

Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

# הטכנולוגיה בשירות התעשייה

תקשורת דיגיטלית: התועלת הכלכלית ליצרן  
תועלת תפעולית ומקצועית לאנשי הייצור, התהליך והשירות

21/10/2014

Tzvi Ben Yosef

# תקשורת דיגיטאלית מערכת Fieldbus

המשימה הבסיסית של מערכת Fieldbus היא להחליף מידע :

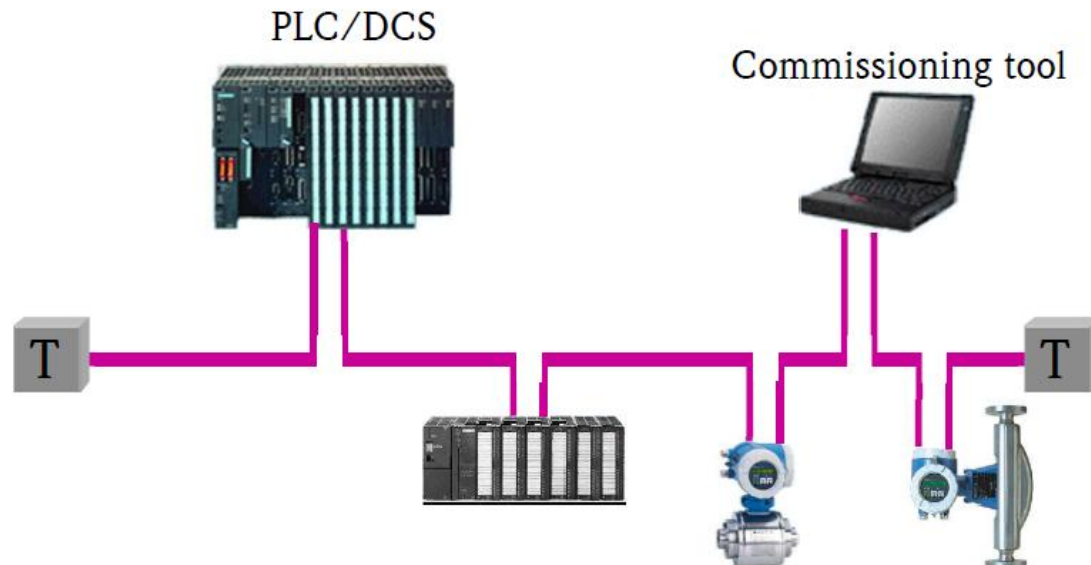
בדרך דיגיטאלית

עם פחות חיווט (שלא כמו בחיבורים של נקודה לנקודה)

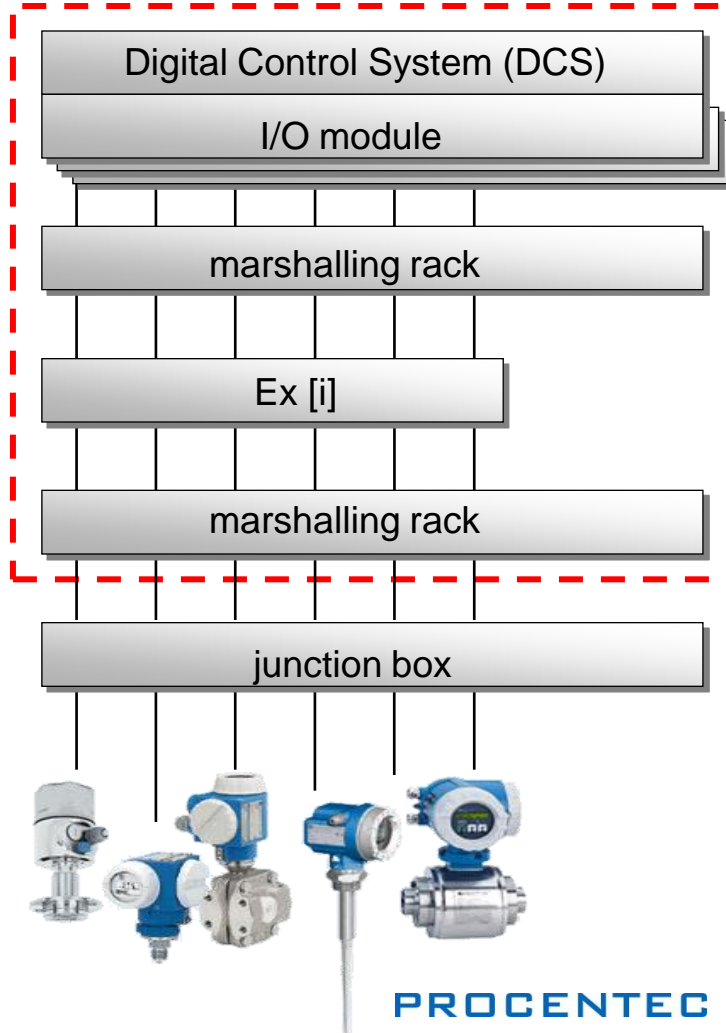
עם קבוצה של משתתפים (מכאן השם "bus")

בדרך אמינה

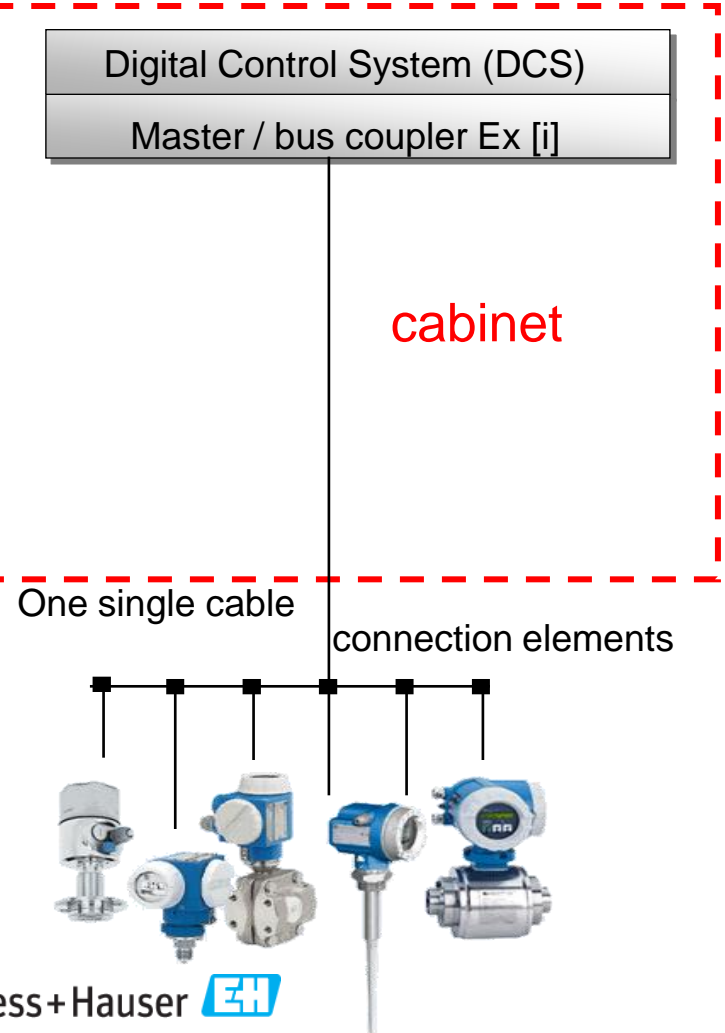
בזמן אמת



### קונבנציונלי



### PROFIBUS



■ איזה יתרונות נוספים יש למשתמש?

