

MANUAL INSTRUCTIONS | OPERATION | MAINTENANCE

REMOTE INDICATOR IR303





SEP/24 - VERSION 4











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INTRODUCTION

The **IR303** (8-Variable Remote Indicator PROFIBUS-PA) works with any PROFIBUS-DP class 1 master and is ideal for applications with any PROFIBUS-PA device. The **IR303** easily integrates device without LCD display or beyond the reach of or hardly accessed by the user, thus facilitating on-field monitoring.

Through 8 input variables, via cyclic communication with any PROFIBUS-DP master, it allows up to 8 cyclic variables on the same device or up to 8 different devices to be monitored or switched on the LCD display. It eliminates, for example, the need for the user to go to the device to check its condition on the field or on the upper level of a tank, or even on a hazardous area.

The power supply and the communication on the same device turn the **IR303** an easy-to-use compact device, which needs less room in panels when compared to other solutions.

The **IR303** is built in the SYSTEM302 and can easily be integrated to other PROFIBUS-PAsupported systems.

Get the best results from the IR303 by carefully reading these instructions.

NOTE

In case of using Simatic PDM as the configuration and parameterization tool, Smar recommends that the user does not apply the option "Download to Device". This function can improperly configure the field device. Smar recommends that user make the use of the option "Download to PG / PC" and then selecting the Device Menu, use the menus of the transducer, function and display blocks acting specifically, according to each menu and method for reading and writing.

WARNING

This Manual is compatible with version 4.XX, where 4 denotes software version and XX software release. The indication 4.XX means that this manual is compatible with any release of software version 4.

Waiver of responsibility

The contents of this manual abides by the hardware and software used on the current equipment version. Eventually there may occur divergencies between this manual and the equipment. The information from this document are periodically reviewed and the necessary or identified corrections will be included in the following editions. Suggestions for their improvement are welcome.

Warning

For more objectivity and clarity, this manual does not contain all the detailed information on the product and, in addition, it does not cover every possible mounting, operation or maintenance cases.

Before installing and utilizing the equipment, check if the model of the acquired equipment complies with the technical requirements for the application. This checking is the user's responsibility.

If the user needs more information, or on the event of specific problems not specified or treated in this manual, the information should be sought from Smar. Furthermore, the user recognizes that the contents of this manual by no means modify past or present agreements, confirmation or judicial relationship, in whole or in part.

All of Smar's obligation result from the purchasing agreement signed between the parties, which includes the complete and sole valid warranty term. Contractual clauses related to the warranty are not limited nor extended by virtue of the technical information contained in this manual.

Only qualified personnel are allowed to participate in the activities of mounting, electrical connection, startup and maintenance of the equipment. Qualified personnel are understood to be the persons familiar with the mounting, electrical connection, startup and operation of the equipment or other similar apparatus that are technically fit for their work. Smar provides specific training to instruct and qualify such professionals. However, each country must comply with the local safety procedures, legal provisions and regulations for the mounting and operation of electrical installations, as well as with the laws and regulations on classified areas, such as intrinsic safety, explosion proof, increased safety and instrumented safety systems, among others.

The user is responsible for the incorrect or inadequate handling of equipments run with pneumatic or hydraulic pressure or, still, subject to corrosive, aggressive or combustible products, since their utilization may cause severe bodily harm and/or material damages.

The field equipment referred to in this manual, when acquired for classified or hazardous areas, has its certification void when having its parts replaced or interchanged without functional and approval tests by Smar or any of Smar authorized dealers, which are the competent companies for certifying that the equipment in its entirety meets the applicable standards and regulations. The same is true when converting the equipment of a communication protocol to another. In this case, it is necessary sending the equipment to Smar or any of its authorized dealer. Moreover, the certificates are different and the user is responsible for their correct use.

Always respect the instructions provided in the Manual. Smar is not responsible for any losses and/or damages resulting from the inadequate use of its equipments. It is the user's responsibility to know and apply the safety practices in his country.

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Installation Flowchart

ATTENTION

Get the best results from the IR303 by carefully reading the entire manual.



*More information in Section 1 of IR303, Operation, Maintenance and Instructions Manual.

INSTALLATION

General

The overall accuracy of a control measurement depends on several variables. Although the **IR303** has an outstanding performance, proper installation is essential to maximize its performance.

