



WESTCON

Aumentando a disponibilidade e confiabilidade das redes PROFIBUS em CCM's Inteligentes





PI Worldwide Support



PI worldwide:

27 Regional PI Associations (RPA)

PI Technical Support:

48 PI Competence Centers (PICC)
26 PI Training Centers (PITC)
11 PI Test Laboratories (PITL)



WESTCON

PROFIBUS International Competence Center



Certificate for a PI Competence Center

PI confirms that

WESTCON Instrumentação Industrial Ltda
Erik F. Maran
Rua Alvaro Rodrigues, 257
04582-000, São Paulo - SP
BRAZIL



Primeiro, vamos analisar o padrão de montagem de redes PROFIBUS utilizada nos CCM's.

Como a montagem afeta a confiabilidade do sinal de comunicação PROFIBUS nos CCM's?

Como aumentar a disponibilidade e monitorar a qualidade da comunicação PROFIBUS?

Primeiro, vamos analisar o padrão de montagem de redes PROFIBUS utilizada nos CCM's



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Redes PROFIBUS em CCM's

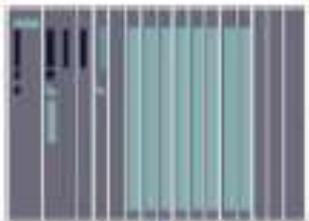




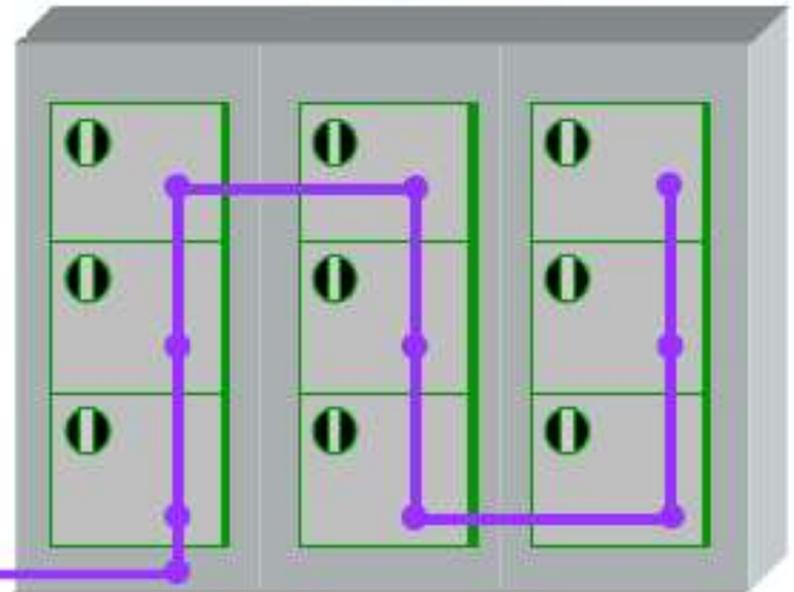
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Redes PROFIBUS em CCM's



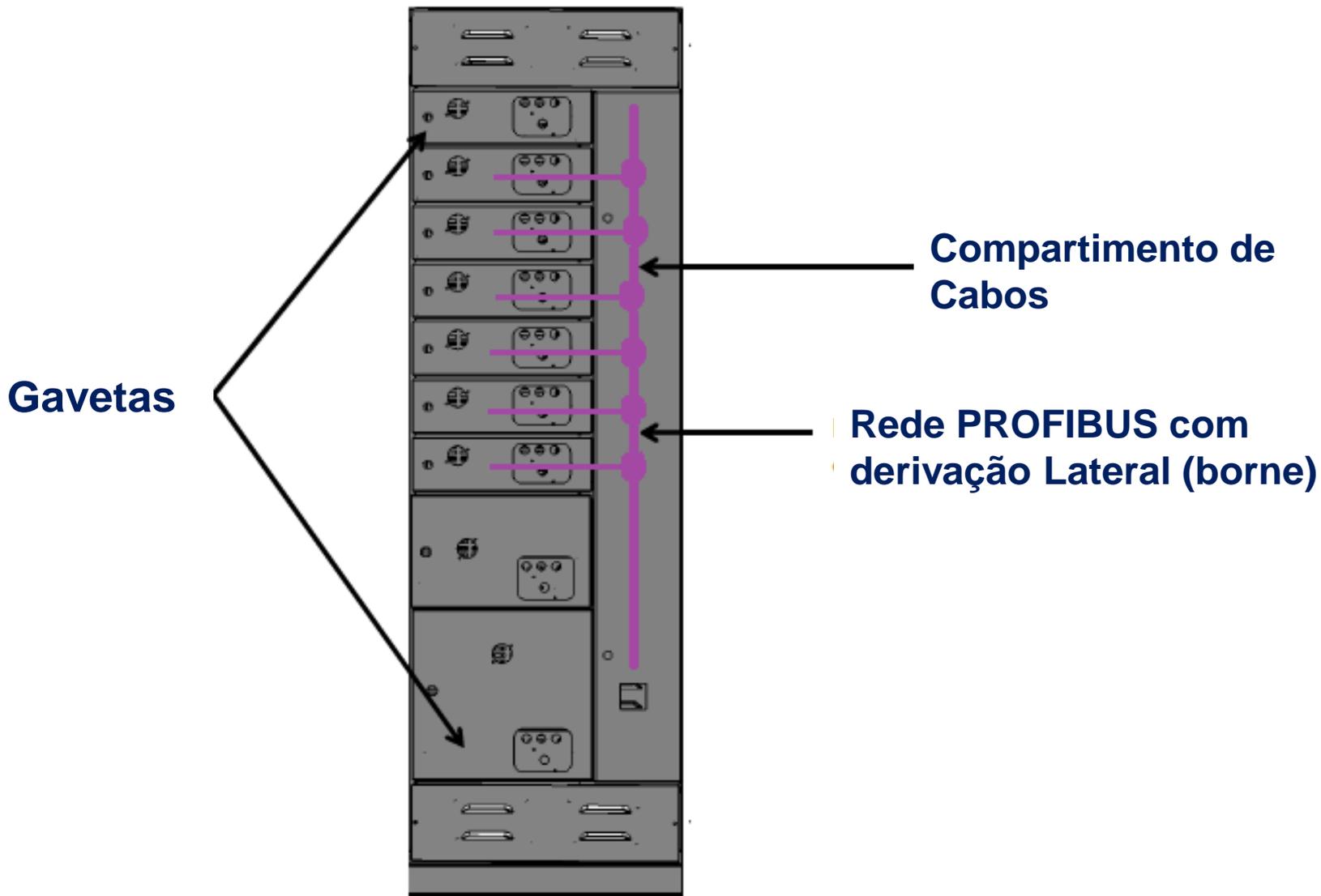


Colunas de CCM



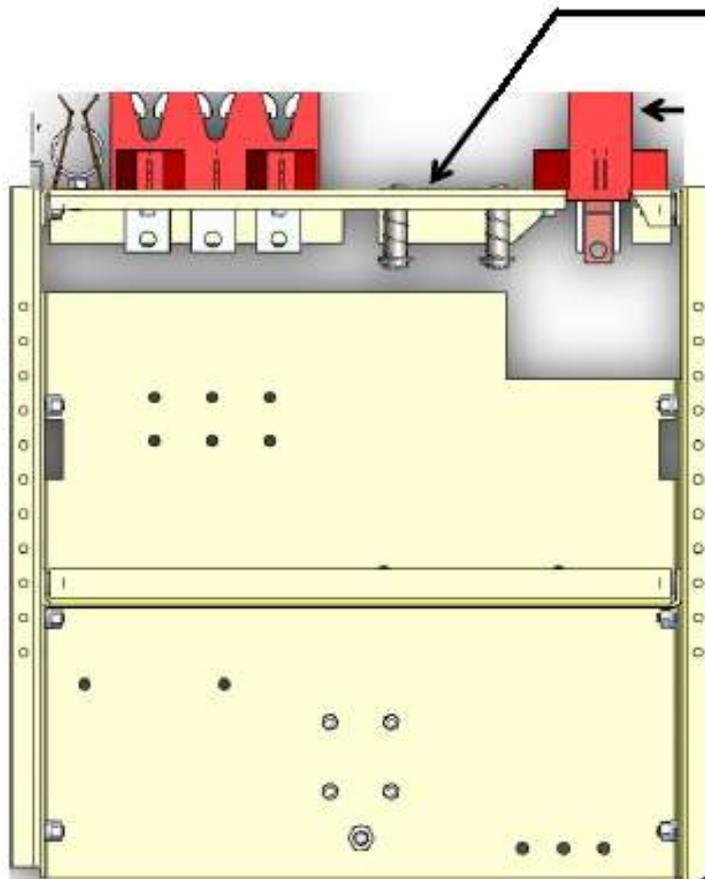


Redes PROFIBUS em CCM's





Redes PROFIBUS em CCM's

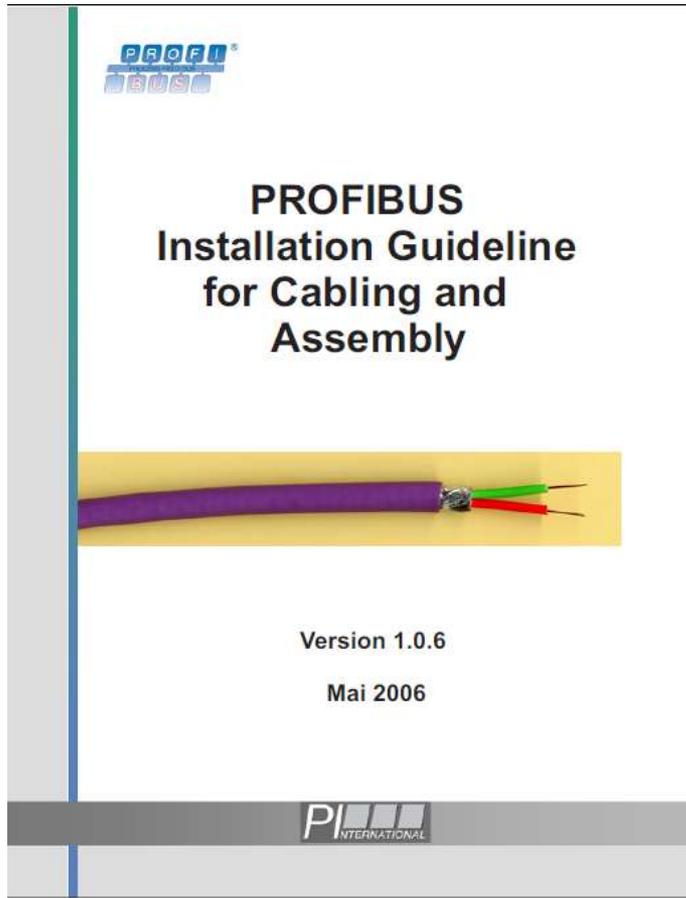


Conexão de dados pela parte traseira da gaveta



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Recomendações - PROFIBUS International (PI)



PROFIBUS



PROFIBUS

Technical Guideline

Installation Guideline
for PROFIBUS-DP/FMS

Version 1.0
September 1998

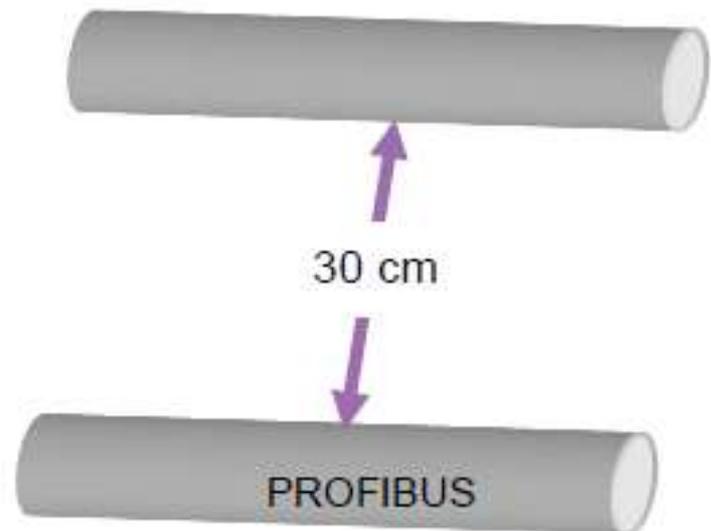
PROFIBUS Guideline, Order No. 2.112

2.2.2 Bus stub lines

The use of passive bus stub lines should be avoided.