■ האם החסכון בעלויות מתבטא:

❖ ברכש

❖ בהנדסה

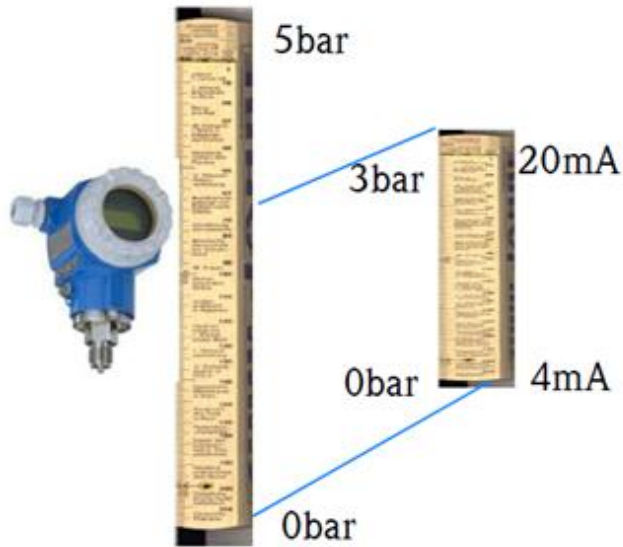
❖ בהתקנה

❖ באחזקה

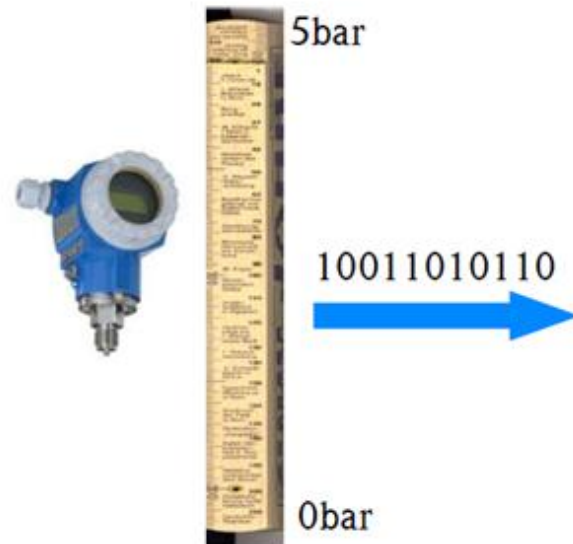
■ עבור מודרניזציה, הרחבה או השיקום של מתקני תהליך ??

■ אין צורך בקנה מידה

קונבנציונלי



דיגיטלי



Full resolution of process value over the entire range of the physical measuring range e.g. Pressure membrane 0-5 bar

■ דיוק גבוה של ערך תהליכי, ומשתנים רבים.

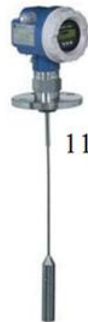


One PV per outlet, cable  
eg.  
■ Density



Several PVs over the bus  
eg.  
■ Density  
■ Temp.  
■ Flow  
■ Counter...

קונבנציונלי



11.53mA (= 5.5 meter)



דיגיטאלי



Process Value

11.53mA (= 5.532 meter)



■ תחזוקה ושינוי פרמטרים בהתקני שדה באמצעות PROFIBUS מתחנת המכשיר

קונבנציונלי



תחזוקה ושינוי פרמטרים במכשיר בשדה

דיגיטלי



תחזוקה ושינוי פרמטרים מתחנת מכשיר





- נתוני אבחון
- תקשורת דו כיוונית ( DCS /PLC > מכשיר )
- אחזקה חזויה
- מותאם אישית לאבחון
- מכשירים מציעים תחליף לערך תהליכי במקרה של כשל בהתקן



Failure



Maintenance request



Check



Out of Specification

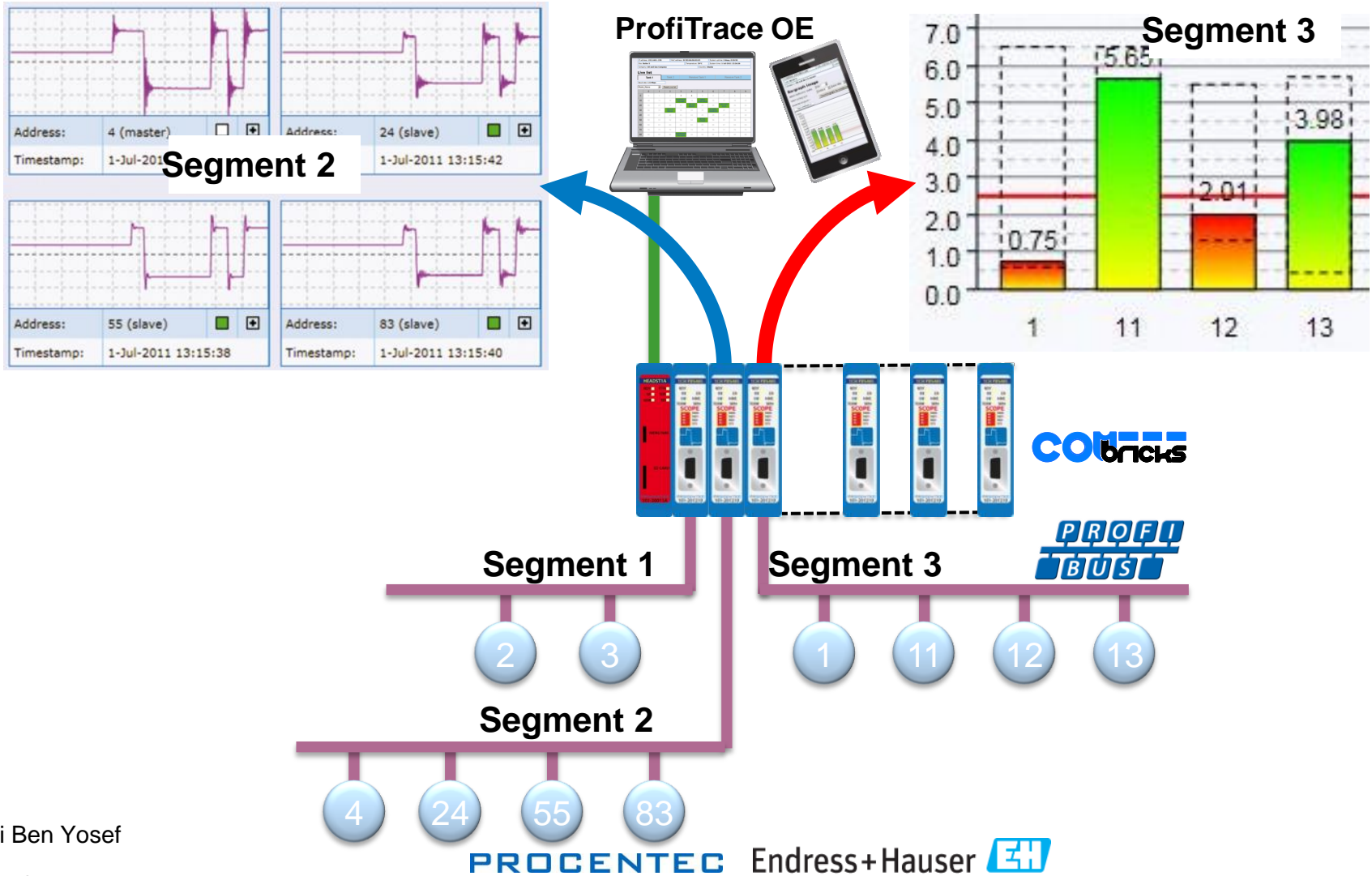


- Empty pipe detection
- Sensor drift
- Dirty pipe, please clean
- Maintenance needed
- ....