Among all factors, which may affect **IR303** accuracy, environmental conditions are the most difficult to control. There are, however, ways of reducing the effects of temperature, humidity and vibration.

Locating the **IR303** in areas protected from extreme environmental changes can minimize temperature fluctuation effects.

The **IR303** should be installed in such a way as to avoid, as much as possible, direct exposure to the sun or any source of irradiated heat.

The electronic circuit is protected by a humidity proof coating, but frequent exposure to humidity may affect the protection provided. It is also important to keep the covers tightened in place. Every time they are removed, the threads are exposed to corrosion, since painting cannot protect these parts. Code-approved sealing methods should be employed on conduit entering the transmitter. The unused outlet connection should be plugged accordingly.

The **IR303** has been designed to be both rugged and lightweight at the same time. This makes its mounting easier; mounting positions are shown in Figure 1.1.



Figure 1.1 - Dimensional Drawing and Mounting Positions

Electric Wiring

Reach the wiring block by removing the Electrical Connection Cover. This cover can be locked by the cover locking screw (Figure 1.2). To release the cover, rotate the locking screw clockwise.



Figure 1.2 - Cover Locking Screw

For convenience there are three ground terminals: one inside the cover and two externals, located close to the conduit entries. The wiring block has screws on which fork or ring-type terminals can be fastened. See figure 1.3.



Figure 1.3 - Terminal Block

The **IR303** uses the 31.25 kbit/s voltage mode option for the physical signaling. All other devices on the same bus must use the same signaling. All devices are connected in parallel along the same pair of wires.

Various types of Profibus devices may be connected on the same bus.

The **IR303** is powered via the bus. The limit for such devices is according to the DP/PA coupler limitation for one bus for non-intrinsically safe requirement.

In hazardous area, the number of devices may be limited by intrinsically safe restrictions, according

to the DP/PA coupler and barriers limitation.

The **IR303** is protected against reverse polarity, and can withstand ± 35 VDC without damage, but it will not operate when in reverse polarity.

The Figure 1.4 shows the correct installation of the conduit, to avoid penetration of water, or other substance, which may cause malfunctioning of the device.



Figure 1.4 - Conduit Installation Diagram

NOTE	

Please refer to the General Manual of Profibus for further details.

WARNING

In hazardous zones with intrinsically safe or non incendive requirements, the circuit entity parameters and applicable installation procedures must be observed.

Cable access to wiring connections is obtained by one of the two conduit outlets. Conduit threads should be sealed by means of code-approved sealing methods. The unused outlet connection should be plugged and sealed accordingly.

Should other certifications be necessary, refer to the certification or specific standard for installation limitations.

Bus Topology and Network Configuration

Bus topology (See Figure 1.5) and tree topology (See Figure 1.6) are supported. Both types have a trunk cable with two terminations. The devices are connected to the trunk via spurs. The spurs may be integrated in the device giving zero spur length. A spur may connect more than one device, depending on the length. Active couplers may be used to extend spur length.

Active repeaters may be used to extend the trunk length.

The total cable length, including spurs, between any two devices in the Profibus should not exceed 1900 m.



Figure 1.5 - Bus Topology



Figure 1.6 - Tree Topology

General System

According to the figure below, a general network topology can be seen where the **IR303** is integrated into a simple PROFIBUS-PA network.



Figure 1.7 - IR303 and a general PROFIBUS-PA System

OPERATION

The **IR303** allows easy integration between devices without LCD display and facilitates on-field monitoring. Through 8 input variables via cyclic communication with the PROFIBUS-DP master it allows up to 8 cyclic variables on the same device or up to 8 different devices to be monitored or switched on the LCD display.

Functional Description – Electronics

Refer to the block diagram (See Figure 2.1 – **IR303** Block Diagram). The function of each block is described below.

(CPU) Central Processing Unit, RAM and FLASH

The CPU is the intelligent portion of the PROFIBUS-PA **IR303**, being responsible for the management and operation of block execution, self-diagnostics and communication. The program is stored in Flash memory. For temporary storage of data there is a RAM. The data in the RAM is lost if the power is switched off. However, the device also has a nonvolatile EEPROM where data that must be retained are stored. Examples of such data are configuration and identification data.

