCRIPTION

The Equipment identifier shall differentiate the type of instrument equipment as defined in Appendix B.

6.3.3. 3RD FIELD DESCRIPTION

The serial number shall consist of 3 (three) characters (001 – 999).

The sequential number shall be assigned in sequence applying the below rule:

Sequential Number	Designation
From 001 to 499	Dedicated to ENGINEERING instrument Loop/Junction box number
From 500 to 999	Dedicated to Package instrument Loop/Junction box number

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7. INSTRUMENT CABLES IDENTIFICATION

7.1. DEVICE CABLE IDENTIFICATION

The device cable identification shall follow the instrument tagging format, without spaces (e.g. 123FT0199A). Cables shall be identified at both ends.

7.2. MULTI CABLE IDENTIFICATION

7.2.1. MULTI CABLE IDENTIFICATION PRINCIPLE

The various types of multi cables shall be tagged as follows:

1 st Field		2 nd Field				3rd Field		4 th Field		5 th Field	
Unit/System Code		Equipment Identifier		Separation		Intrinsically signal Identifier		Sequence Numbering		Suffix	
2	0	0	M	C	E	-	I	0	1	9	A

7.2.2. 1ST FIELD DESCRIPTION

Refer to § 5.1.1

7.2.3. 2ND FIELD DESCRIPTION

The Equipment identifier shall differentiate the type of the multi cables:

Code	Equipment Identifier
MCE	Electronic multi cable signals (e.g. PCS signals)
MCF	Fire & Gas multi cable signals
MCP	Power supply multi cable signals
MCC	Telecommunication multi cable signals
MCS	Safety multi cable signals
DHW	Data highway cable

Note: For single pair cable, the letter “M” shall be removed.

7.2.4. 3RD FIELD DESCRIPTION

If Intrinsically safe signal is used on the Project, dedicated junction box shall be installed with “I” identifier.

7.2.5. 4TH AND 5TH FIELD DESCRIPTION

Refer to § 0 and § 0.

7.3. IDENTIFICATION OF TERMINAL STRIPS

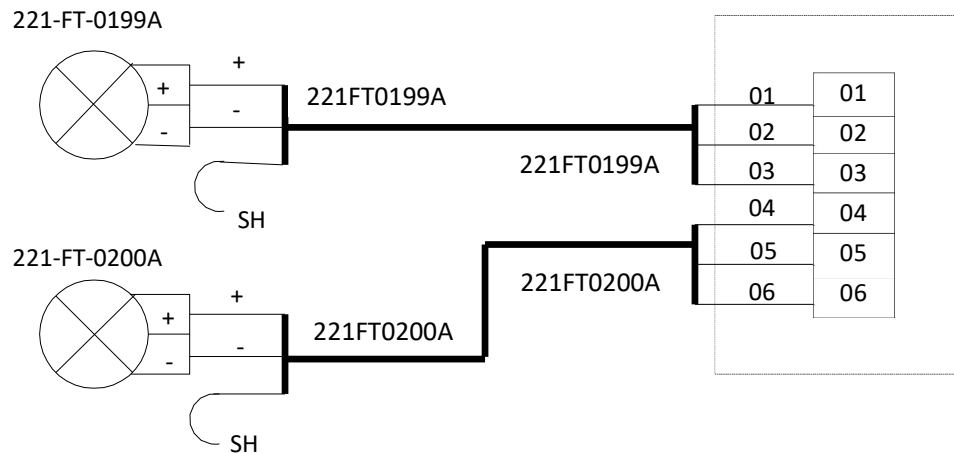
Terminal strips shall be related to the equipment (junction box or marshalling) where they are installed.

7.3.1. FIELD JUNCTION BOX TERMINAL STRIP IDENTIFICATION

In field junction box, the terminal strips identification shall be tagged as “JBx⁽¹⁾ - (sequential number)”. Refer to below diagram for example:

Note (1): Letter shall reflect the last letter of equipment identifier described in § 7.2.3.

Instrument	Ident. Wire	Cable Tag	Cable Tag	Ident. Wire	Junction Box
					221-JBE-0129A



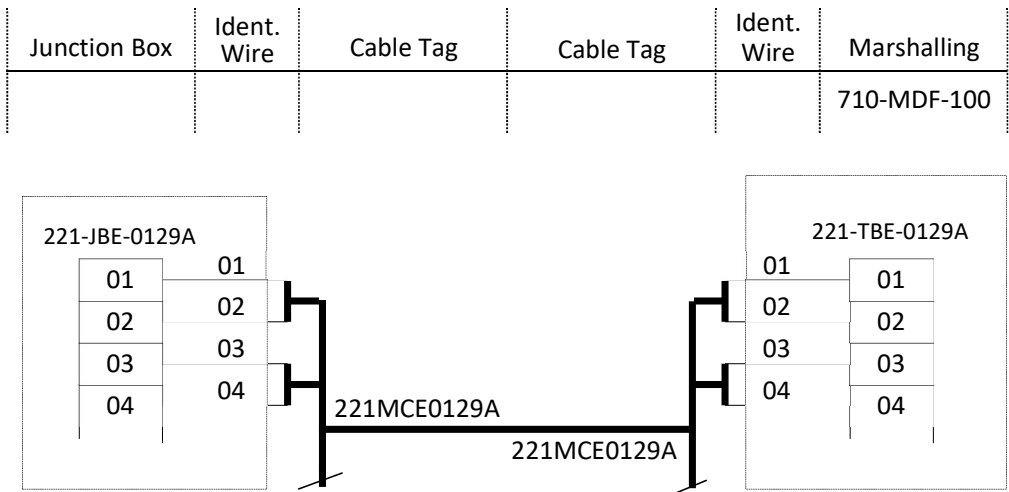
The tag 221FT0199A belongs to device cable associated to the transmitter.