Stub lines or spurs, são conexões passivas realizadas via borne, conexão tipo T, etc

- Maintain a minimum distance of 30 cm to power supply cables up to a voltage of 1000 V, unless other regulations require a greater distance. Pertinent information about this topic can be found in EN 50174-3:2003. For higher voltages, please observe the corresponding standards and regulations.



**Porque existem tantas reclamações de CCM's
com problemas comunicação?**



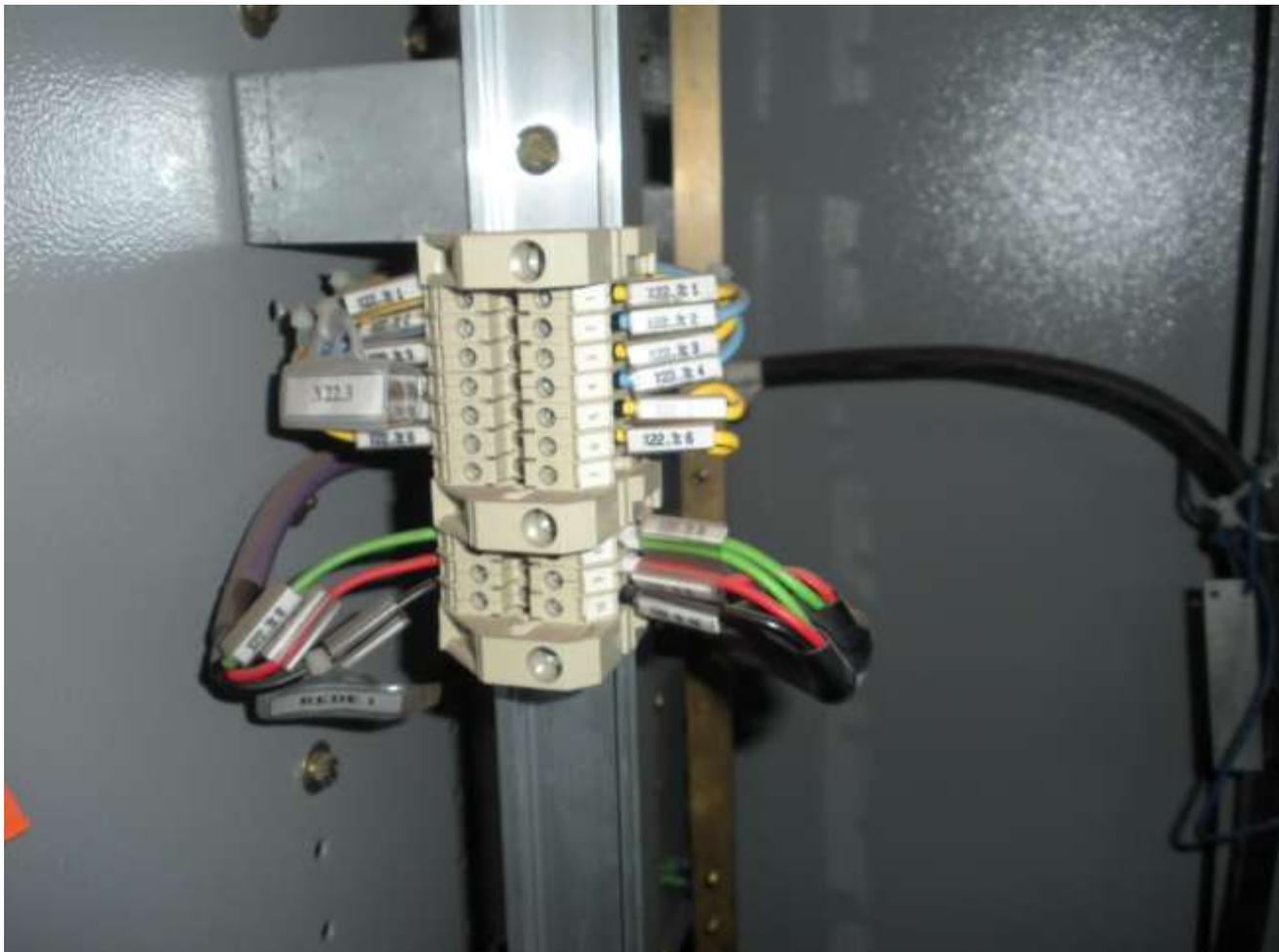
**Dispositivos interligados
com cabo menor que 1m
de comprimento**