■ סריקה פיזית של ענפים ורשתות תקשורת 24/7

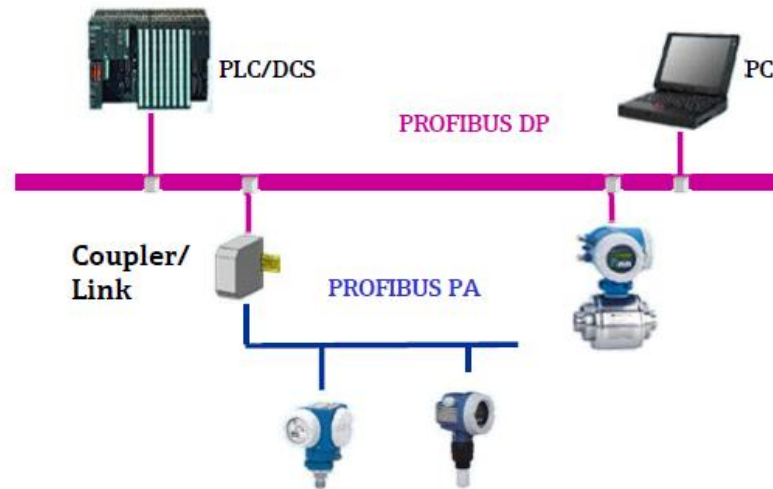


- הפחתה של מודולים I/O (עלויות רכישה)

- לא עוד לוחות חלוקה לחיבורי כבלים (עלויות רכישה)

- פחות ארונות מיתוג (עלויות רכישה)

- פחות חלל לארונות מיתוג (עלויות רכישה)



- פחות כבל (קווי בדל קצרים יותר)
- פחות ארונות מיתוג וקופסות בקרה
- פחות רכיבים מבטל אפשרויות לטעויות חיווט
- אין עלויות התקנה נוספות בעת שימוש במכשירים מרובים משתנים
- הוספת התקנים נוספים בקלות אפשרי

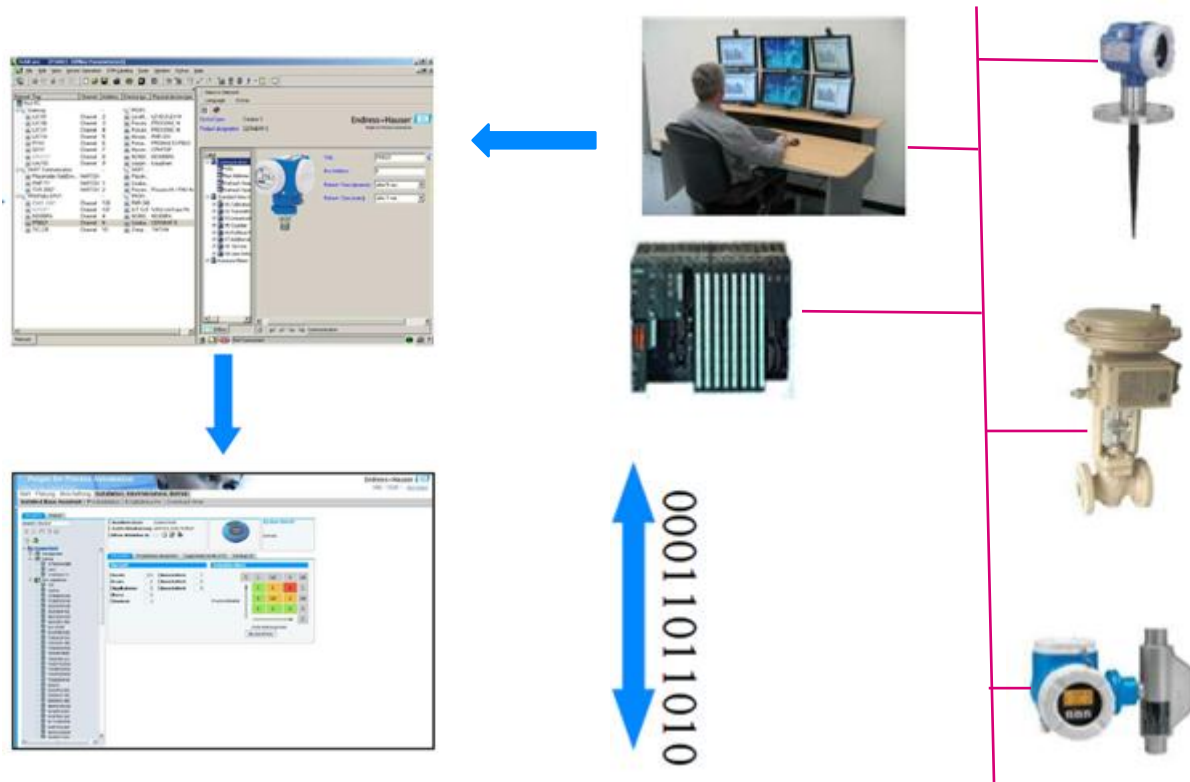


אחרי



לפני

## ניהול מפעל ומחזור החיים



- השקעות נוספות
- עלות מכשיר שדה מעט גבוהה יותר
- תצורה של מערכת Profibus בכלי תוכנה של PLC / DCS
- לבנות את הידע מבוסס על הטכנולוגיה, ההכשרה!
- כלים ספציפיים לתחזוקה ובדיקה



- רכש של פחות רכיבים
- תכנון ועיצוב באמצעות קונספט FISCO, פחות נקודות חיבור ורשת, חישובי ענפים
- התקנה וביצוע דרך פחות מרכזי I/Os ורמה גבוהה של חופש חיווט
- תחזוקה ופיקוח באמצעות שקיפות שגיאה ממערכת השליטה להתקן השדה
- השתלבות בניהול מערכות אחזקה חזויה מקטינה את זמן ההשבתה במפעל

# הלכה למעשה במפעל תעשייתי



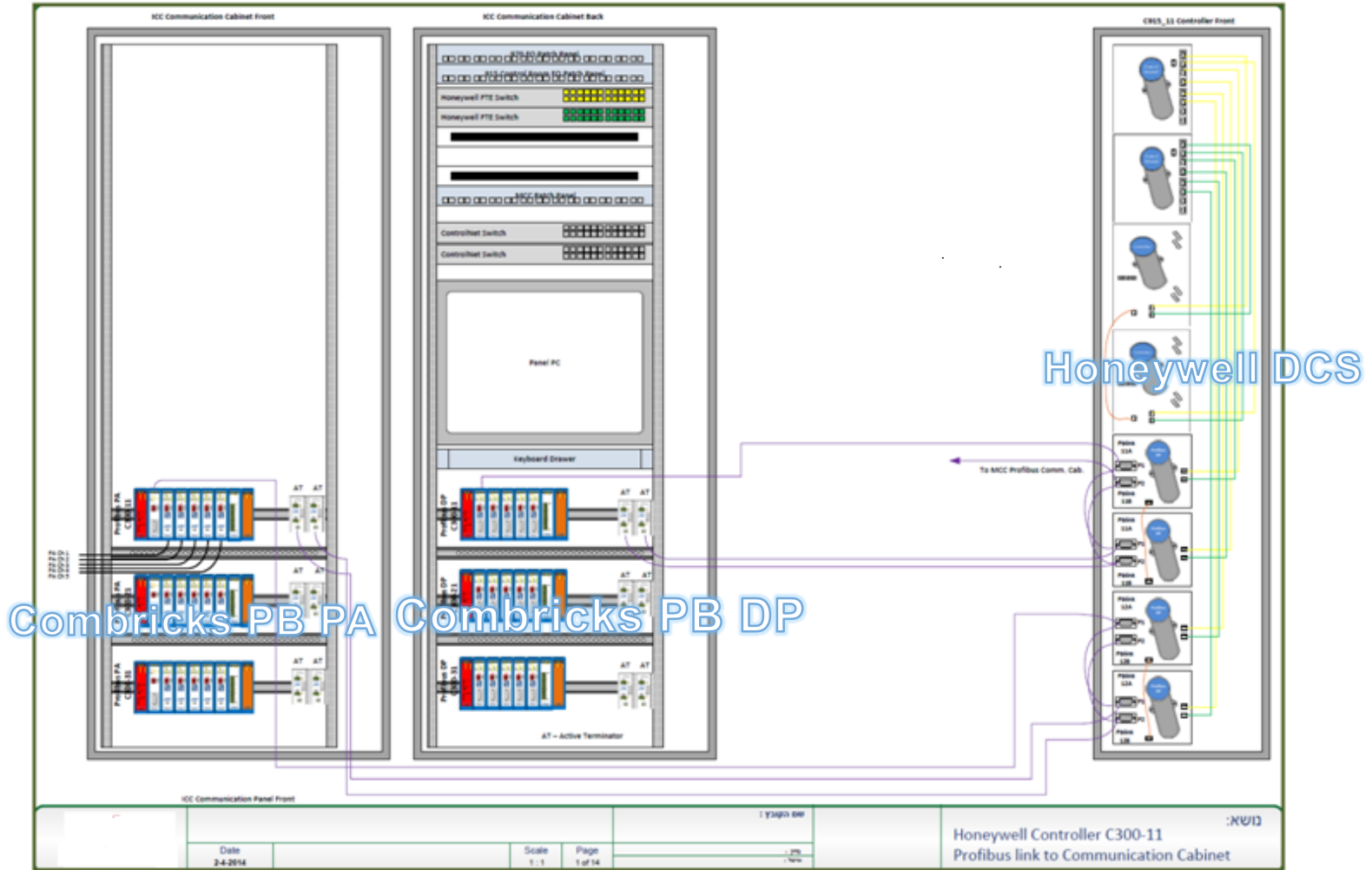
# מה נדרש מפרויקט בתקשורת דיגיטאלית על מנת שיהיה מוצלח?