Communication Controller

It monitors line activity, modulates and demodulates the signal from the network.

Power Supply

Takes power of the loop-line to power the IR303 circuitry.

Factory Reset

There are 2 contacts (reed switches) that allow factory initialization and local adjustment.

Local Adjustment

There are two switches that are magnetically activated. They can be activated by the magnetic tool without mechanical or electrical contact.



Figure 2.1 – IR303 Block Diagram

CONFIGURATION

The **IR303** can be configured via SYSTEM302 or any other tool compliant to the PROFIBUS standard using EDDL or FDT/DTM.

The **IR303** has 8 Analog Output function blocks, the master writes cyclically on these blocks SP parameters and these variables are enabled on the **IR303** LCD display.

The Function Blocks are not mentioned in this manual. For explanations and details, see the Function Blocs manual.

On LCD display the mnemonics must be configured up to 5 characters.

How the Profibus Master sends the values of up to 8 variables to the IR303 LCD display

The Profibus master reads up to 8 variable+status from the Profibus network and sends these values to the **IR303** LCD display via SP (value+status) parameters of Analog Output function blocks.

For further information and details, see the Function Blocks manual



Figure 3.1 - PROFIBUS-DP master sends the variables to IR303 LCD display via SP of 8 AO blocks.

When a default is executed on the **IR303**, the mnemonics of the 8 variables on the LCD display are configured on PV_01 a PV_08. These mnemonics can be configured via EDDL and FDT/DTM-based tools. The parameters shown on the display are the AO block setpoints, relative index 09 and sub index 2. By navigating on the local adjustment tree the user will notice that the **IR303** has the following default configuration:

CONF: LCD1, BLK: AO_1, PRMT: 9, ITEM:2 LCD2, BLK: AO_2, PRMT: 9, ITEM:2 LCD3, BLK: AO_3, PRMT: 9, ITEM:2 LCD4, BLK: AO_4, PRMT: 9, ITEM:2 LCD5, BLK: AO_5, PRMT: 9, ITEM:2 LCD6, BLK: AO_6, PRMT: 9, ITEM:2 LCD7, BLK: AO_7, PRMT: 9, ITEM:2 LCD8, BLK: AO_8, PRMT: 9, ITEM:2 TGGL:8

For details on local adjustment, see the Profibus general manual.

Local Adjustment

When monitoring, the IR303 has 8 SetPoints (SP) configured from the 8 AO blocks (Analog Output blocks). Since up to 8 variable+ status can be monitored, its local adjustment tree – however having the same functionality and configuration features as the Smar 303 line – presents the 8 configurable parameters, whose PV_01 a PV_08 are the values+status received cyclically on the Analog Output SPs through the PROFIBUS-DP master, as shown on the figure below. These mnemonics are default and can be altered by the user via EDDL and FDT/DTM tools.

The parameters displayed are the AO block SetPoints, relative index 9 and sub index 2. By navigating on the local adjustment tree, the user will notice that the **IR303** has the following default configuration:

CONF: LCD1, BLK: AO_1, PRMT: 9, ITEM:2 LCD2, BLK: AO_2, PRMT: 9, ITEM:2 LCD3, BLK: AO_3, PRMT: 9, ITEM:2 LCD4, BLK: AO_4, PRMT: 9, ITEM:2 LCD5, BLK: AO_5, PRMT: 9, ITEM:2 LCD6, BLK: AO_6, PRMT: 9, ITEM:2 LCD7, BLK: AO_7, PRMT: 9, ITEM:2 LCD8, BLK: AO_8, PRMT: 9, ITEM:2 TGGL:8

To get more details and information on local adjustment configuration, see the Profibus General Manual.





Examples of Applications

The applications for the **IR303** are well diversified, as through 8 input variables it allows monitoring and switching until 8 different cyclic variables or even up to 8 different devices on the LCD display via cyclic communication with any PROFIBUS-DP master. The user does not need to check the device condition personally on the field or at a tank upper level, or even in a hazardous area. See some examples:

IR303 application with the TT383 and another device available on the Profibus network

IR303 application with several devices connected to the PROFIBUS-PA and PROFIBUS-DP networks. For example, the IR383 can be configured to receive the temperature monitored by the TT303 or other information from multiple devices available on the Profibus network.