**Derivação através de Bornes
nos cabos Profibus**





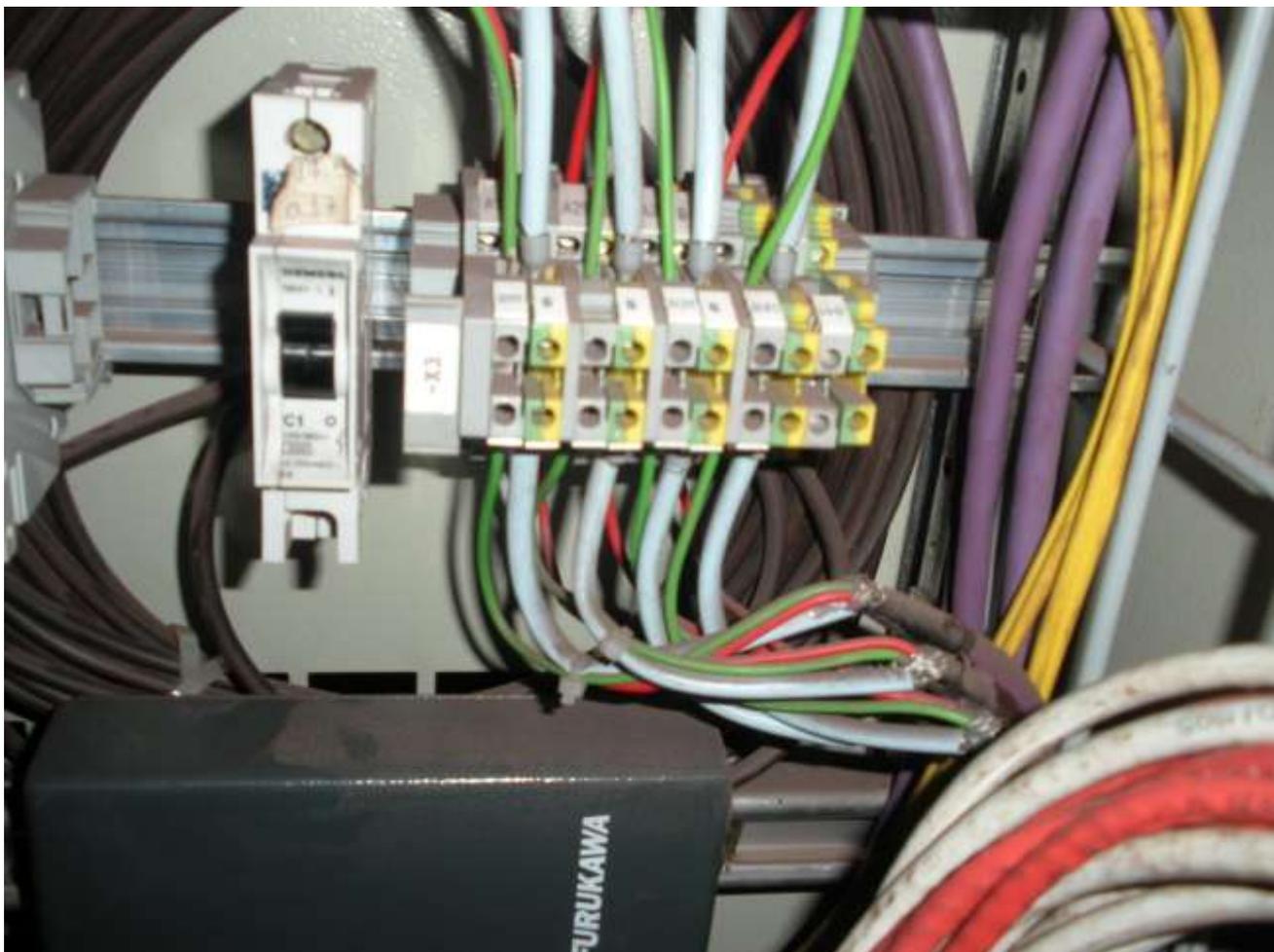
Redes PROFIBUS em CCM's



Derivação através de Bornes nos cabos Profibus



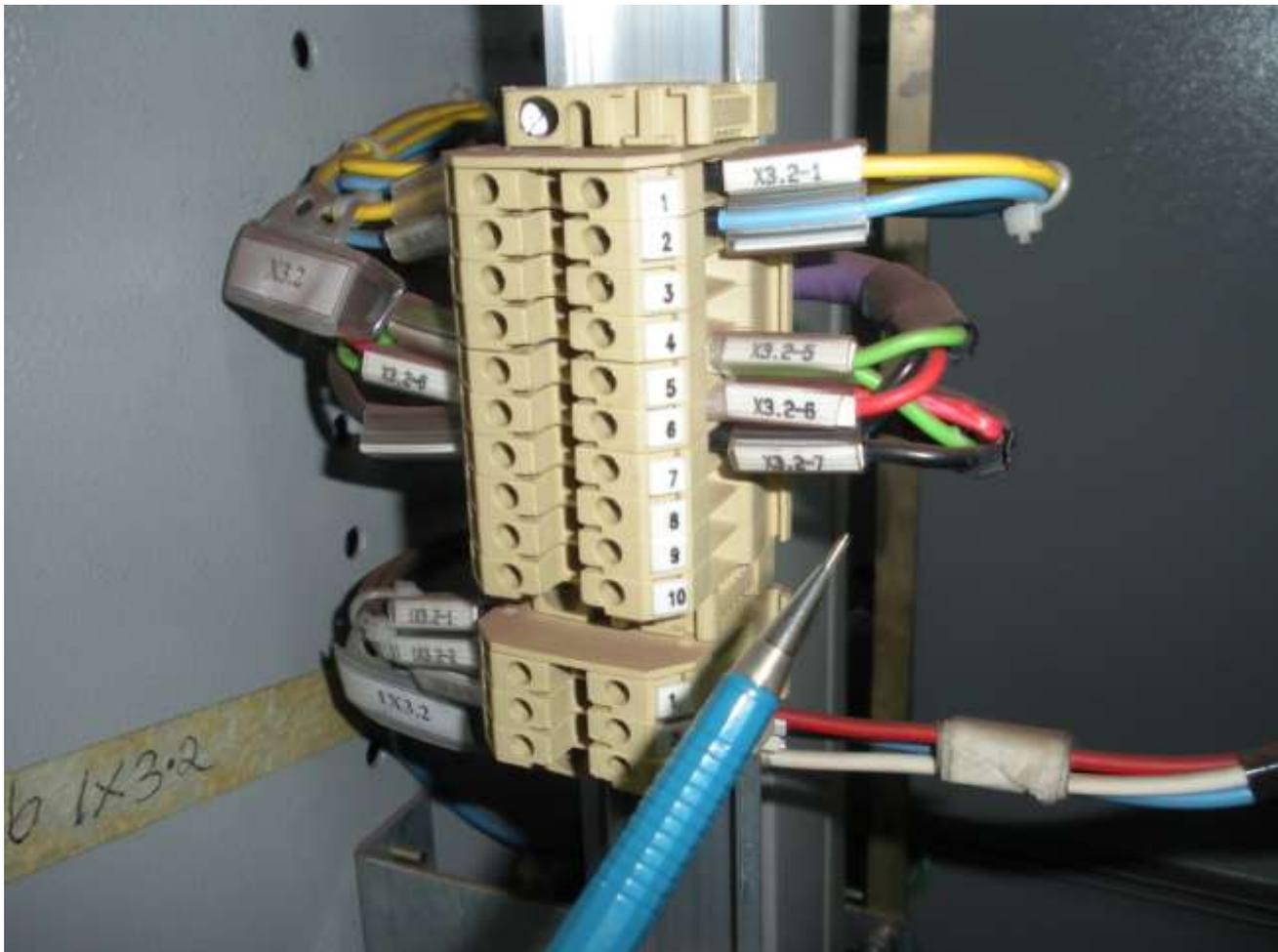
Redes PROFIBUS em CCM's



Derivação através de Bornes nos cabos Profibus



Redes PROFIBUS em CCM's



Derivação através de Bornes nos cabos Profibus



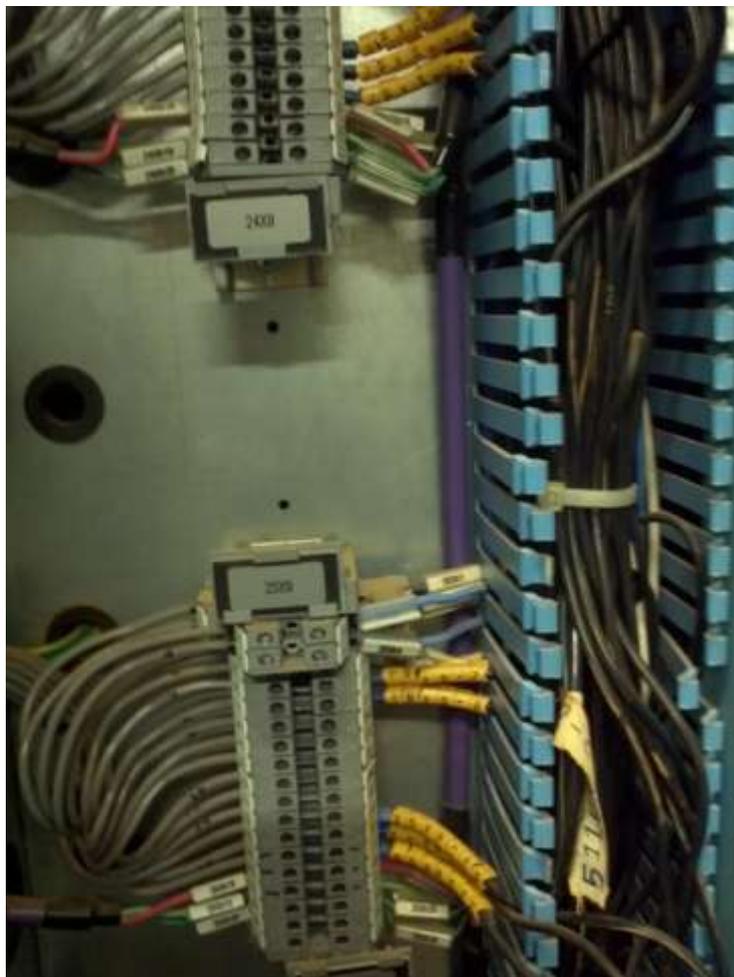
Redes PROFIBUS em CCM's



Derivação através de Bornes nos cabos Profibus



Redes PROFIBUS em CCM's



Derivação através de Bornes nos cabos Profibus



Redes PROFIBUS em CCM's



Cabo de rede próximo aos cabos de potência



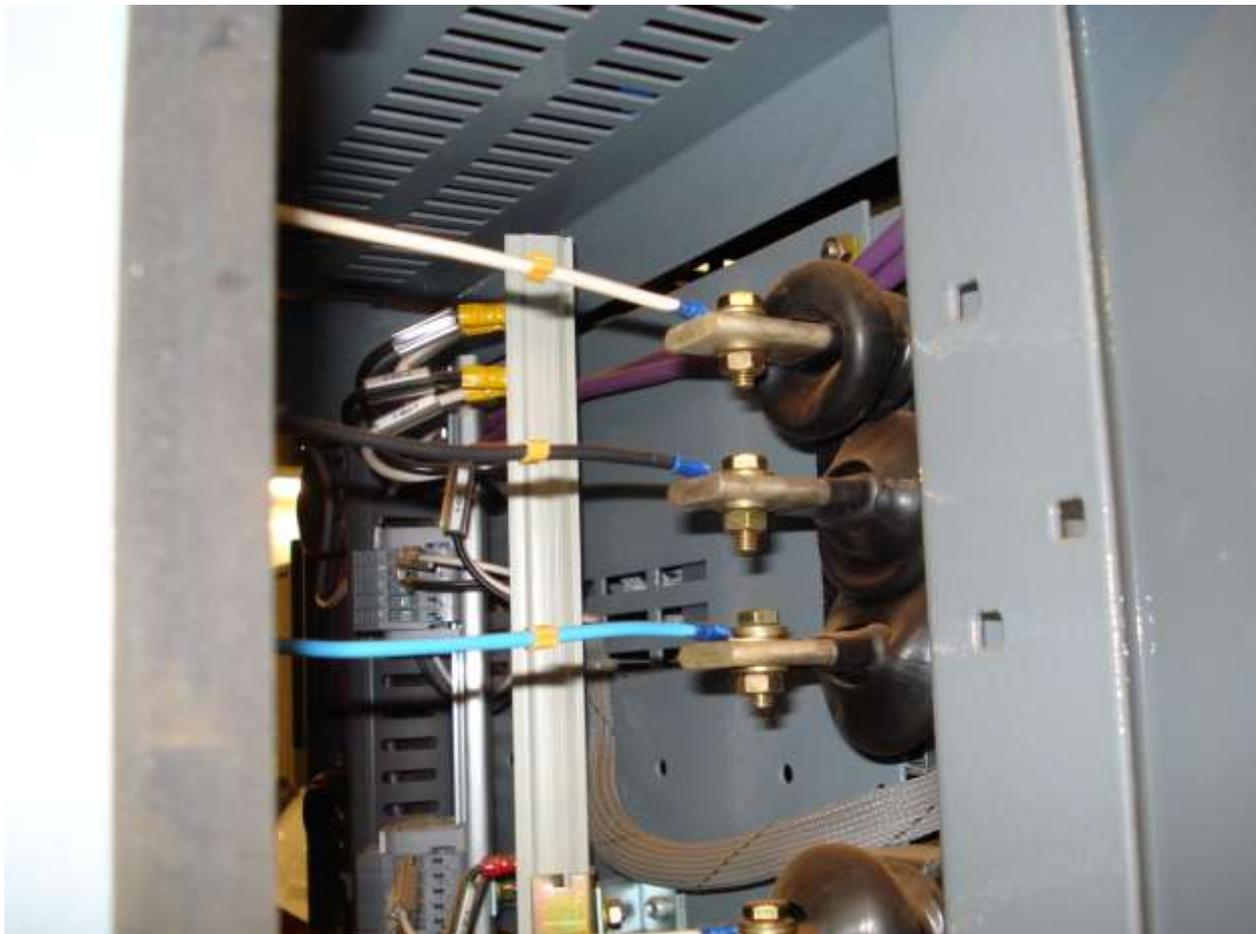