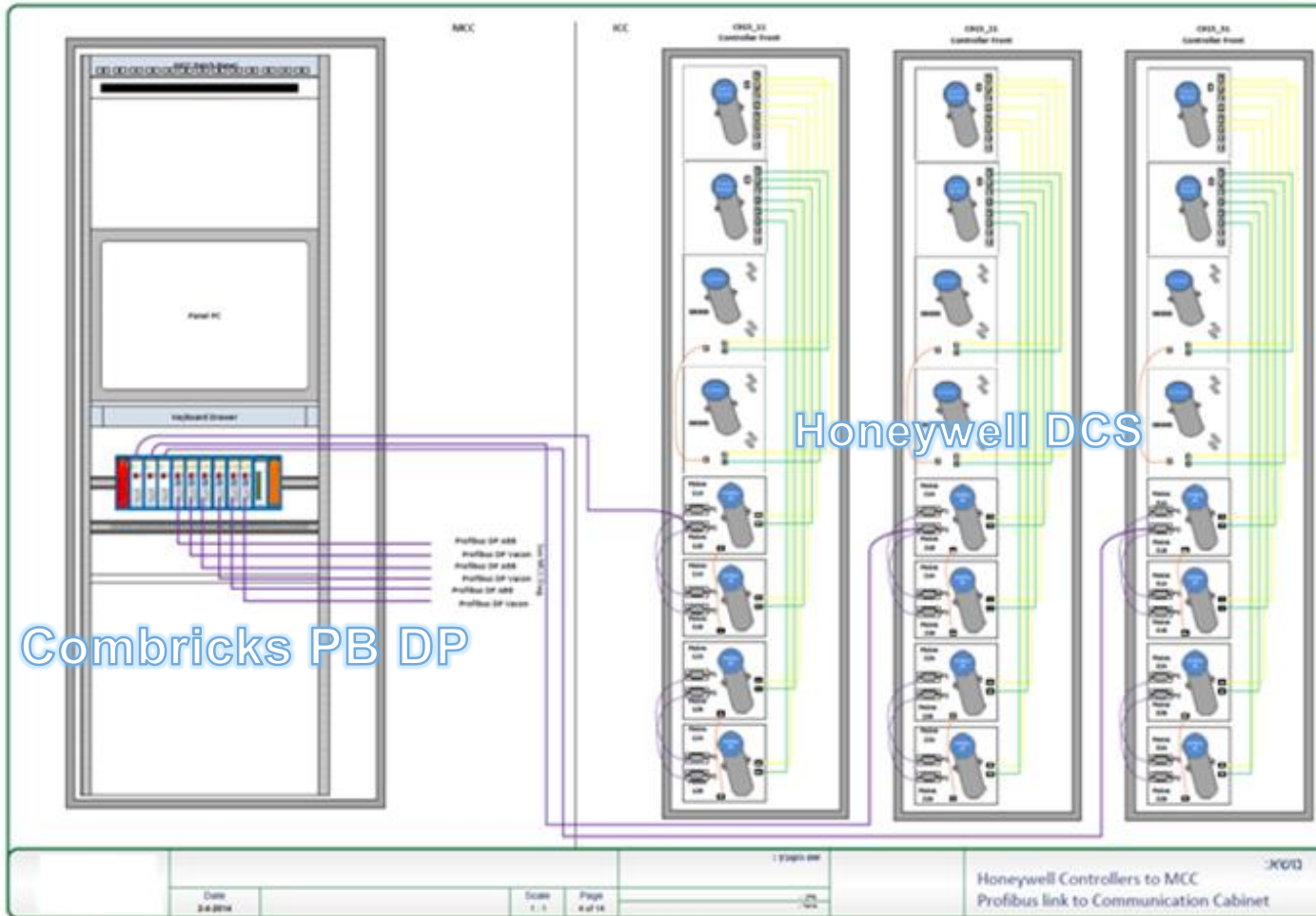
- תכנון הנדסי נכון
- ביצוע עפ"י התכנון מלווה בפיקוח צמוד
- הדרכת עובדים עבור הטכנולוגיה
- הספקת כלים מתאימים עבור דיאגנוסטיקה ואחזקה

# חדר ICC

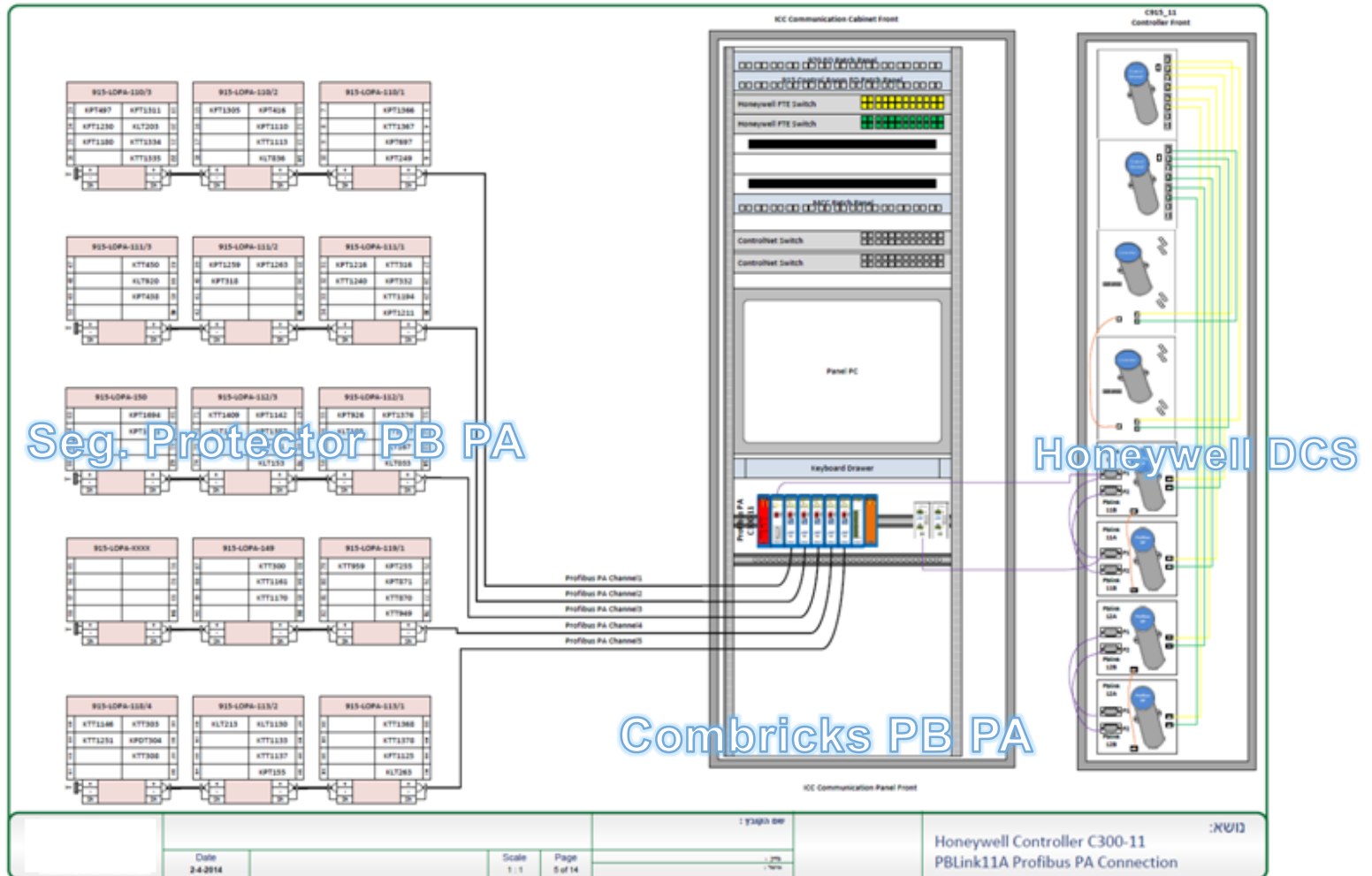
## שש מערכות Combricks עבור מכשור PB PA ו-DP