Figure 3.3 - IR303 application with the TT383 and other devices available on the Profibus network

IR303 application for devices without display

For example, the IDT303 is a device without LCD display. The **IR303** can be installed for inspection and facilitate the reading conditions of the process device.



Figure 3.4 – IR303 application for devices without display

IR303 application with devices installed in difficult-access sites

If the device is installed at a location difficult to access, the **IR303** can be used to check its operation conditions and eliminates the need for the technician to inspect the device on site. At a safe place, the **IR303** minimizes the effort of technical inspections on hazardous areas, as shown on figure B, and in addition avoids the user presence.



In some situations, the monitoring process by the user is hampered by the difficult access to the device. The **IR303** increases the user's visibility, making the monitored variables easy to access.



Configuring the IR303 cyclically

The PROFIBUS-DP and PROFIBUS-PA protocols have mechanisms against failures and communication errors between the network device and the master. For example, when initializing the device these mechanisms are used to check these possible errors. After powering up the (slave) field device data can be exchanged cyclically with the class 1 master, if the slave parameterization is correct. The information is obtained through the GSD files (descriptions supplied by the device manufacturers). Through the commands below, the master executes the entire initialization process with the PROFIBUS-PA device:

- Get_Cfg: loads the slave configuration on the master and checks the network configurations;
- Set_Prm: writes on the slave parameters and executes the network parameterization services;
- Set_Cfg: configures the slaves according to the inputs and outputs;
- Get_Cfg: another command, where the master checks the slave configuration.

All services are based on the information obtained from the slave GSD files. The IR303 GSD file shows details for the hardware and software revision, device bus timing and information on the cyclic data exchange.

To access the complete Smar GSD library, consult: http://www.smar.com.br

The **IR303** has 8 Analog Output (AO) function blocks. It also has the empty module for applications that configure only a few parameters on the LCD display, a total of 8. The following block cyclic order must be followed: AO_1, AO_2...AO_7, AO_8. This means that what the master writes on AO_1 will appear on the first display, on AO_2, on the second display and so on, until AO_8 on the eight display.

Supposing you want to monitor 4 parameters on the **IR303** display, configure them as: AO_1, AO_2, AO_3, AO_4, EMPTY_MODULE, EMPTY_MODULE, EMPTY_MODULE, in other words, for each display without function include an empty module on the cyclic configuration.

Most PROFIBUS configurators use two directories which should have the GSD and BITMAP files from all manufacturers. For Smar device, these files can be downloaded via Internet on (https://www.smar.com).

The next example shows the necessary steps to integrate the IR303 on a PA system. These steps are valid for all Smar 303 line devices:

- Copy the IR303 gsd file on the PROFIBUS configurator research directory, normally called GSD;
- Copy the **IR303** bitmap file on the PROFIBUS configurator research directory, normally called BMP;
- After choosing the master, define the communication rate. Don't forget that the couplers may have the following communication rates. 45.45 kbits/s (Siemens), 93.75 kbits/s (P+F) and 12Mbits/s (P+F, SK3). The IM157 link device may have up to 12Mbits/s;
- Add the IR303 and specify its bus address;
- Choose the cyclic configuration via parameterization with the GSD file, depending on the application, as seen before. For each AO block the **IR303** gets from de master the variable float variable value and an additional status byte that supplies the information on the quality of this value.

For each AO block, one of the cyclic options below can be chosen:

;Empty module Module = "EMPTY_MODULE" 0x00 EndModule

;Modules for Analog Output

Module = "eSP " \ 0x82, 0x84, 0x08, 0x05 EndModule Module = "SP " \ 0xA4 EndModule

• It enables the watchdog condition that moves the device to a fail-safe condition when detecting a loss of communication between the slave and the master device.



Status exhibited on the LCD display

The **IR303** has 8 Analog Output (AO) blocks that receive via SetPoint (SP) the 8 variable+status that will he LCD. The following status will be shown:

- UNC (uncertain) when the status is on the 0x40 to 0x7f range;
- BAD when the status is on the 0x00 to 0x3f range;
- When GOOD, higher or equal to 0x80, no message is exhibited.