The tag 221-JBE-0129A belongs to the terminal strip number inside the relevant junction box.

7.3.2. 7.3.2. MARSHALLING TERMINAL STRIP IDENTIFICATION

In the marshalling panel or cabinet, the terminal strip which is connected to field junction box shall be tagged as the junction box number, but terminal strips identification shall be tagged as “TBx⁽¹⁾-(sequential number)”. Refer to below diagram for example.

Note (1): Letter shall reflect the last letter of equipment identifier described in § 7.2.3.

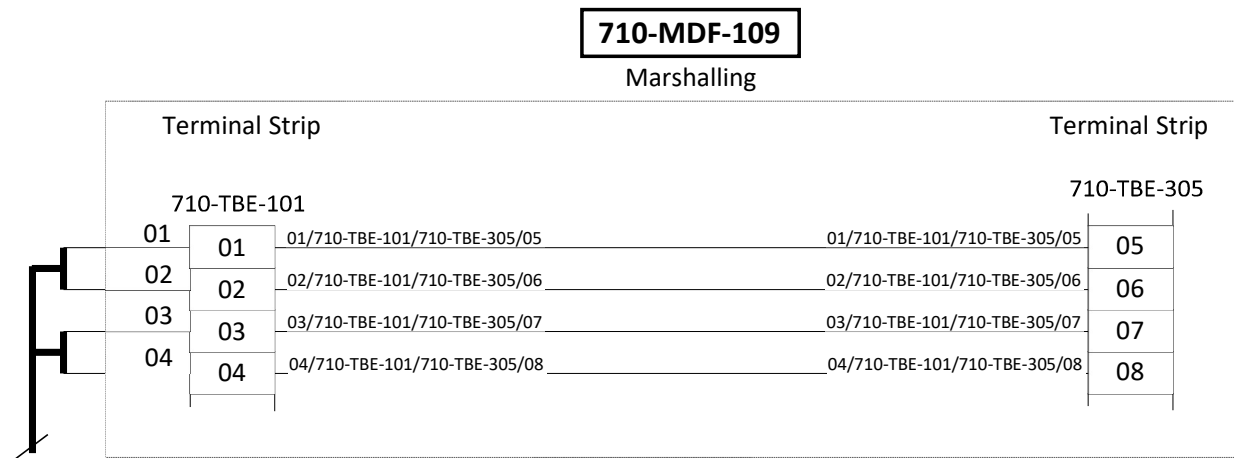


The tag 221MCE0129A belongs to the multi pair cables from the junction box to the marshalling panel.

The tag 221-TBE-0199A belongs to the terminal strip of the junction box and also in the marshalling paneln° 710-MDF-100.

7.3.3. INDIVIDUAL CORES, WIRES AND TERMINATION IDENTIFICATION

Instrument individual cores or individual wires shall be tagged as connected terminal strip/terminal strip number/terminal strip number/connected terminal strip. Refer to below diagram for example:



Each end of each wire within the board, limits shall be identified by an individual sleeve type marker with wire numbers matching those on wiring diagrams.

8. EQUIPMENT LABELLING

8.1. INSTRUMENT

Each instrument shall be provided with permanent, moisture-proof stainless steel nameplate (instruction plate) indicating the instrument tag and the instrument service. All nameplates shall be engraved with the text in French for the service labels.

8.2. LOCAL CONTROL PANELS, CABINETS AND CONSOLES

Panels and cabinets shall be fitted with a traffolyte type engraved nameplate affixed with stainless steel screws at front door of cabinets and at top of panels and consoles.

Nameplates shall be in French and shall show as a minimum:

- **The identification tag of the equipment;**
- **The service.**

Front mounted instruments, and tagged items within cabinets, panels and consoles (including terminal strips) shall also be fitted with such nameplates. Nameplates for internal equipment shall be affixed in such a way for the nameplate to stay in place even when the identified equipment is temporarily removed for maintenance.

Engraving and background colours shall follow the hereafter principle:

Cabinet	Background	Engravery
Standard	White	Black
Intrinsically Safe System	Blue	Black
Safety Instrumented System	Red	White
Fire & Gas System	Red	White

For more details, refer to Instrumentation and Control Systems Philosophy [3].