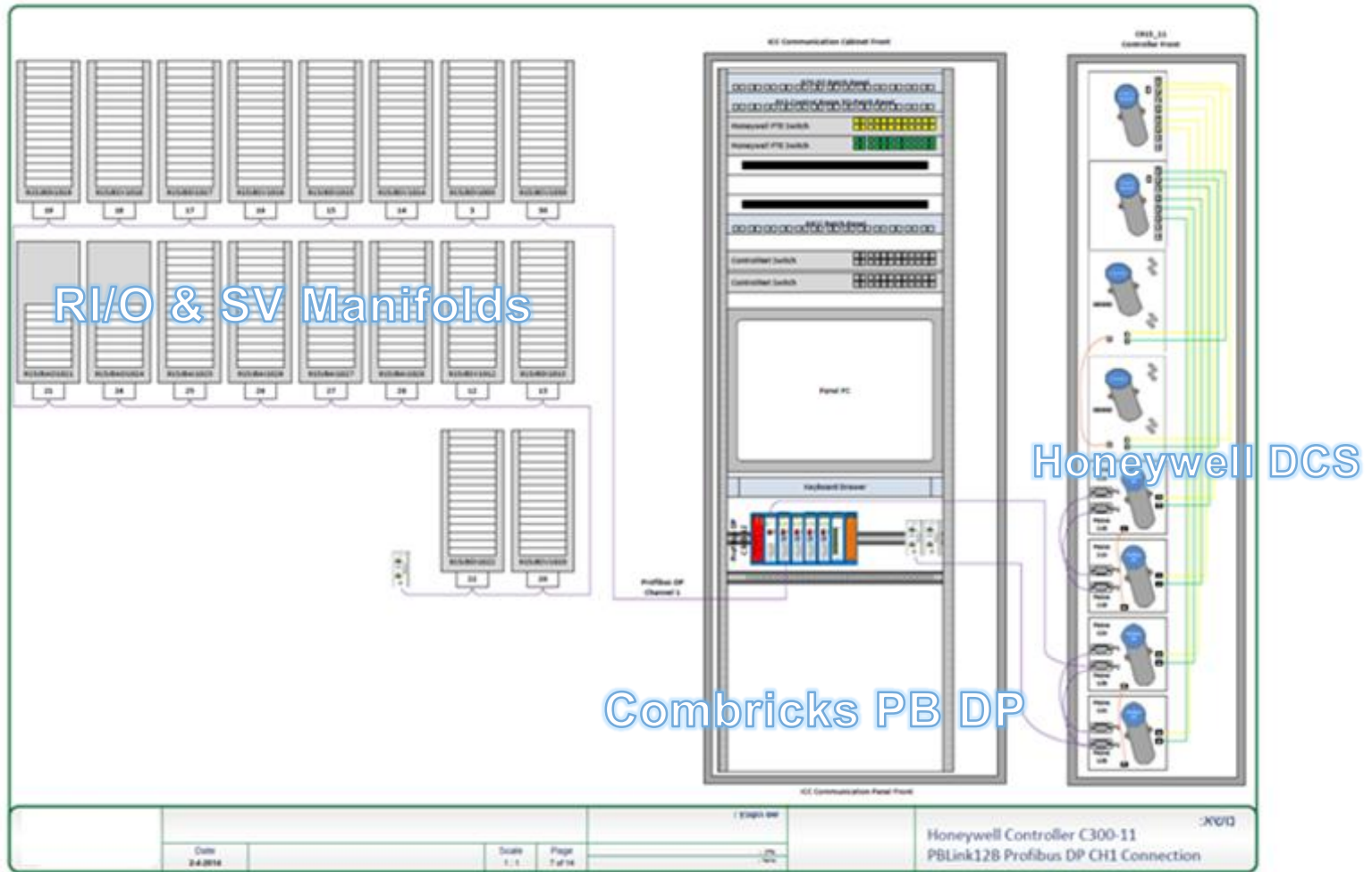
# חדר MCC מערכת Combricks עבור ציוד חשמל PB DP



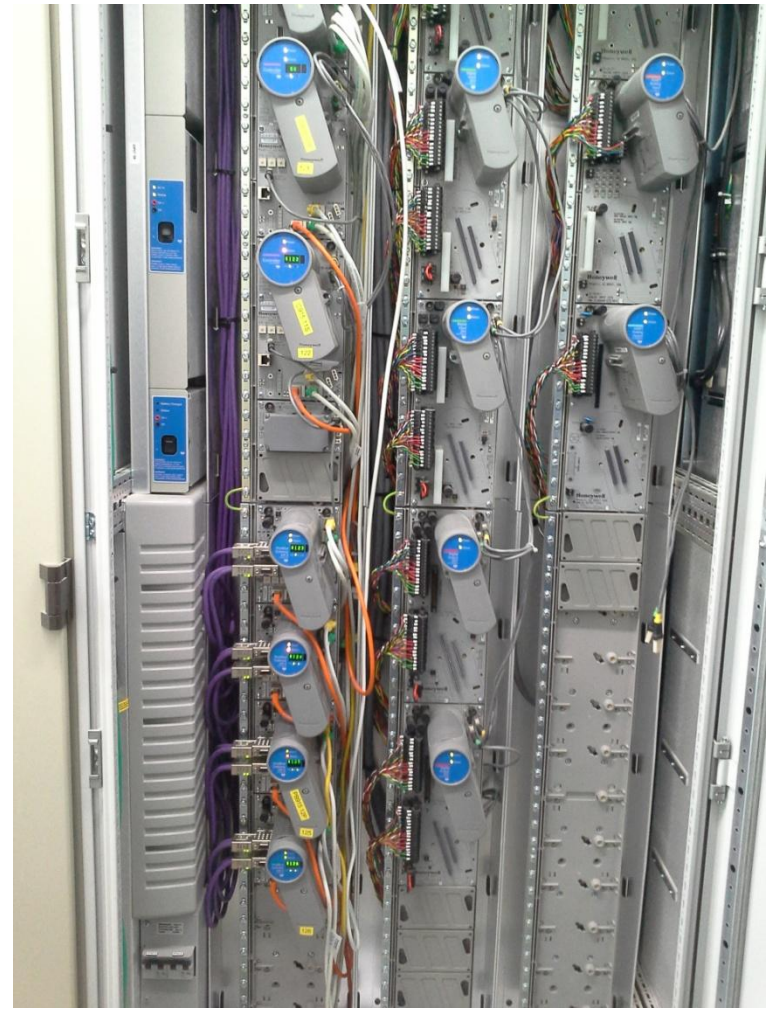
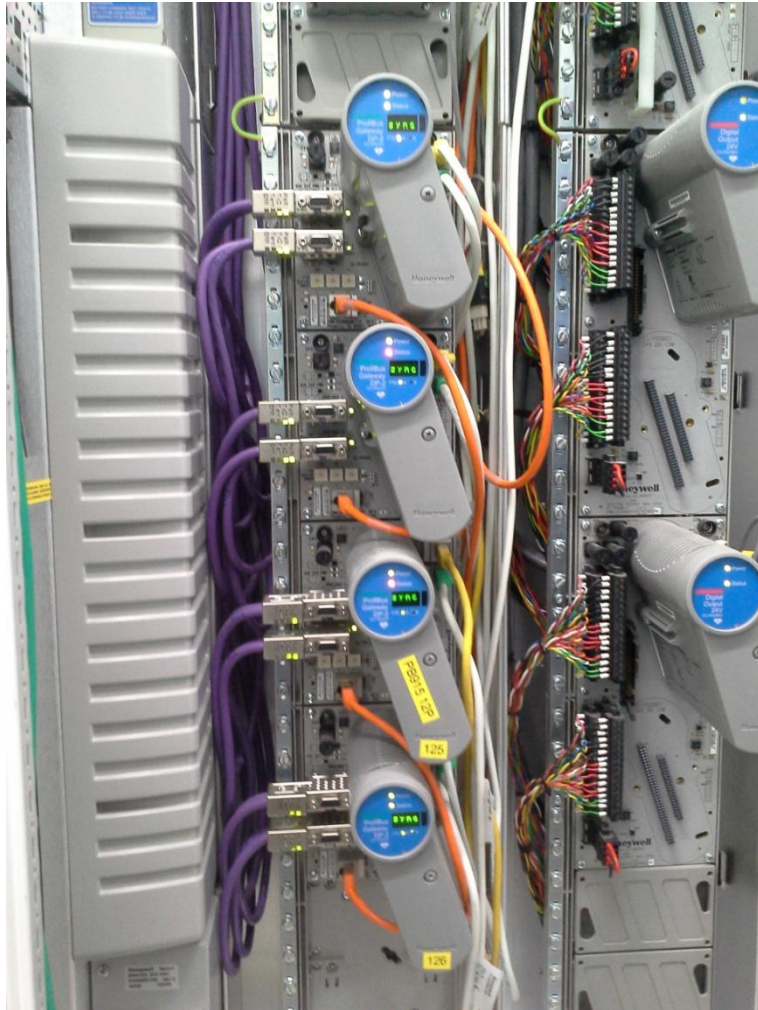
# מערכת Combricks PB 11A חמישה ענפים המחוברים למכשירי PB PA באמצעות Segment Protector