MAINTENANCE PROCEDURES

General

IR303 is extensively tested and inspected before delivery to the end user. Nevertheless, during their design and development, consideration was given to the possibility of repairs being made by the end user, if necessary.

In general, it is recommended that end users do not try repair printed circuit boards. Spare circuit boards may be ordered from SMAR whenever necessary. Refer to the item "Returning Materials" at the end of this Manual.

TROUBLESHOOTING		
SYMPTOM	PROBABLE SOURCE OF PROBLEM	
NO QUIESCENT CURRENT	Power Supply: The voltage at the IR303 PROFIBUS-PA terminals must be between 9 and 32 Vdc.	
	Check the boards for defects by replacing them with spare ones.	
NO COMMUNICATION	Network Connections Network Connections Check the network connections: devices, power supply, and terminators. Network Impedance Check the network impedance (power supply impedance and terminators). Controller Configuration Check configuration of communication parameters of the controller. Network Configuration Check communication configuration of the network. Electronic Circuit Failure Check the boards for defects by replacing them with spare ones.	

Disassembly Procedure

NOTE
Make sure to disconnect the power supply before disassembling the IR303.

The Figure 4.2 - Exploded View an exploded view of the $\ensuremath{\text{IR303}}$ and will help to visualize the following.

WARNING

The boards have CMOS components, which may be damaged by electrostatic discharges. Observe correct procedures for handling CMOS components. It is also recommended to store the circuit boards in electrostatic-proof cases.

Reassemble Procedure

- Place the main board (3) into the housing, ensuring all interconnecting pins are connected;
- Place the LCD display into the housing, mounting it properly according to the desired viewing position;



Figure 4.1 - Four Possible Positions of the Display

- Tighten the fixing screws;
- Fit the cover (1 and 9) and lock it using the locking screw.

Firmware Update Procedure

For firmware update of the **IR303** device see FDI302-Plus manual, visit website Smar: <u>www.smar.com.br</u>.

Accessories

ACCESSORIES		
ORDERING CODE	DESCRIPTION	
PBI-PLUS	USB Interface for PROFIBUS PA	
SYSCON	System Configuration Tool	
PS302	Power Supply	
BT302	Terminator	
FDI302-Plus	Fieldbus/PROFIBUS-PA Communication Interface for Firmware Update	
DF47-12/DF47-17	Intrinsic Safety Barrier	

Exploded View



13	01	¾ NPT REDUCING BUSHING	400-0812
12	01	PG13,5 PLUG	400-0811
12	01	M20 PLUG EXD	400-0810
12	01	½ NPT PLUG EXD	400-1484
11	01	EXTERNAL GROUND SET	204-0124
10	02	COVER LOCKING SCREW	204-0120
09	01	COVER WITHOUT WINDOW (300 LINE)	400-1307-0XX
08	01	TERMINAL BLOCK FIXATION SCREW	204-0119
07	01	FILEDBUS / PROFIBUS TERMINAL BLOCK	400-0059
06	01	IDENTIFICATION PLATE SCREW	204-0116
05	02	LOCAL ADJUSTMENT PROTECTION COVER (Z AND S)	204-0114
04	01	ELECTRONIC HOUSING	400-1315-5XX
03	01	GLL1450 AND GLL1404: (DISPLAY+MOUNTING SET)	400-1360
02	02	COVER O-RINGS	204-0122
01	01	COVER WITH WINDOW (300 LINE)	400-1307-1X
ITEM	QUANT	DESCRIPTION	CODE

Figure 4.2 – IR303 Exploded View

Spare Parts

SPARE PART LIST		
DESCRIPTION	CODE	
MOUNTING BRACKET FOR 2" PIPE (NOTE 4)		
Carbon Steel (Carbon Steel Accessories)	214-0801	
316 SST (316 SST Accessories)	214-0802	
Carbon Steel (316 SST Accessories)	214-0803	
OTHERS		
Terminal Block Screw	214-0124	
Input Board Screw	214-0125	
Fixing Support Accessories – Carbon Steel	214-0807	
Fixing Support Accessories – 316 Stainless Steel	214-0808	
Display Revamp	400-1310	
Main Board Fixing Set	400-0560	
Digital Indicator GLL1438	400-1305	