Redes PROFIBUS em CCM's



Cabo de rede próximo aos cabos de potência



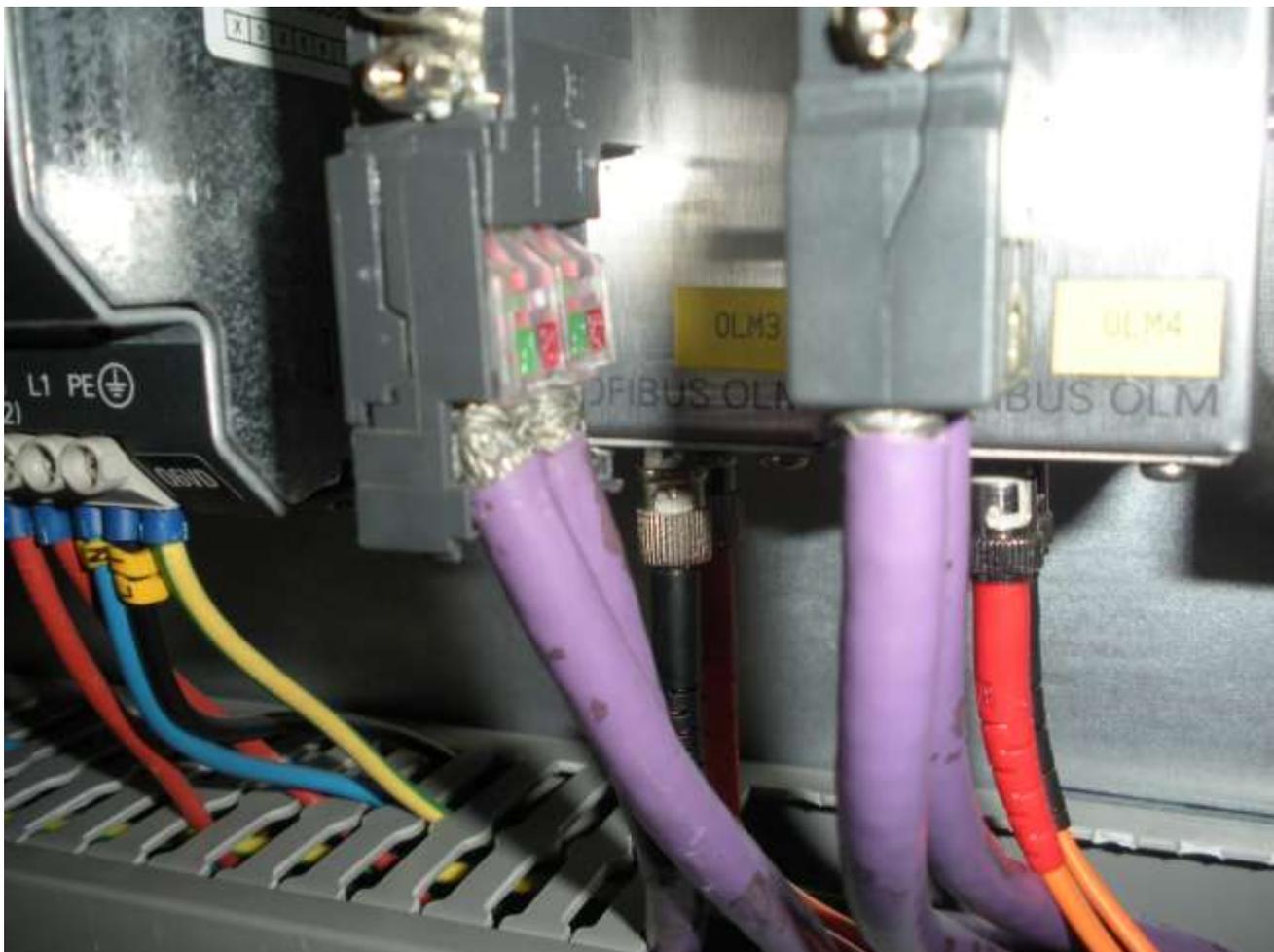
Redes PROFIBUS em CCM's



Cabo de rede próximo aos cabos de potência



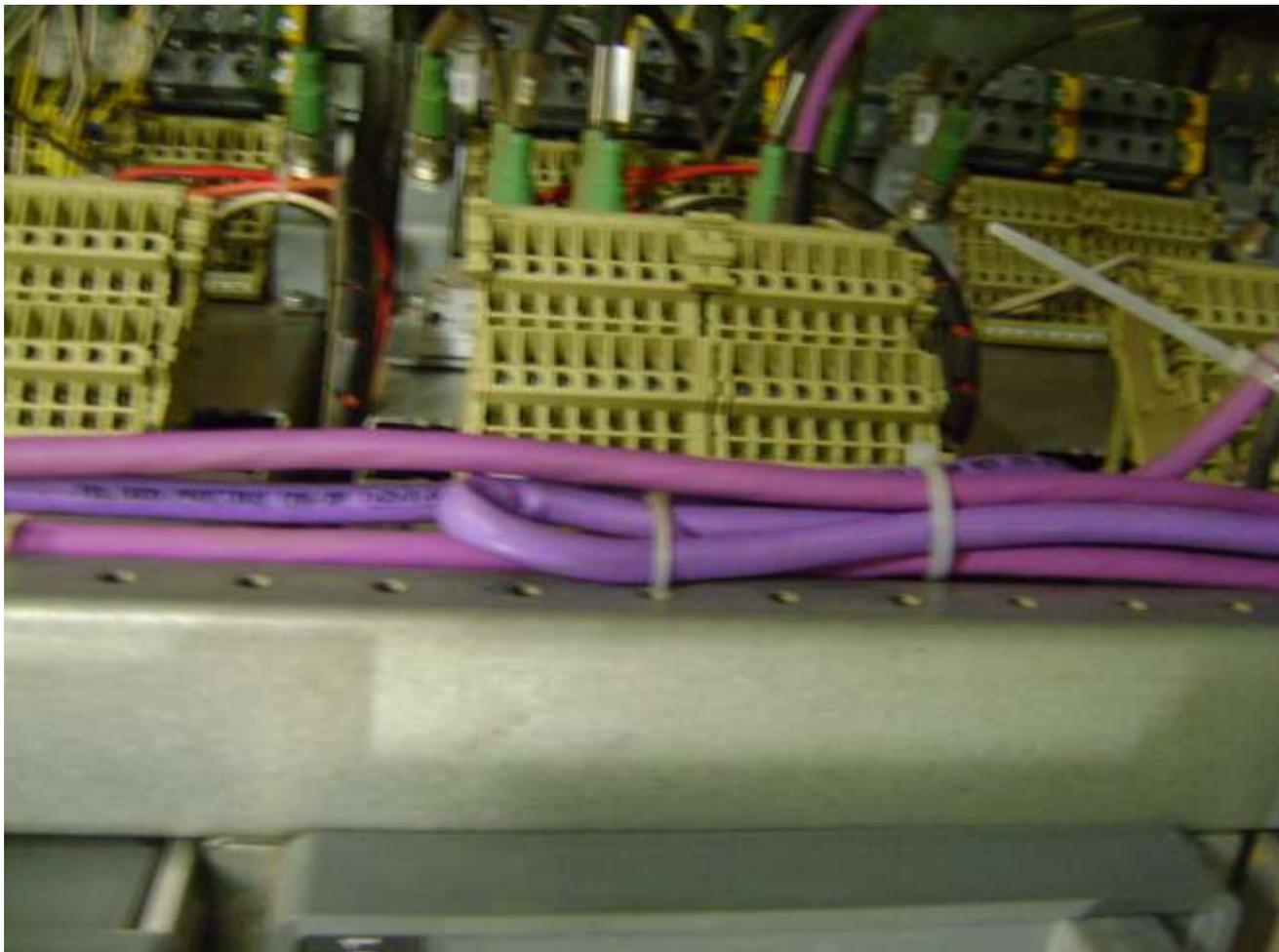
Redes PROFIBUS em CCM's



Conector danificado



Redes PROFIBUS em CCM's



Curvatura acentuada – Interior CCM



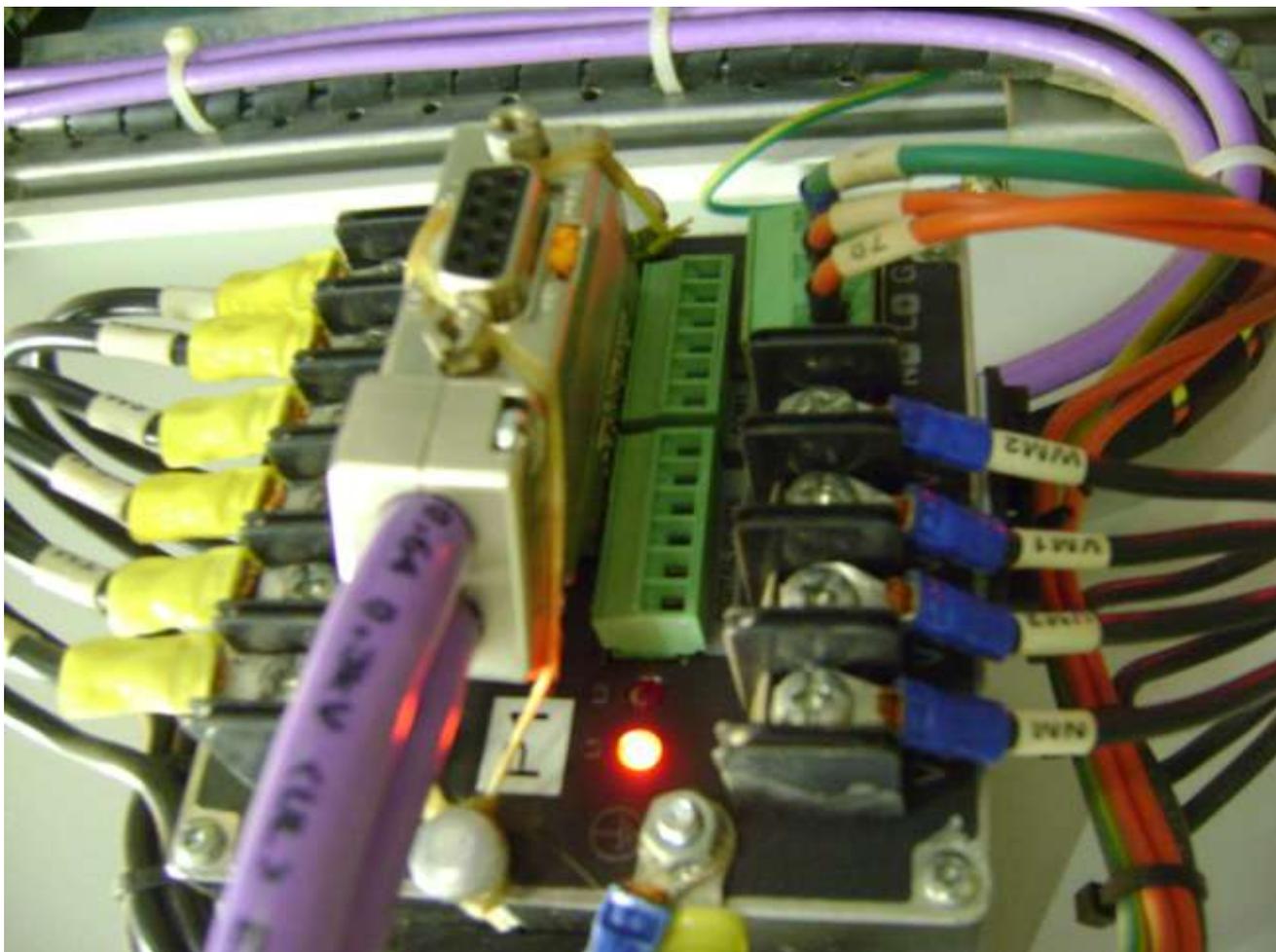
Redes PROFIBUS em CCM's



Conector e cabo não apropriados para rede Profibus



Redes PROFIBUS em CCM's

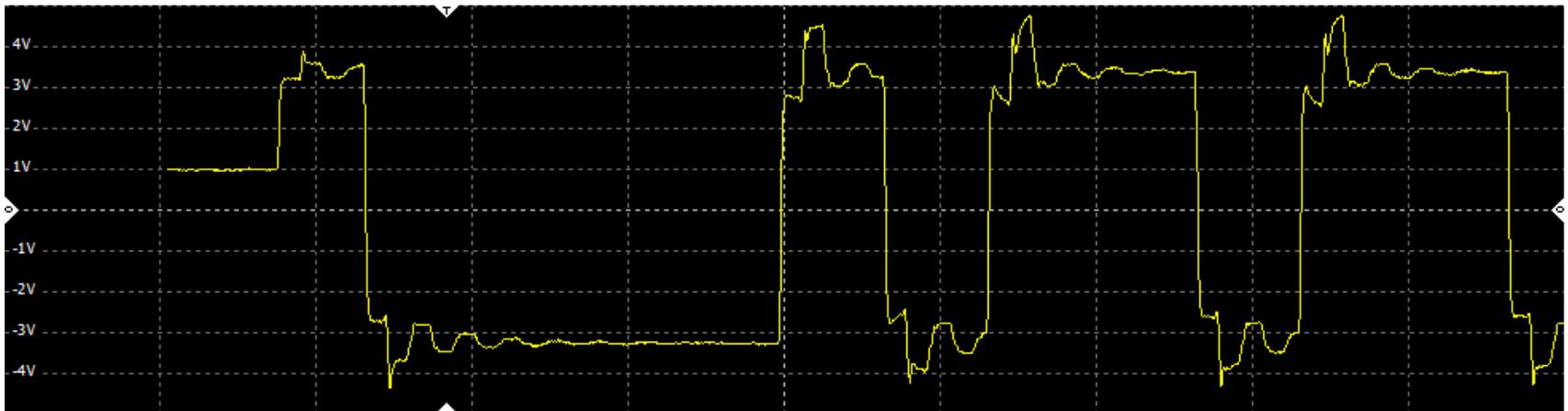
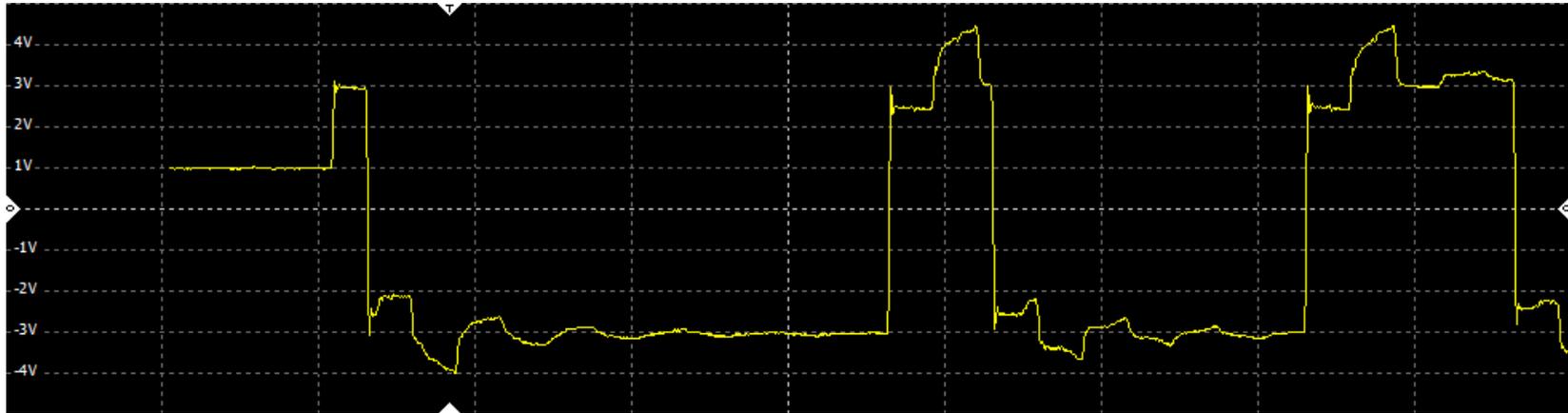


Conector preso com fita elástica

Como a montagem afeta a confiabilidade do sinal de comunicação PROFIBUS nos CCM's?