# Combricks PB 12B מערכת ארבעה ענפים המחוברים למכשירים PB DP



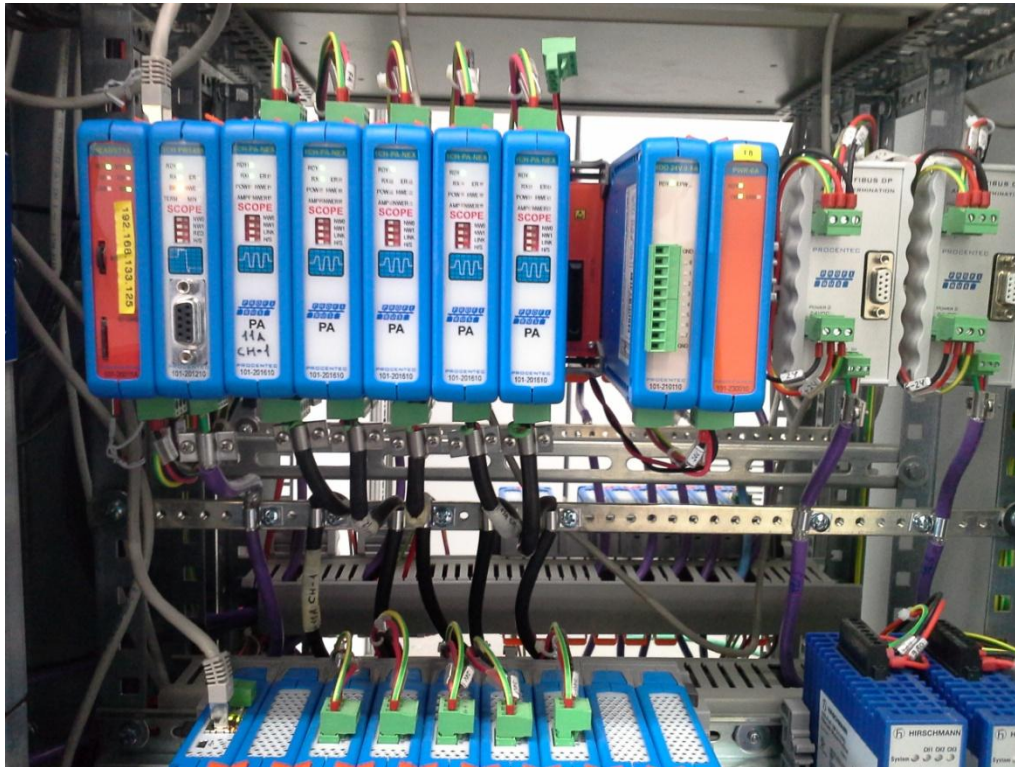




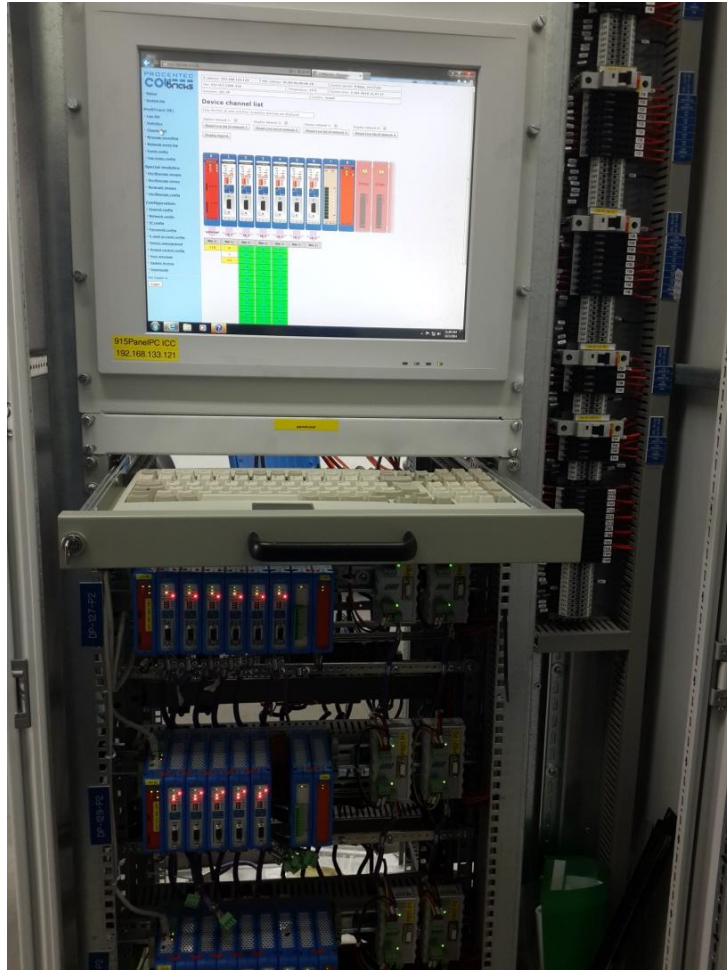


# מערכות PB PA Combricks

## 15 ענפים המחוברים למכשירים PB PA

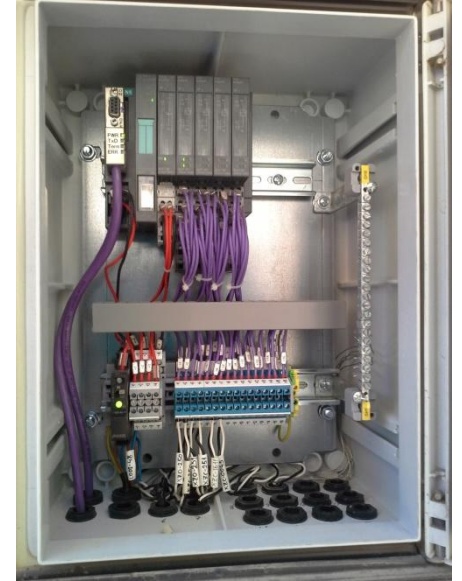






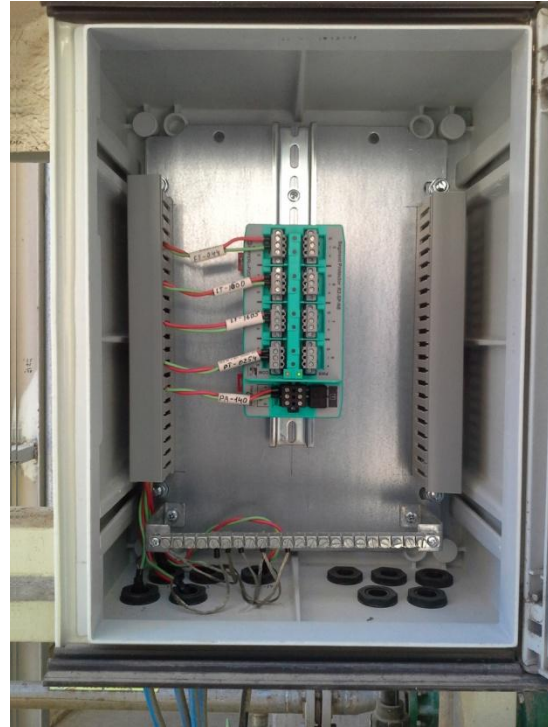


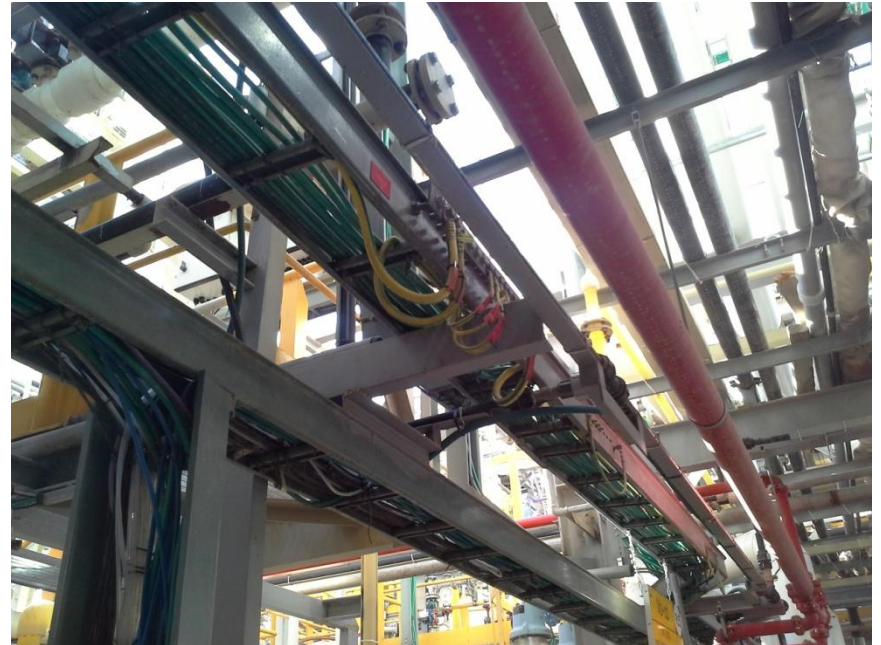
# התקנות PB DP במתקן

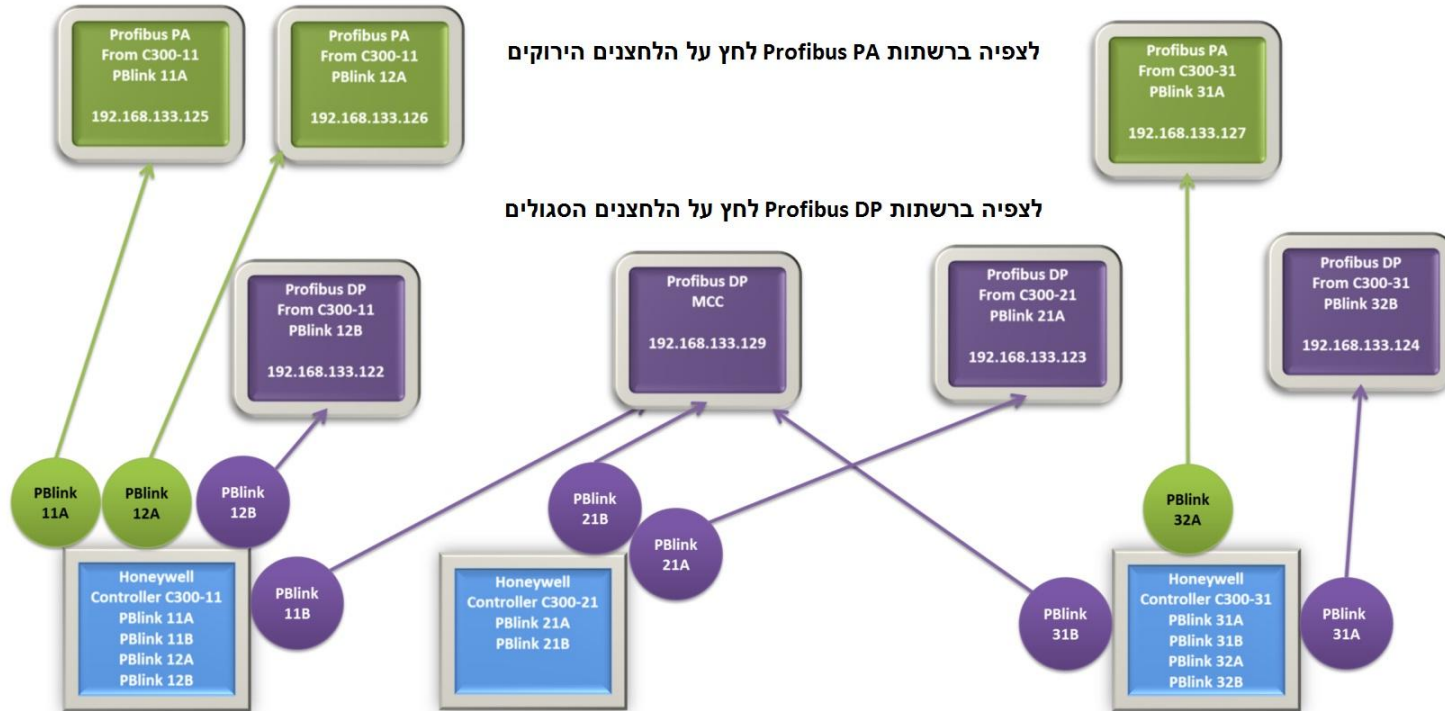




# התקנות PA PB במתקן







# Combricks PB DP 12B

## Live list



- Status
- System log
- ProfiTrace OE:
- Live list
- Statistics
- Channel list
- Message recording
- Network event log
- Event config
- Tag-name config
- Special modules:
- Oscilloscope images
- Oscilloscope errors
- Barograph 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

Not logged in.

IP address: 192.168.133.122	MAC address: 9C:B2:06:00:05:63	System uptime: 14 days, 18:34:38
Site: ICC C300-12B DP	Temperature: 37°C	System time: 22-Oct-2014 10:06:37
Company:	Country: Israel	

### Live list

Network 1
Network 2
Network 3
Network 4

Baudrate: 500 Kbps

Display legend    Model\_Name   

	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	13	14	15	16	17	18	19
20	20	21	22	23	24	25	26	27	28	29
30	30	31	32	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
90	90	91	92	93	94	95	96	97	98	99
100	100	101	102	103	104	105	106	107	108	109
110	110	111	112	113	114	115	116	117	118	119
120	120	121	122	123	124	125	126			

COMbricks webservice V1.283 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • info@procentec.com



# Combricks PB DP 12B Device Channel list

**PROCENTEC**  
**COMBRICKS**

- Status
- System log
- ProfiTrace OE:**
- Live list
- Statistics
- Channel list
- Message recording
- Network event log
- Event config
- Tag-name config
- Special modules:**
- Oscilloscope images
- Oscilloscope errors
- Barograph 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

Not logged in.