9. APPENDICES

The following appendices are integral part of this document:

- [Appendix A – Instrument Identification Letter](#)
- [Appendix B – Instrument accessories Coding](#)

• **APPENDIX A – INSTRUMENT IDENTIFICATION LETTER**

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IDENTIFICATION TABLE AND COMBINATION OF LETTERS

VARIABLE	PRIMARY ELEMENT	INDICATION	LOCAL INDICATOR	CONTROLLER	SAFETY TRANSMITTER Note (1)	TRANSMITTER	CONTROL VALVE	SOLENOID VALVE	SWITCH		SAFETY SWITCH [ESD / SIS]		ALARM		SHUTDOWN [ESD / SIS]	
									HIGH	LOW	HIGH Note (1)	LOW Note (1)	HIGH	LOW	HIGH Note (1)	LOW Note (1)
FLOW	FE	FI-FQI	FG	FIC	FZT	FT	FCV	FY	FSH FSHH	FSL FSL	FZSHH	FZSLL	FAH FAHH	FAL FALL	FZAHH	FZALL
LEVEL	/	LI	LG	LIC	LZT	LT	LCV	LY	LSH LSHH	LSL LSLL	LZSHH	LZSLL	LAH LAHH	LAL LALL	LZAHH	LZALL
PRESSURE		PI	PG	PIC	PZT	PT	PCV	PY	PSH PSHH	PSL PSLL	PZSHH	PZSLL	PAH PAHH	PAL PALL	PZAHH	PZALL
PRESSURE DIFFERENTIAL		PDI	PDG	PDIC	PDZT	PDT	PDCV	PDY	PDSH PDSHH	PDSL PDSLL	PDZSHH	PDZSLL	PDAH PDAHH	PDAL PDALL	PDZAHH	PDZALL
PRESSURE SAFETY VALVE							PSV									
TEMPERATURE		TI	TG	TIC	TZT	TT	TCV	TY	TSH TSHH	TSL TSL	TZSHH	TZSLL	TAH TAHH	TAL TALL	TZAHH	TZALL
RESTRICTION ORIFICE	RO															
ANALYSIS	AE	AI		AIC	N/A	AT	ACV	AY	ASH ASHH	ASL ASLL	AZSHH	AZSLL	AAH AAHH	AAL AALL	AZAHH	AZALL
SPEED	SE	SI		SIC	SZT	ST			SSH SSHH	SSL SLL	SZSHH	SZSLL	SAH SAHH	SAL SALL	SZAHH	SZALL
INTERFACE LEVEL		ILI		ILIC	ILZT	ILT	ILV	ILY	ILSH ILSHH	ILSL ILSLL	ILZSHH	ILZSLL	ILAH ILAAH	ILAL ILALL	ILZAHH	ILZALL

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IDENTIFICATION TABLE AND COMBINATION OF LETTERS

VARIABLE	PRIMARY ELEMENT	INDICATION	LOCAL INDICATOR	CONTROLLER	SAFETY TRANSMITTER Note (1)	TRANSMITTER	CONTROL VALVE	SOLENOID VALVE	SWITCH		SAFETY SWITCH [ESD / SIS]		ALARM		SHUTDOWN [ESD / SIS]	
									HIGH	LOW	HIGH Note (1)	LOW Note (1)	HIGH	LOW	HIGH Note (1)	LOW Note (1)
VOLTAGE	EE	EI		EIC	EZT	ET										
CURRENT	IE	II		IIC	IZT	IT										
OTHER	XE	XI		XIC	XZT	XT	XV	XY								
MANUALY OPERATED				HIC			HV	HY								
MOTOR OPERATED VALVE							MOV									
POSITION					ZZT	ZT			ZSH	ZSL			ZAH	ZAL	ZAHH	ZALL
HAND SWITCH									HSH	HSL						
DELUGE VALVE					YDPZT		YDV	YDY	YZSH	YZSL	YZSHH	YZSLL	YZAH	YZAL	YZAHH	YZALL
ON/OFF ACTUATED VALVE							XV	XY								
ON/OFF SAFETY ACTUATED VALVE							XSV	XSX								

- **Note (1):** Here above letter “Z” may be replaced by “S”

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APPENDIX B – INSTRUMENT ACCESSORIES CODING

Code	Description
ACC	Auxiliary Cabinet
ADA	Analyser Data Acquisition System
AMS	Asset Management System
APC	Advance Process Control
CCS	Compressor Control System
CMS	Custody Metering System
DCC	Domain Control
ENC	Electrical Network Monitoring and Control System
EDP	Emergency De-Pressuring System
ESD	Emergency Shutdown system
EWS	Engineering Work Station
FGS	Fire & Gas System
HMI	Human Machine Interface
IRP	Interposing Relay Panel
LAN	Local Area network
LIM	Laboratory Information Management System
MDF	Main Distribution Frame
MMS	Machine Monitoring System
NCC	Network Cabinet
OWS	Operator Work Station
OTS	Operator Training Simulator
PCS	Process Control System
PIMS	Plant information Management System
PSD	Process Shutdown System
PRN	Printer

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Code	Description
SIS	Safety Instrumented System
RTD	Real-Time Database System
SVR	Server
STN	Station
SWW	Switches
TSS	Terminal Server
TGS	Tank Gauging System
UCP	Unit Control Panel