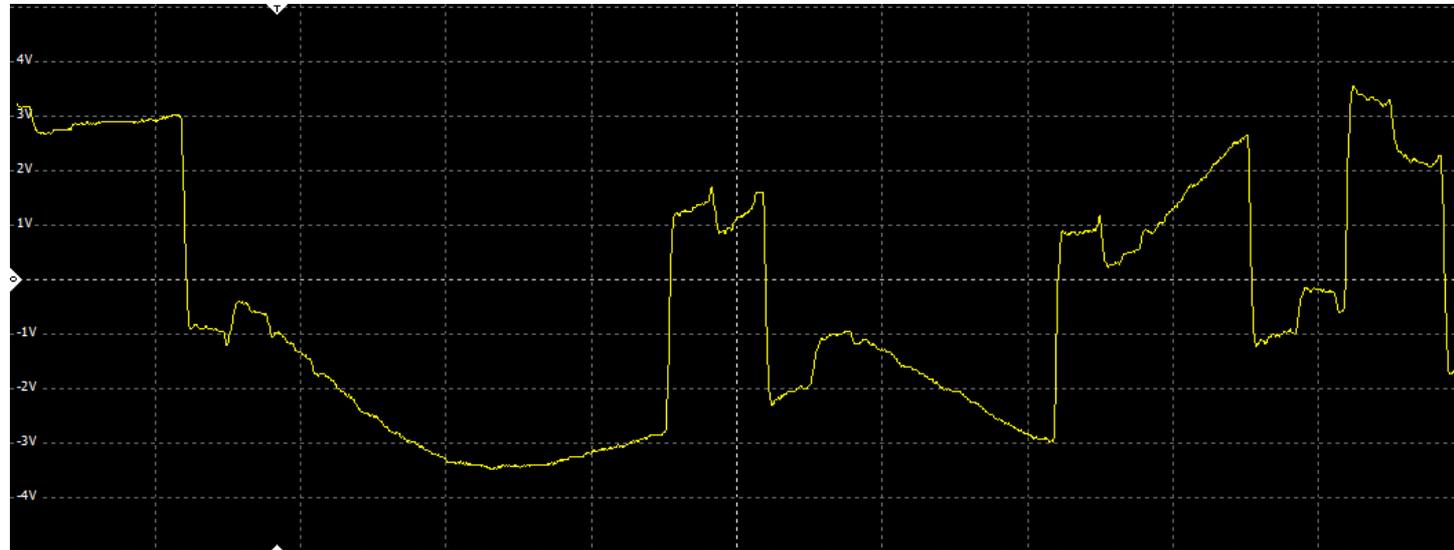


Exemplos – Problemas de comunicação



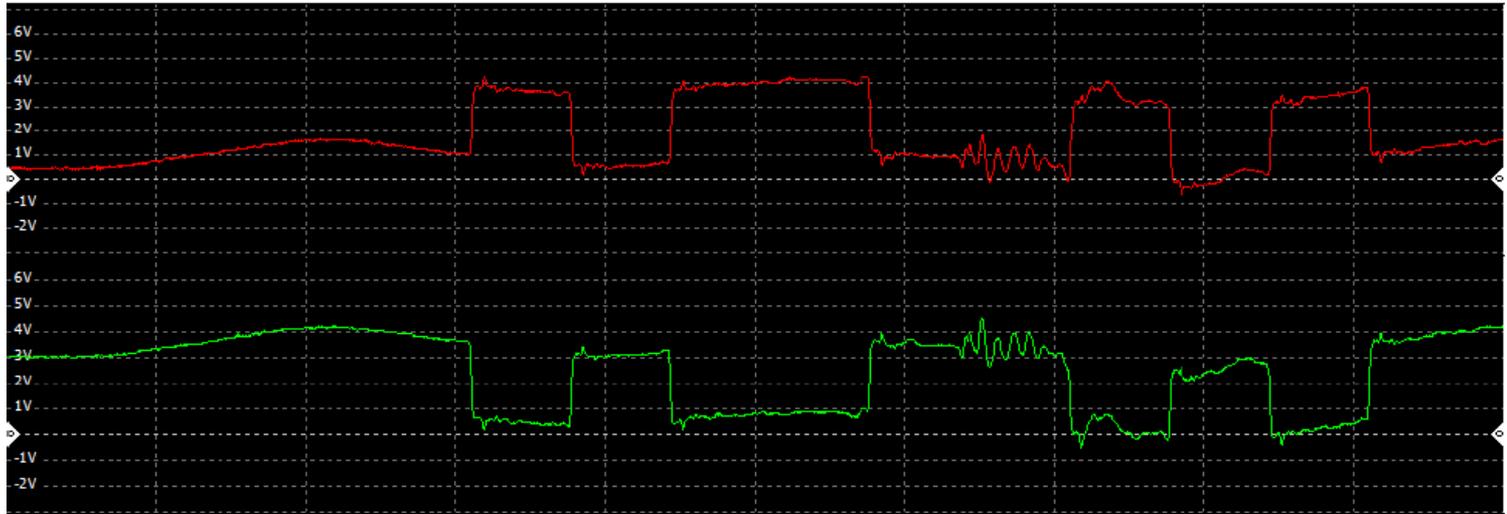
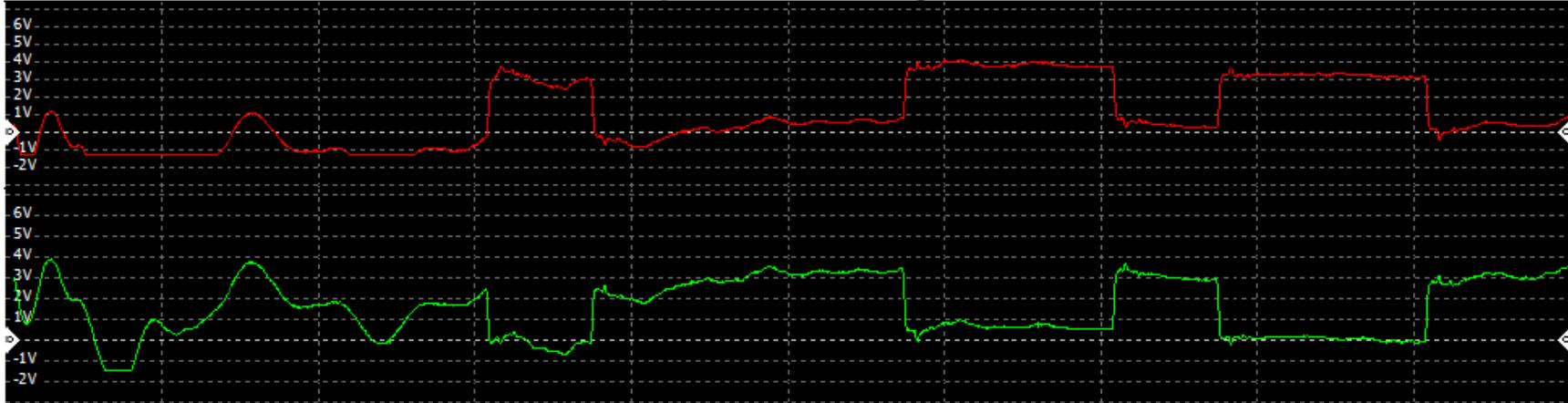


Exemplos – Problemas de comunicação





Exemplos – Problemas de comunicação





Uma rede PROFIBUS com montagem adequada, dentro das recomendações, possui um sinal estável e confiável !



Como aumentar a disponibilidade e monitorar a qualidade da comunicação PROFIBUS?