NOTES

- 1 Item 3 It is recommended to keep one set in stock for every 25 pieces installed.
- 2 Item 4 Includes terminal block, screws (cover lock, grounding and terminal block) and non-certified identification plate.
- 3 Item 2 The o'rings are packaged with 12 units. It is recommended to keep one set in stock for every 50 pieces installed.
- 4 Including U-clamp, nuts, bolts and washers.
- 5 Item 12 The spare part 400-1484, Internal Hexagonal Plug 1/2" NPT SST316 BR-Ex-d, was standardized in SST316 material and will be used in all line of housings (aluminum, copper free aluminum or SST316). With or without CEPEL certificate.

Detailed Code for Ordering Spare Parts



400-1307	COVER					
	COD.	Туре	Гуре			
1	0	Witho	Vithout Window			
	1	With	Vindow			
ł		COD.	Material			
1		HO	Aluminum (IP/TYPE)			
		H1	316 SST (IP/TYPE)			
Ì			COD. Painting			
Ì		ł	P0 Gray Munsell N6.5			
			P2 Safety Blue Epoxy – Atmospheric Zone - Petrobras N1021			
i.			P8 Without Painting			
			P9 Blue Safety Epoxy			
	Ì					
	i	i				
400-1307	1	H0	P0			

Isolation Test on Equipment Housings

1. Power off the equipment in the field, remove its back cover and disconnect all field cables from the transmitter terminal block, isolating them safely.

2. It is not necessary to remove the main board and display.

3. Jumper (connect) the power terminals (positive and negative) with the cable coming from the Megohmmeter (megger).

4. Configure the megohmmeter for 500 Vdc scale and check the isolation between the housing and the cable that short-circuits all the terminals.



5. The value obtained must be greater than or equal to $2G\Omega$ and the voltage application time must be at least 1 second and at most 5 seconds.

6. If the value obtained by the megohimmeter is below $2G\Omega$, the possibility of moisture entering the electrical connection compartment must be analysed.

7. It is possible to loosen the two screws that secure the terminal block to the housing and carry out a superficial cleaning and dry the surface well. Afterwards, the isolation can be tested again.

8. If the isolation test still shows that the isolation has been compromised, the housing must be replaced and sent to Nova Smar S.A. for analysis and retrieval.

	IMPORTANT
a)	For equipment certified Exd and Exi (Explosion Proof and Intrinsically Safe) the standards advise not to carry out repairs in the field of the housing electronic components, only at Nova Smar S.A.
b)	In normal use, the housing components must not cause failures that affect its isolation. For this reason, it is important to verify whether there are traces of water entering the housing and, if so, an assessment of the electrical installations and the sealing rings of the covers must be carried out. Nova Smar S.A. has a team ready to support the assessment of facilities, if necessary.

TECHNICAL SPECIFICATIONS

General

Communication	Digital only. PROFIBUS-PA, 31.25 Kbits/s voltage mode, according to IEC 61158-2.					
Current consumption quiescent	12 mA from PROFIBUS-PA network.					
Turn-on Time	Approximately 10 seconds.					
Humidity Limits	0 to 100% RH.					
Indication	Optional 4 ¹ / ₂ digit LCD indicator.					
Temperature Limits	Operation: -40 to 85°C (-40 to 185 °F). Storage: -40 to 120°C (-40 to 250 °F). Display: -10 to 60°C (14 to 140°F) operation; -40 to 85°C (-40 to 185 °F) without damage.					
Vibration Effect	Meets SAMA PMC 31.1.					
Electro-Magnetic Interference Effect	Designed to comply with IEC 801.					
Hardware	Physical: according to IEC 61158-2 and conformity with the FISCO model.					
Electrical Connection	1/2-14 NPT, PG 13.5 or M20 x 1.5.					
Material of Construction	Injected low copper aluminum with polyester painting or 316 Stainless Steel housing, with Buna N O-rings on cover (NEMA 4X, IP67).					
Mounting	With an optional bracket that can be installed on a 2" pipe or fixed on a wall or panel.					
Weight	Without mounting bracket: 0.93 kg					