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Redes PROFIBUS em CCM's

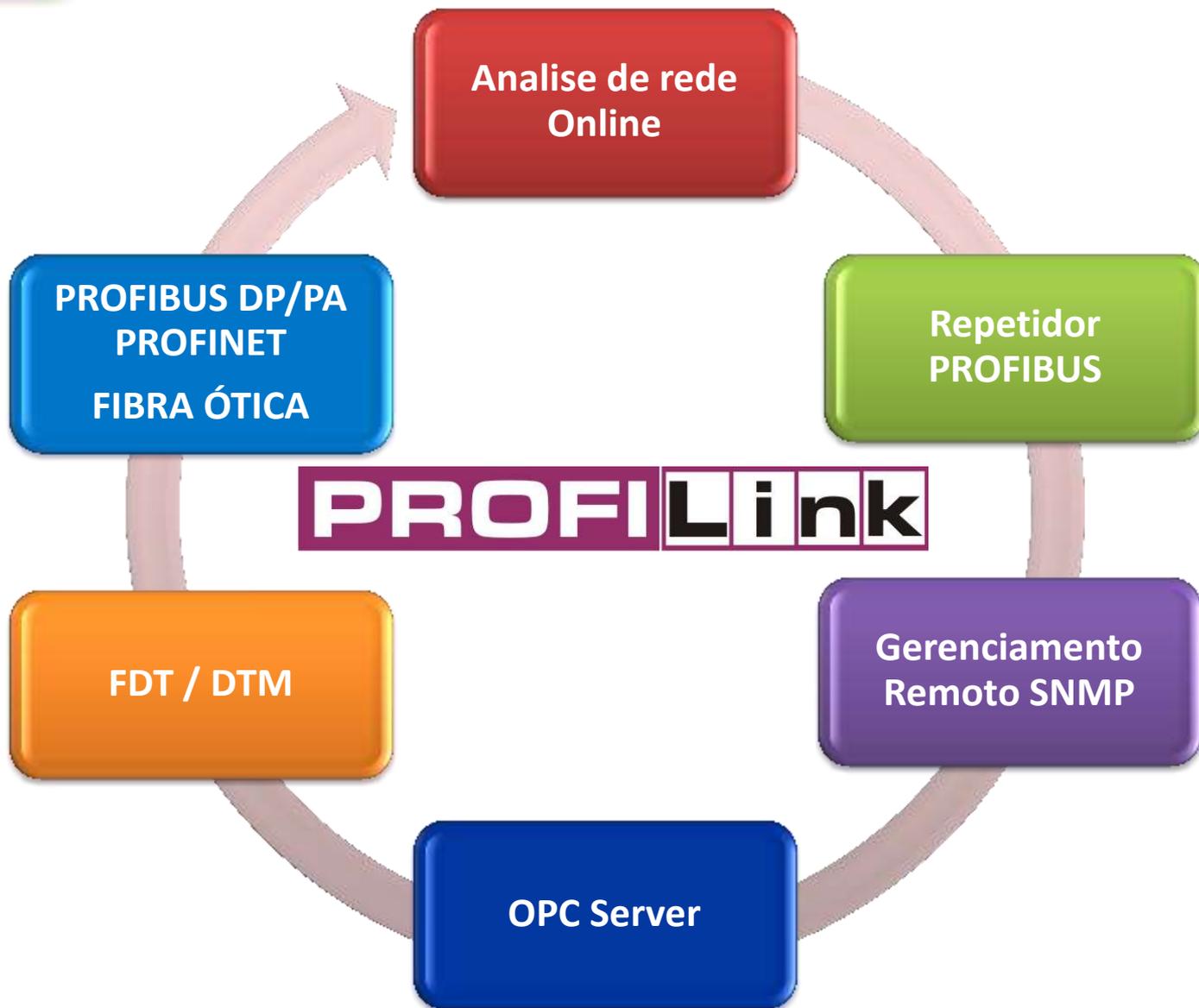
PROFI Link

**Diagnóstico, Monitoração On-Line
e Gerenciamento de Ativos
de Redes PROFIBUS**

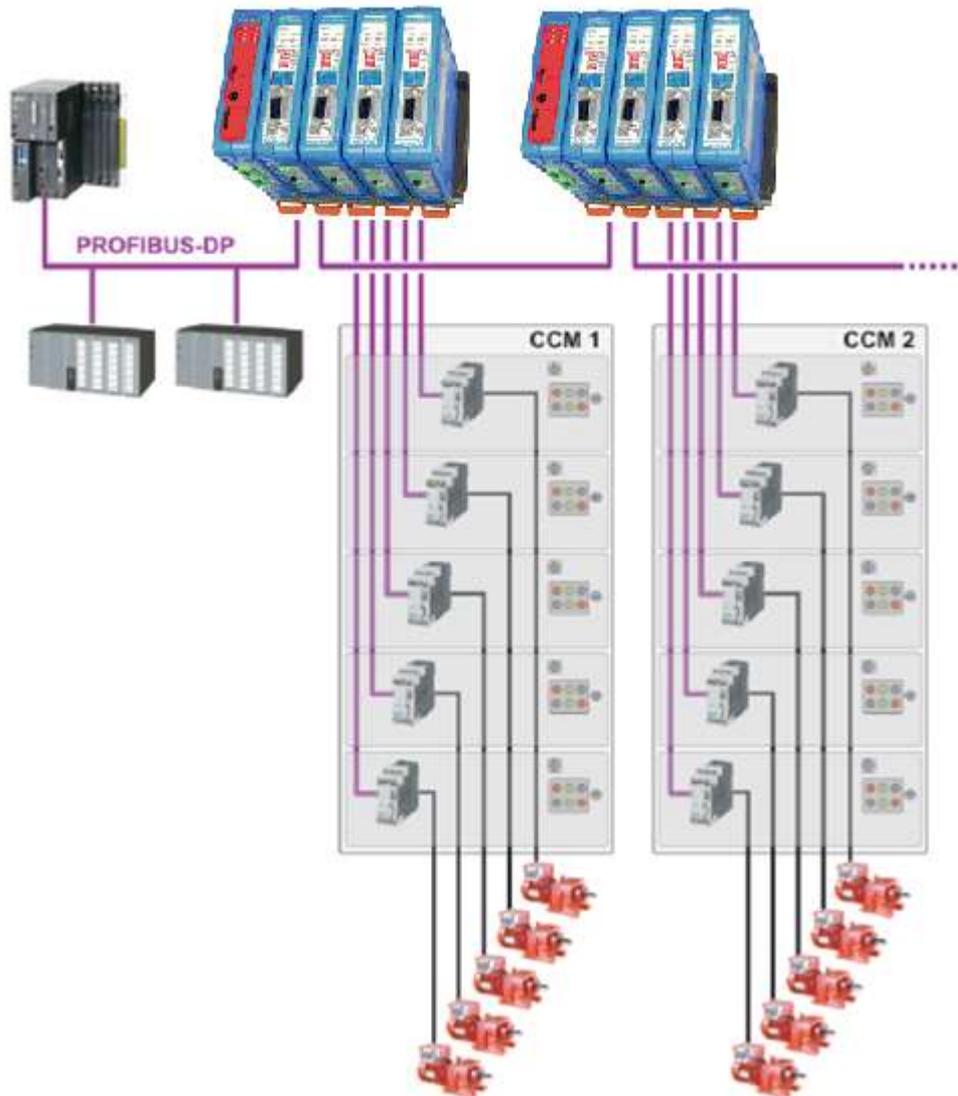




Redes PROFIBUS em CCM's

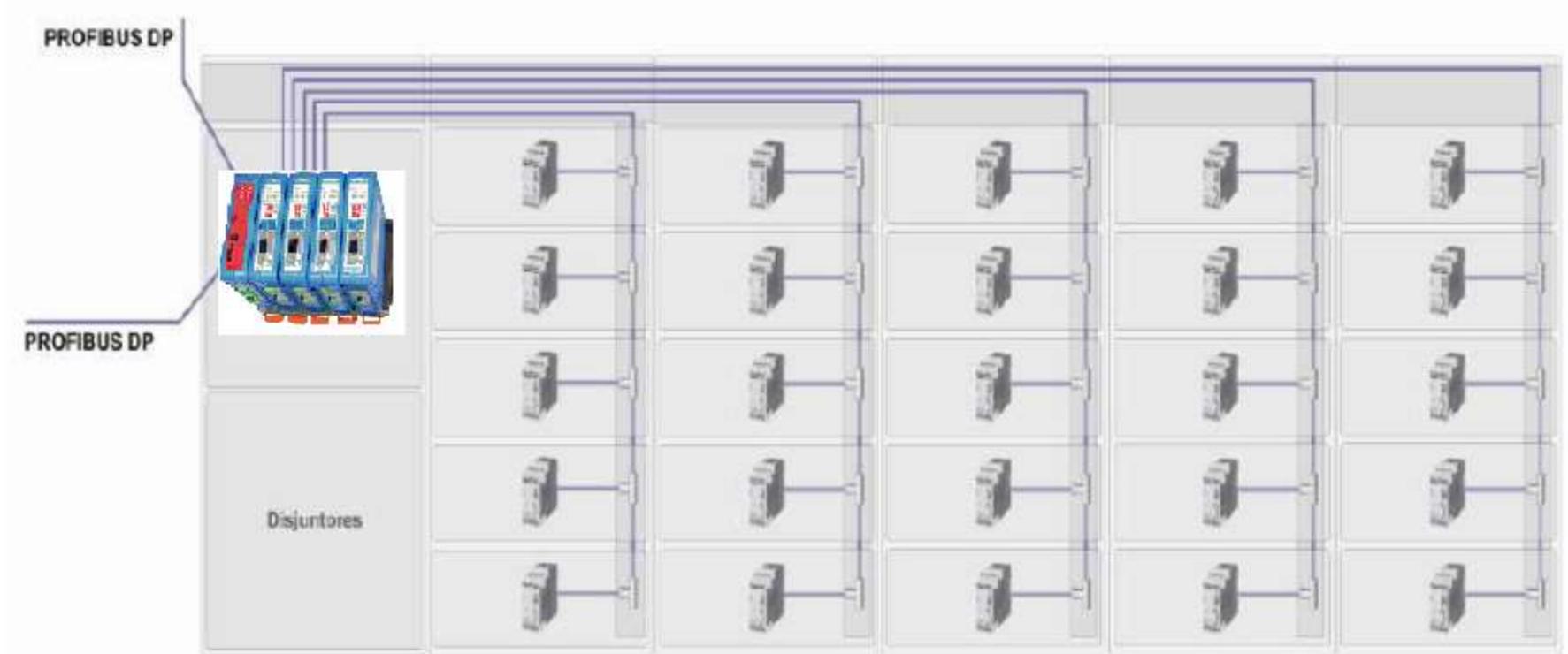


Nova arquitetura de montagem





Nova arquitetura de montagem





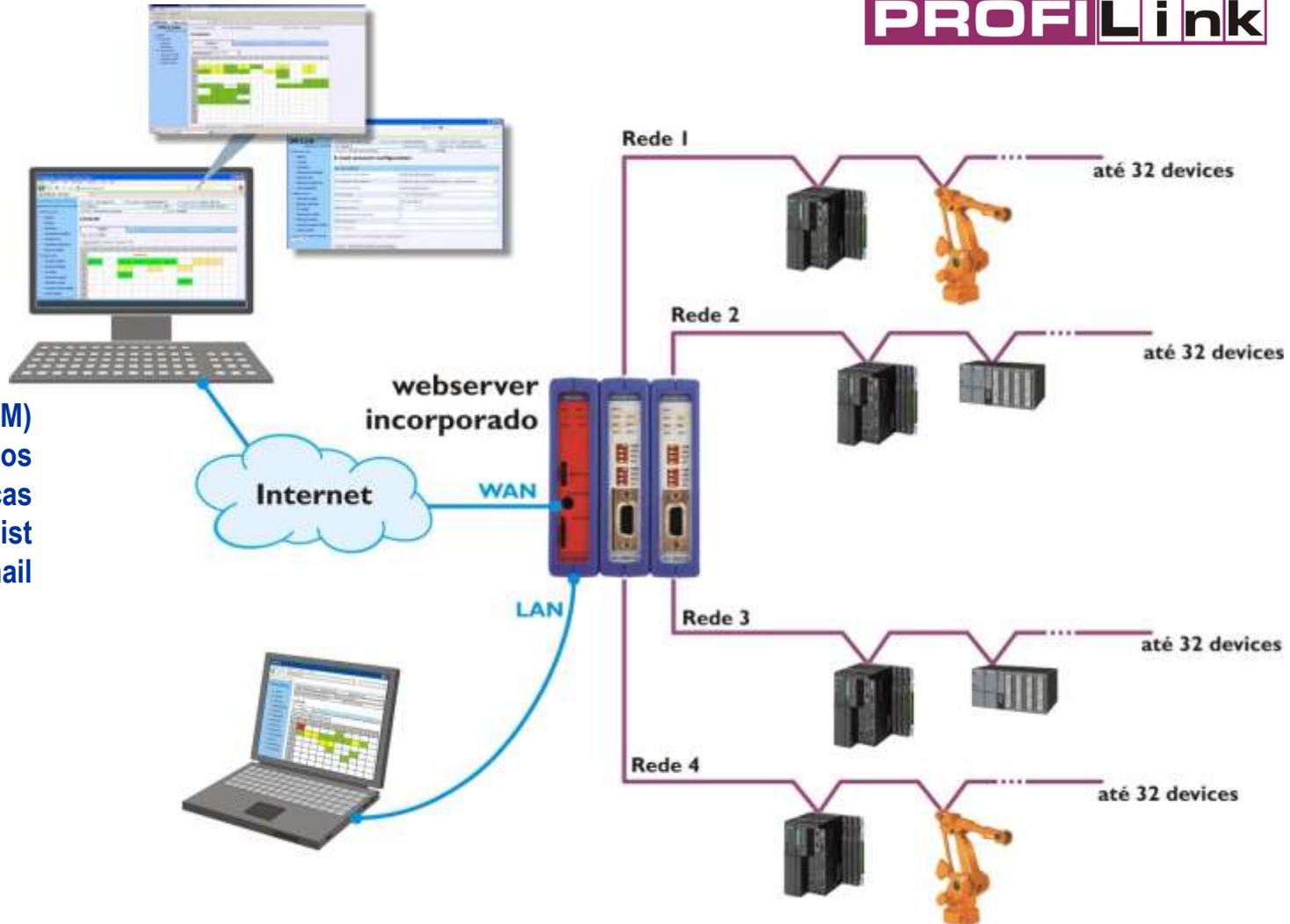
Com o **PROFI**Link você pode:

- ✓ **Monitorar as redes em Tempo Real
24 horas por dia, 7 dias por semana**
- ✓ **Capturar e diagnosticar falhas intermitentes em
Redes PROFIBUS**
- ✓ **Monitorar, diagnosticar e gerenciar remotamente
Redes PROFIBUS**
- ✓ **Enviar mensagens de alerta via e-mail**

- ✓ **Gerenciar Ativos em Redes PROFIBUS, CommDTM incluso no sistema**
- ✓ **Modulo Repetidor com oscilógrafia incorporada**
- ✓ **OPC Server disponível para interação com outros sistemas**
- ✓ **Modulo de alimentação redundante, aumentando a disponibilidade do sistema**
- ✓ **Modulo de Alarme (saídas rele) para interação e diagnósticos.**

PROFI Link

- Gerenciamento de Ativos (DTM)
- Log de Erros e Eventos
- Estatísticas
- Live List
- Alarmes via e-mail



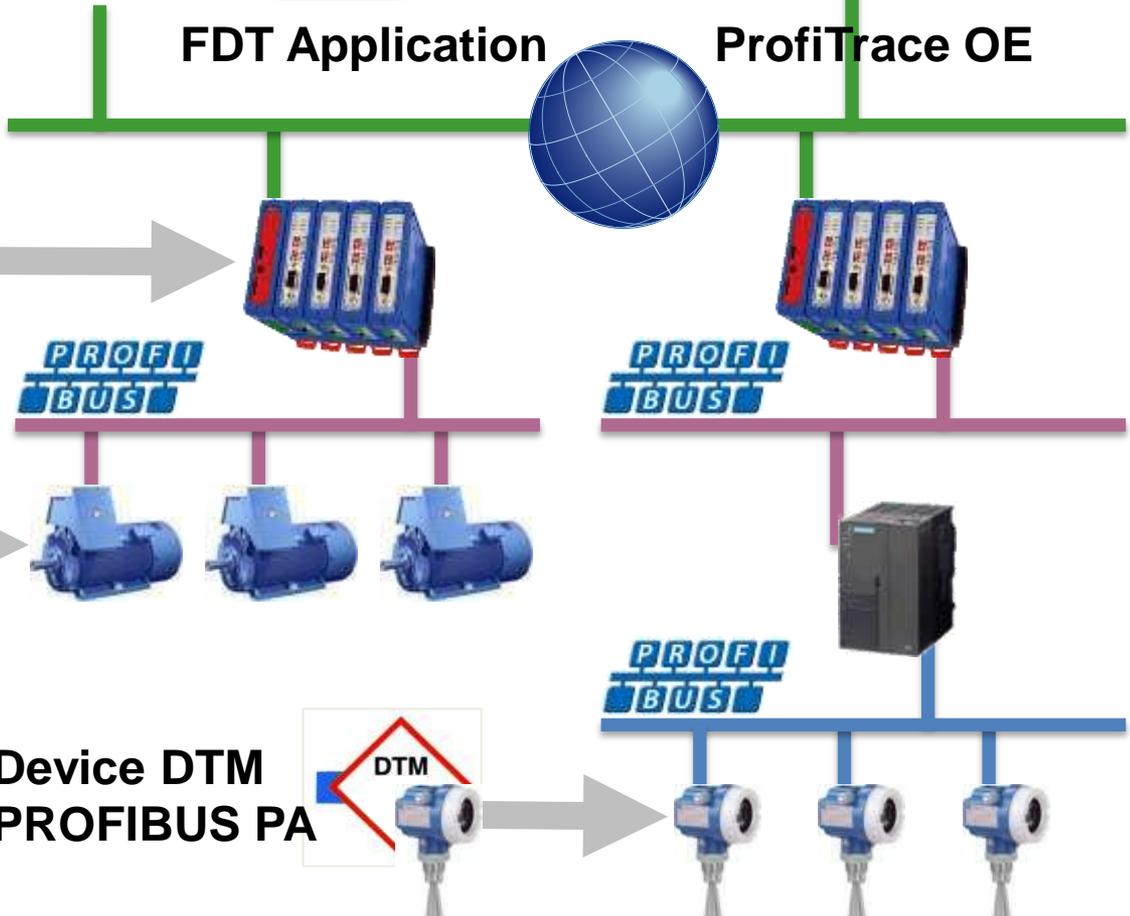
PROFILink



FDT Application

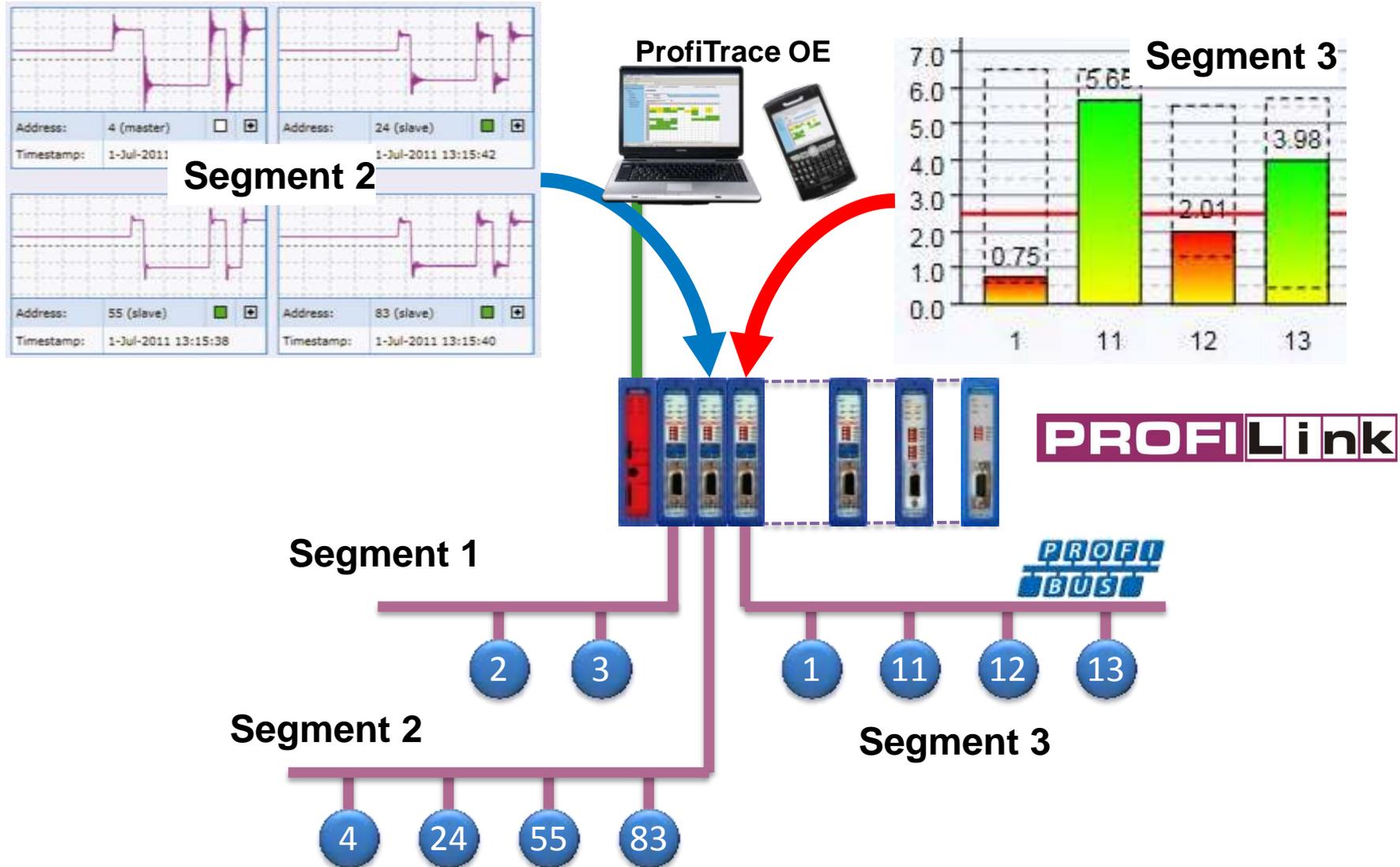


ProfiTrace OE

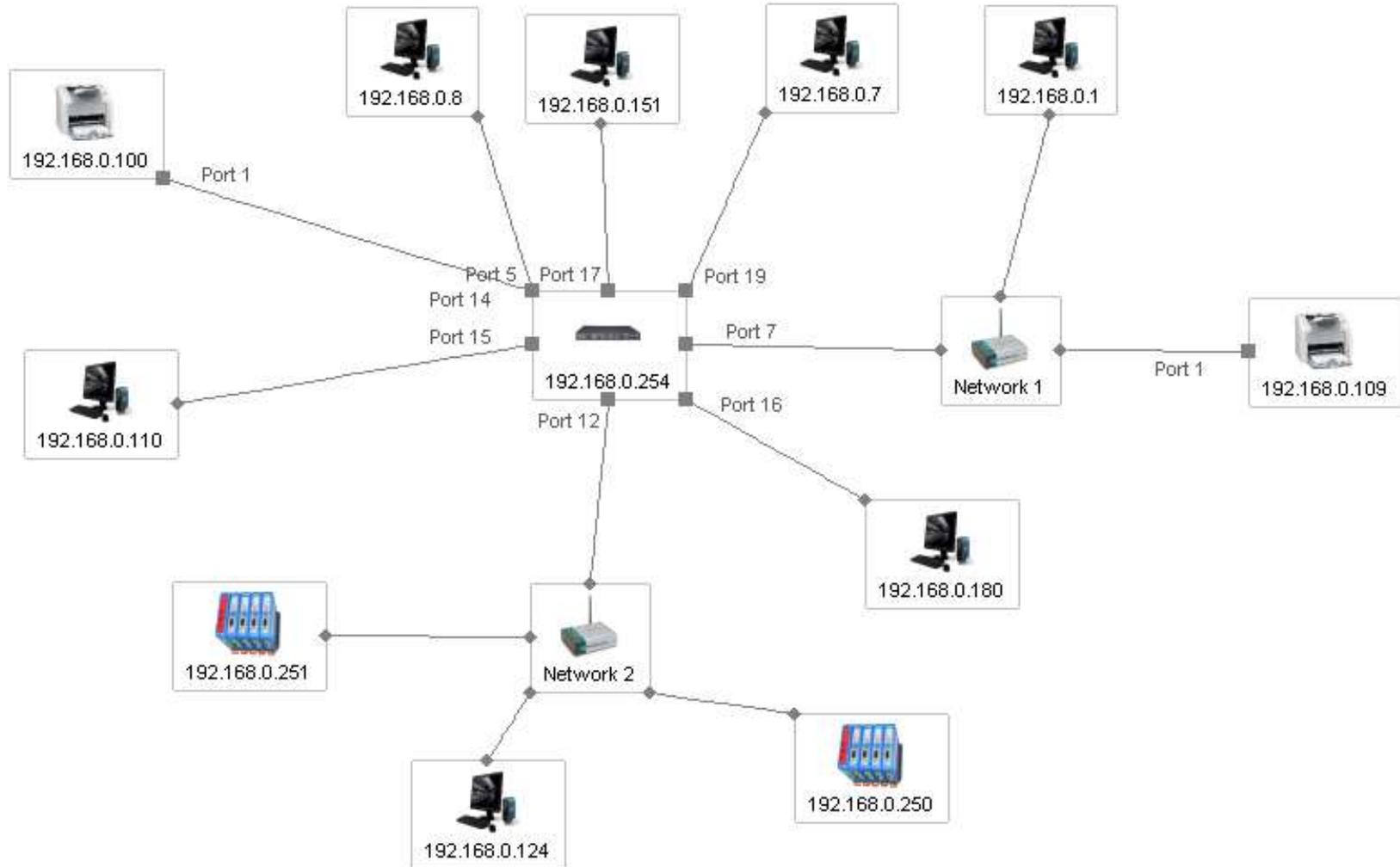




Modulo Repetidor com Oscilografia



Gerenciamento via SNMP





Exemplo com Repetidores

2 segments



3 segments

Maximum 10 modules (2 channel repeaters)



20 segments



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Exemplo de configuração de Gateway de rede PROFIBUS

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DP/DP Gateway



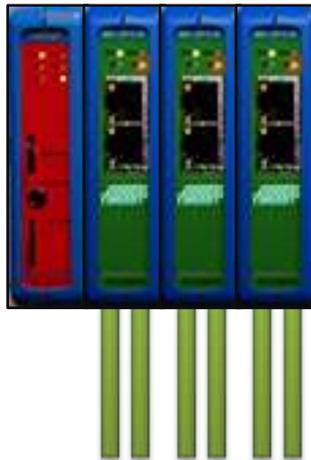
PN/PA Gateway



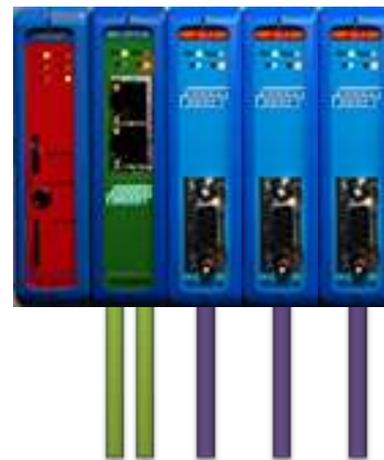
DP/PA Gateway



PN/PN Gateway



PN/DP Gateway





Webserver: Tela de Status

PROFI-Link - WESTCON - Windows Internet Explorer
 http://192.168.1.230/

PROFILink

- [Status](#) ←
- [System Log](#)

ProfiTrace OE:

- [Live List](#)
- [Statistics](#)
- [Message recording](#)
- [Network event Log](#)

Configuration:

- [General config](#)
- [Device management](#)
- [IP config](#)
- [Password config](#)
- [Network config](#)
- [E-mail account config](#)
- [User message](#)
- [Event config](#)
- [Update license](#)

IP address: 192.168.1.230 MAC address: 9C:B2:06:00:02:18 System uptime: 0 days, 0:16:27
 Site: Boiler 5 Temperature: 33°C System time: 31-Mar-2011 21:32:12
 Company: Oil and Gas Company Country: Alaska

Status

User message

- 3 March 2011: Service on Wago remote I/O.
 - 7 March 2011: Exchanged plug on Siemens ET200S.
 Call John Doe for more information +11 (222)345678

Slot	Status	Module	Serial #	Hw Rev
0	OK	Head Station Type 1C	WESTCON	000536 V1.5
1	OK	2 Channel RS485 Repeater Type 1	WESTCON	000201 V0.5
2	OK	2 Channel RS485 Repeater Type 1	WESTCON	000200 V0.5

Informações remotas

Mensagens deixadas pelo usuário

Módulos existentes no sistema

Menu simples e funcional



Webserver: System Log

PROFI-Link - WESTCON - Windows Internet Explorer
http://192.168.1.230/
Favorites: PROFILink - WESTCON

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- [Status](#)
- [System Log](#)

ProfiTrace OE:

- [Live List](#)
- [Statistics](#)
- [Message recording](#)
- [Network event Log](#)

Configuration:

- [General config](#)
- [Device management](#)
- [IP config](#)
- [Password config](#)
- [Network config](#)
- [E-mail account config](#)
- [User message](#)
- [Event config](#)
- [Update license](#)

IP address: 192.168.1.230 MAC address: 9C:B2:06:00:02:18 System uptime: 0 days, 0:16:27
Site: Boiler 5 Temperature: 33°C System time: 31-Mar-2011 21:32:12
Company: Oil and Gas Company Country: Alaska

System log

Descending Pages:

#	Date & Time	Message
5	2-Apr-2011 16:28:18	Module added in slot 2: 2 Channel RS485 Repeater Type 1 (sn:200)
4	2-Apr-2011 16:28:10	Module removed from slot 2
3	2-Apr-2011 16:27:48	Module added in slot 2: 2 Channel RS485 Repeater Type 1 (sn:200)
2	2-Apr-2011 16:27:42	Module added in slot 1: 2 Channel RS485 Repeater Type 1 (sn:201)
1	2-Apr-2011 16:27:34	System startup (00)

 Last update: 2-Apr-2011 16:29:41 (5 lines, 20 lines per page)

Atualiza e Limpa a lista

Eventos do Sistema



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Webserver: Live List

PROFI-Link - WESTCON - Windows Internet Explorer
 http://192.168.1.230/

IP address: 192.168.1.230 MAC address: :06:00:0... System uptime: 0 days, 0:16:27
 Site: Boiler 5 Temperature: System time: 31-Mar-2011 21:32:12
 Company: Oil and Gas Company Country: Alaska

Live List

Tank 1 Tank 2 Reserve Tank 1 Reserve Tank 2

Baud rate: 1.5 Mbps

Model_Name Reset Live List

	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
10	10	11	12	Heidenhain Encoder	14	VM10 NORGREN	16	17	18	19
20	20	21	22	23	24	25	26	GPL-DT4 LGIS	28	JK16IDP ACMI
30	30	31	750-333 WAGO	33	34	35	36	37	38	39
40	40	41	42	43	44	45	46	47	48	49
50	50	51	52	53	54	55	56	57	58	59
60	60	61	62	63	64	65	66	67	68	69
70	70	71	72	73	74	75	76	77	78	79
80	80	81	82	83	84	85	86	87	88	89

Monitora até 4 redes

PROFILink

- [Status](#)
- [System Log](#)
- ProfiTrace OE:
 - [Live List](#)
 - [Statistics](#)
 - [Message recording](#)
 - [Network event Log](#)
- Configuration:
 - [General config](#)
 - [Device management](#)
 - [IP config](#)
 - [Password config](#)
 - [Network config](#)
 - [E-mail account config](#)
 - [User message](#)
 - [Event config](#)
 - [Update license](#)



Live List similar àquela do ProfiTrace V2.5.1



Device channel list

Display network 1: Display network 2: Display network 3: Display network 4:

Reset Live list of network 1 Reset Live list of network 2 Reset Live list of network 3 Reset Live list of network 4

PROCENTEC Head Station Type 1C	Module 1	Module 2	Empty							
--------------------------------	----------	----------	-------	-------	-------	-------	-------	-------	-------	-------

ch 1 ch 1

Nw 1:	Nw 2:
0	2
2	24
3	32
7	55
12	84
30	125
31	
46	
58	
84	

Localização exata do slave com problema

COMbricks webserver V1.255.16(beta) • Copyright (C)2010-2011 PROCENTEC. All rights reserved. • info@procentec.com