Ordering Code

MODEL									
IR303	PROFIB	US-PA RE	MOTE IN	DICATOR					
I	COD.	Local In	dicator						
I I		COD Mounting Bracket for 2" Pine Mounting							
I I	ļ	0 Without Bracket							
I I	ļ	1 Carbon Steel Bracket							
	ł	2 316 SST Bracket							
		7 Carbon Steel Bracket, accessories in 316 SST							
	COD. Electrical Connections								
	0 1/2" - 14 NPT (1)								adaptar (2)
	i	1 $1/2'' - 14$ NPT X 3/4 NPT (316 SST) – with adapter (2)							
	i	i i	3	1/2" - 14	NPT X	1/2 BSP (3	316 SST) - with	adapter (3)
	i	i i	Ă	M20 x 1.	5 (1)	., (,	
	i	i	В	PG 13.5	DÌN (3)				
	i		Z	Special -	- See no	tes			
			i	COD.	Housi	ng (ID/T			
	1		Ì	H0	Alumin	um (IP/Ty T (IP/Typ	pe)		
	1			H2	Alumin	um for sa	c) line atmo	sohere	
	1			H3	316 SS	ST for salir	ne atmos	sphere (PW/TYPEX) (4)
	1		Ì	H4	Alumin	um Coppe	er Free (IPW/TY	PEX) (4)
		I		I	COD.	Identific	ation Pl	ate	
	16 Without certification								
	COD. Painting								
	1			I I	ł	P0	Gray M	lunsell N	N 6,5 Polyester
	1			I I	ł	P2	Safety	Blue Ep	oxy – Atmospheric Zone - Petrobras N1021
	I I			I	ł	Р3 Р7	Beige	Enoxy	I
	I I			I	ł	P8	Withou	t Paintir	a
i i					į	P9	Safety	Blue Ep	OXY
i i					į	PE	Pastel	Green N	Junsell 5G 8/4 Smooth Semi-Gloss Epoxy
l	1				į	PZ	See no	otes	
	1				į		COD.	Manuf	acturing Standard
	1				į		SO	Smar	
I I	1				i		i		Tay Plate (5) With too
I I					i	i	i	.J1	Blank
I I	1		1		i		i	ZZ	See notes
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IR303	1	2	0	H1	16	P0	S0	JO	TYPICAL MODEL

* Leave it blank for no optional items

NOTES

(1) Certification Ex-d for FM / ATEX / IECEx / INMETRO.
(2) Certification Ex-d for INMETRO.
(3) Options not certified for use in explosive atmospheres.
(4) IPW/Type tested for 200 hours in accordance with NBR 8094 / ASTM B 117.
(5) Rectangular plate in 316 Stainless Steel.

sm	ar	S	RF – SEI	RVICE RE	EQUE	ST FO	DRM	1				
••••		PROFIBUS-PA Remote Indicator										
-			GENEF	RAL DATA					ĺ			
Model:	IR303											
Serial Number:												
TAG:												
Configuration:	PC ()		Software:		Vers	ion:						
		INS	STALLATION DAT	A AND ENVIRON	MENT							
Hazardous Area	^a ()Yes, pl	ease specify:										
	() No											
	More detail	s:										
Interference types present ir the area:	No interfere	ence()	Temperature()	Vibration ()	Other:							
Environment Temperature:	From	ºC up to _	°C.									
			OCCURRENC	E DESCRIPTION								
			SERVICE S	SUGGESTION								
Adjustment ()		Cleaning ()	Preve	ntive Maintenance ()		Update	/ Up-grade ()			
Other:												
			USER INF	ORMATION								
Company:			COLIN									
Contact:												
Title:												
Section:												
Phone:						Extension						
E mail:						Date:	1					
E-IIIdII	Further info	For warranty rmation about add	or non-warranty repa ress and contacts ca	ir, please contact you n be found on https://	ur representa /www.smar.c	ative. com.br/en/con	_/ tact-us.	_/				

Returning Materials

If necessary to return the **IR303** to SMAR, simply contact our office, informing the defective instrument serial number, and return it to our factory.

To speed up analysis and solution of the problem, the defective item should be returned with a description of the failure observed, with as much details as possible. Other information concerning the instrument operation, such as service and process conditions, is also helpful.

Instruments returned or to be revised outside the warranty term should be accompanied by a purchase order or a quote request.