Firefox - COMbricks - Procentec

192.168.1.254

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- [Live list](#)
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- [Network event Log](#)
- [Event config](#)

Special modules:

- [Oscilloscope images](#)
- [Bargraph images](#)
- [Oscilloscope config](#)

Configuration:

- [General config](#)
- [Network config](#)
- [IP config](#)
- [Password config](#)
- [E-mail account config](#)
- [Device management](#)

IP address: **192.168.1.254** MAC address: **9C:B2:06:00:02:2F** System uptime: **0 days, 0:20:53**

Site: Temperature: **41°C** System time: **2-Nov-2011 22:36:01**

Company: Country:

Bargraph image

Select oscilloscope module: Slot 1

Select sorting type: Address Ascending Normal sort order

Reset the bargraph:

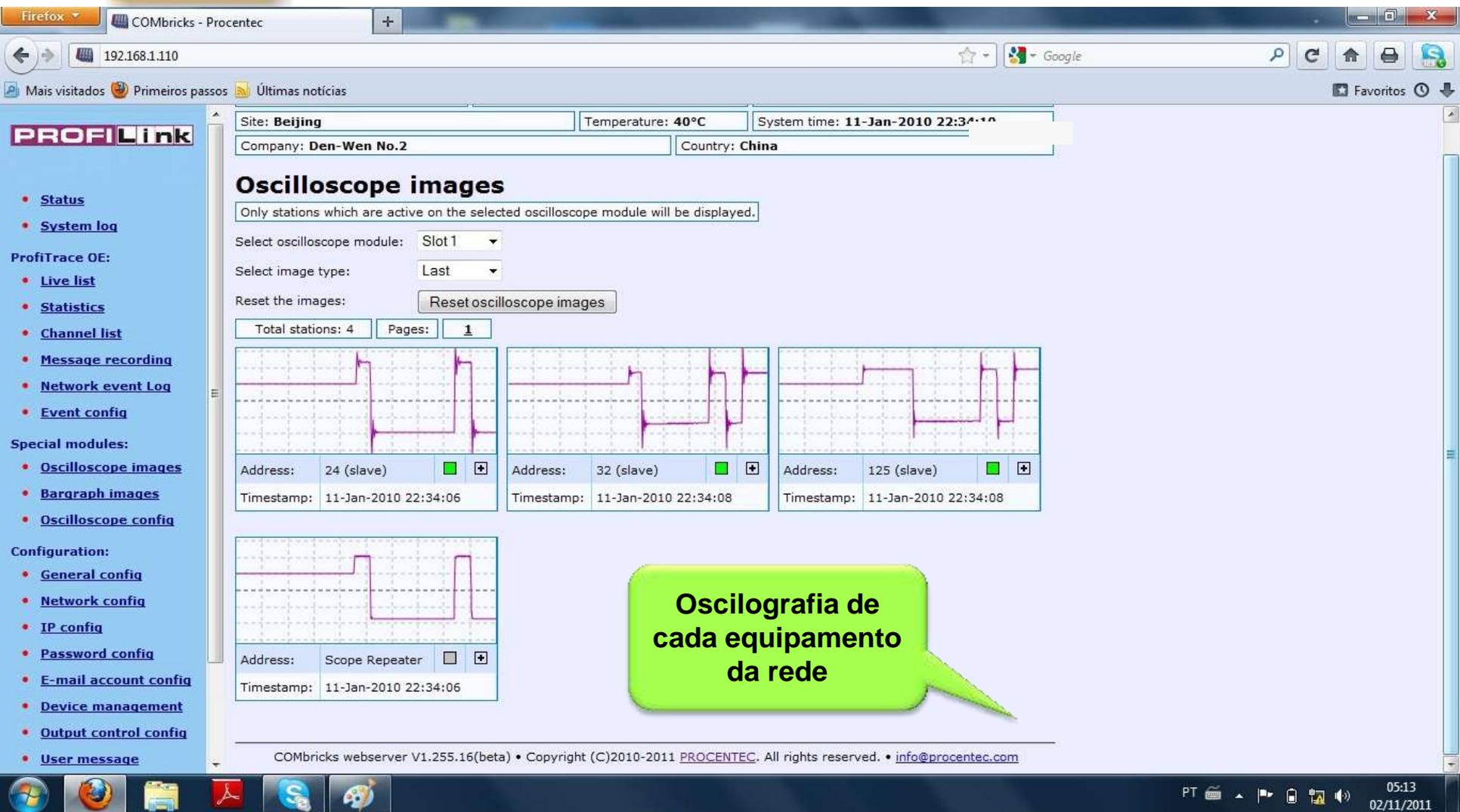
Total stations: 10



Station	Volts
0	8.02
2	6.81
3	8.02
7	8.02
12	7.97
30	7.97
31	8.02
46	8.02
58	8.02
84	7.97

Bargraph para monitoração da qualidade do sinal

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Site: **Beijing** Temperature: **40°C** System time: **11-Jan-2010 22:34:10**

Company: **Den-Wen No.2** Country: **China**

Oscilloscope images

Only stations which are active on the selected oscilloscope module will be displayed.

Select oscilloscope module: Slot 1

Select image type: Last

Reset the images:

Total stations: 4 Pages: 1

		
Address: 24 (slave) <input checked="" type="checkbox"/> <input data-bbox="614 835 637 852" type="button" value="+"/>	Address: 32 (slave) <input checked="" type="checkbox"/> <input data-bbox="981 835 1004 852" type="button" value="+"/>	Address: 125 (slave) <input checked="" type="checkbox"/> <input data-bbox="1348 835 1371 852" type="button" value="+"/>
Timestamp: 11-Jan-2010 22:34:06	Timestamp: 11-Jan-2010 22:34:08	Timestamp: 11-Jan-2010 22:34:08


Address: Scope Repeater <input type="checkbox"/> <input data-bbox="614 1085 637 1102" type="button" value="+"/>
Timestamp: 11-Jan-2010 22:34:06

Oscilografia de cada equipamento da rede

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Firefox - COMbricks - Procentec | 192.168.1.110

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[Status](#)
[System log](#)
 ProfiTrace OE:
[Live list](#)
[Statistics](#)
[Channel list](#)
[Message recording](#)
[Network event Log](#)
[Event config](#)
 Special modules:
[Oscilloscope images](#)
[Bargraph images](#)
[Oscilloscope config](#)
 Configuration:
[General config](#)
[Network config](#)
[IP config](#)
[Password config](#)
[E-mail account config](#)
[Device management](#)
[Output control config](#)
[User message](#)
[Update license](#)
[Downloads](#)

IP address: 192.168.1.110 | MAC address: 9C:B2:06:00:02:0C | System uptime: 0 days, 6:21:07
 Site: Beijing | Temperature: 40°C | System time: 11-Jan-2010 22:37:14
 Company: Den-Wen No.2 | Country: China

Output control

Control	Slot/module	I/O Point	Current state	Action	
1	Headstation relay 24V/0.25A	Rel 0	Off	On event	Station lost Network 1 (Network 1) Active high pulse Pulse hold time (sec): 1
2	None	None	Unknown	None	
3	None	None	Unknown	None	
4	None	None	Unknown	None	
5	None	None	Unknown	None	
6	None	None	Unknown	None	
7	None	None	Unknown	None	
8	None	None	Unknown	None	
9	None	None	Unknown	None	
10	None	None	Unknown	None	

Save

Not logged in.

05:17 02/11/2011

Saídas para interveção/alarme



Webserver: Configuração de Eventos

PROFI-Link - WESTCON - Windows Internet Explorer
 http://192.168.1.230/
 Favorites: PROFI-Link - WESTCON

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- [Status](#)
- [System Log](#)

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- [Live List](#)
- [Statistics](#)
- [Message recording](#)
- [Network event Log](#)

Configuration:

- [General config](#)
- [Device management](#)
- [IP config](#)
- [Password config](#)
- [Network config](#)
- [E-mail account config](#)
- [User message](#)
- [Event config](#) ←
- [Update license](#)

IP address: 192.168.1.230 MAC address: 9C:82:06:00:02:18 System uptime: 0 days, 0:16:27
 Site: Boiler 5 Temperature: 33°C System time: 31-Mar-2011 21:32:12
 Company: Oil and Gas Company Count: []

Event configuration

Network 1 events	E-Mail	Log
Enable:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Station lost:	Interval <input type="checkbox"/>	Interval <input type="checkbox"/>
Syncs:	Once <input type="checkbox"/>	Interval <input type="checkbox"/>
Repeats:	Interval <input type="checkbox"/>	Interval <input type="checkbox"/>
Illegals:	Interval <input type="checkbox"/>	Interval <input type="checkbox"/>
Internal Diagnostics:	Off <input type="checkbox"/>	Interval <input type="checkbox"/>
External Diagnostics:	Once <input type="checkbox"/>	Interval <input type="checkbox"/>
Diagnostics while in DX:	Once <input type="checkbox"/>	Interval <input type="checkbox"/>
All to:	Off Once Interval	Off Once Interval
Notification interval (minutes):	15	30

Configuração de Eventos para E-mail e Log

Configuração individual por rede

Opções para Eventos:
 - Off
 - Once (1 vez)
 - Interval



Webserver: Configuração Geral

General configuration

Date & time synchronization			
Synchronize time:	PC time: 8-Apr-2011 14:13:21	time: 8-Apr-2011 14:13:21	<input type="button" value="Sync now"/>
Set time manually:	date: <input type="text" value="8"/> - <input type="text" value="4"/> - <input type="text" value="2011"/>	time: <input type="text" value="14"/> : <input type="text" value="11"/> : <input type="text" value="33"/>	<input type="button" value="Set now"/>

Date & time settings	
Time zone:	<input type="text" value="GMT +1"/>
Time display format:	<input type="text" value="24H"/>

Site info	
Company:	<input type="text" value="Oil and Gas Company"/>
Site name:	<input type="text" value="Boiler 5"/>
Country:	<input type="text" value="Alaska"/>

Display refresh	
Automatic refresh:	<input checked="" type="checkbox"/>
Update interval (seconds):	<input type="text" value="1"/>

Log save interval	
Auto save log interval (minutes):	<input type="text" value="15"/> *

Informação remota presente em todas as telas

Configurações relativas à largura de banda Ethernet

Configurações relativas à capacidade do cartão de memória

- [Status](#)
- [System Log](#)

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- [Live List](#)
- [Statistics](#)
- [Message recording](#)
- [Network event Log](#)

Configuration:

- [General config](#)
- [Device management](#)
- [IP config](#)
- [Password config](#)
- [Network config](#)
- [E-mail account config](#)
- [User message](#)
- [Event config](#)
- [Update license](#)

Not logged in.



Webserver: Configuração de E-mail

PROFI-Link - WESTCON - Windows Internet Explorer
http://192.168.1.230/
Favorites: PROFI-Link - WESTCON

PROFILink

IP address: 192.168.1.230 MAC address: 9C:82:06:00:02:18 System uptime: 0 days, 0:16:27
Site: Boiler 5 Temperature: 33°C System time: 31-Mar-2011 21:32:12
Company: Oil and Gas Company Count: []

E-mail account configuration

Account settings

To recipient E-mail address:	<input type="text" value="maintenance@oilandgas.al"/>
CC recipient E-mail address:	<input type="text" value="john@oilandgas.al; peter@oilandgas.al; sam@oilandgas.al"/>
From E-mail address:	<input type="text" value="profilink@oilandgas.al"/>
E-mail subject:	<input type="text" value="*** PROFI-Link event message***"/>
SMTP-Server address:	<input type="text" value="smtp.oilandgas.al"/>
SMTP-Server port:	<input type="text" value="25"/>
SMTP-Username and password:	<input type="checkbox"/>
SMTP-Username:	<input type="text"/>
SMTP-Password:	<input type="password"/>

*) Can contain up to 3 E-mail addresses, sep

Configurações de e-mail avançadas

Configuração do E-mail de Teste

- [Status](#)
- [System Log](#)
- ProfiTrace OE:
 - [Live List](#)
 - [Statistics](#)
 - [Message recording](#)
 - [Network event Log](#)
- Configuration:
 - [General config](#)
 - [Device management](#)
 - [IP config](#)
 - [Password config](#)
 - [Network config](#)
 - [E-mail account config](#)
 - [User message](#)
 - [Event config](#)
 - [Update license](#)

OBRIGADO !

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Diretor da área de Instalação de redes

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