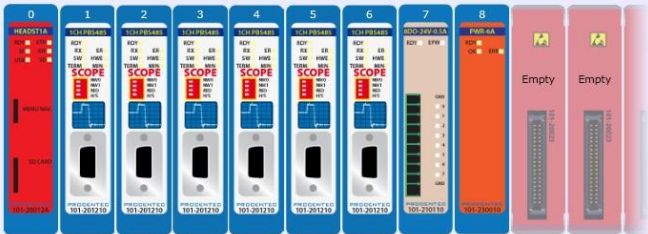
IP address: 192.168.133.122	MAC address: 9C:B2:06:00:05:63	System uptime: 14 days, 18:35:51
Site: ICC C300-12B DP	Temperature: 37°C	System time: 22-Oct-2014 10:07:51
Company:	Country: Israel	

### Device channel list

Only the first 10 slots and their respective channels are displayed.

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



	ch 1	ch 1	ch 1	ch 1	ch 1	ch 1
Nw 1:	Nw 1:	Nw 1:	Nw 1:	Nw 1:	Nw 1:	Nw 1:
0	3	4	9	37	101	
1	12	5	10	38		
	13	6	11	91		
	14	7	23	92		
	15	8	61	93		
	16	31	62	94		
	17	32	63	95		
	18	33	64	96		
	19	34	65	97		
	20	35	66			
	21	36	67			
	22	45	68			
	24	46	69			
	25	49	70			
	26	50	79			
	27	51	80			
	28	52	81			
	30	53	82			
		54	83			
		55				
		56				
		59				

# Combricks PB DP 12B

## Bargraph image

**PROCENTEC**  
**COMBRICKS**

IP address: 192.168.133.122    MAC address: 9C:B2:06:00:05:63    System uptime: 14 days, 18:38:26  
Site: ICC C300-12B DP    Temperature: 37°C    System time: 22-Oct-2014 10:10:26  
Company:    Country: Israel

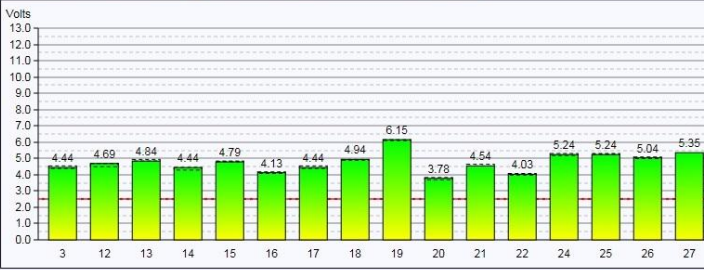
### Bargraph image

Select oscilloscope module: Slot 2

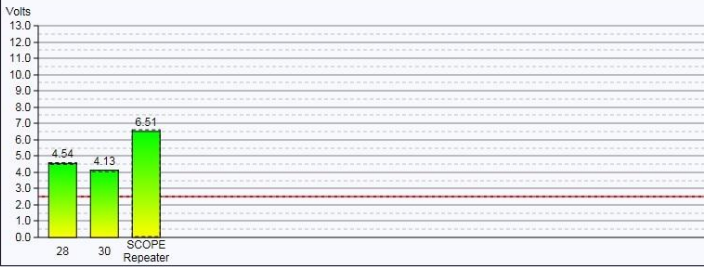
Select sorting type: Address    Ascending    Normal sort order

Reset the bargraph:

Total stations: 19    Measurement method: AB Diff stable voltage



Station	Voltage (Volts)
3	4.44
12	4.69
13	4.84
14	4.44
15	4.79
16	4.13
17	4.44
18	4.94
19	6.15
20	3.78
21	4.54
22	4.03
24	5.24
25	5.24
26	5.04
27	6.36



Station	Voltage (Volts)
28	4.54
30	4.13
SCOPE Repeater	6.51

COMbricks webserver V1.283 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • info@procentec.com

# Combricks PB PA 11A

## Live list



**PROCENTEC**  
**COMbricks**

- Status
- System log
- ProfiTrace OE:
  - [Live list](#)
  - [Statistics](#)
  - [Channel list](#)
  - [Message recording](#)
  - [Network event log](#)
  - [Event config](#)
  - [Tag-name config](#)
- Special modules:
  - [Oscilloscope images](#)
  - [Oscilloscope errors](#)
  - [Barograph images](#)
  - [PA measurements](#)
  - [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](#)

Not logged in.

IP address: 192.168.133.125		MAC address: 9C:B2:06:00:07:E3		System uptime: 14 days, 18:20:07	
Site: ICC C300-11A PA		Temperature: 36°C		System time: 22-Oct-2014 9:51:21	
Company:			Country: Israel		

**Live list**

	Network 1			Network 2			Network 3			Network 4		
Baudrate: 500 Kbps												
Display legend		Model Name		<input type="button" value="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	13	14	15	16	17	18	19		
20	20	21	22	23	24	25	26	27	28	29		
30	30	31	32	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		
90	90	91	92	93	94	95	96	97	98	99		
100	100	101	102	103	104	105	106	107	108	109		
110	110	111	112	113	114	115	116	117	118	119		
120	120	121	122	123	124	125	126					

COMbricks webservice V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • info@procentec.com

# Combricks PB PA 11A Device Channel list



**PROCENTEC**  
**COMBRICKS**

- Status
- System log

**ProfiTrace OE:**

- Live list
- Statistics
- Channel list
- Message recording
- Network event log
- Event config
- Tag-name config

**Special modules:**

- Oscilloscope images
- Oscilloscope errors
- Barograph images
- PA measurements
- 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

Not logged in.

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:18:31
Site: ICC C300-11A PA	Temperature: 36°C	System time: 22-Oct-2014 9:49:44
Company:	Country: Israel	

### Device channel list

Only the first 10 slots and their respective channels are displayed.

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

ch 1	ch 1	ch 1	ch 1	ch 1	ch 1
Nw 1:	Nw 1:	Nw 1:	Nw 1:	Nw 1:	Nw 1:
0	3	27	52	77	99
1	4	28	53	80	100
	5	29	54	84	101
	6	30	55	85	103
	7	31	56		107
	8	32	57		108
	11	33	59		109
	12	34	60		110
	13	35	62		111
	14	36	63		112
	19	39	64		115
	20	43	67		117
	21	44	68		119
	22	45	69		120
	23	47	70		
	24		71		
	25		72		
	26				

# Combricks PB PA 11A Honeywell Masters One Bargraph image



**PROCENTEC COMBRICKS**

- Status
- System log

**ProfiTrace OE:**

- Live list
- Statistics
- Channel list
- Message recording
- Network event log
- Event config
- Tag-name config

**Special modules:**

- Oscilloscope images
- Oscilloscope errors
- Bargraph images
- PA measurements
- 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

Not logged in.

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:21:15
Site: ICC C300-11A PA	Temperature: 36°C	System time: 22-Oct-2014 9:52:29
Company:	Country: Israel	

### Bargraph image

Select oscilloscope module:

Select sorting type:

Reset the bargraph:

Total stations: 3      Measurement method: AB Diff stable voltage

SCOPE Repeater	Volts
0	7.06
1	7.01
SCOPE	6.81

COMbricks webservice V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • [info@procentec.com](mailto:info@procentec.com)

# Combricks PB DP 11A-Slot 2 Bargraph image



**PROCENTEC**  
**COMbricks**

- [Status](#)
- [System log](#)
- ProfiTrace OE:**
- [Live list](#)
- [Statistics](#)
- [Channel list](#)
- [Message recording](#)
- [Network event log](#)
- [Event config](#)
- [Tag-name config](#)
- Special modules:**
- [Oscilloscope images](#)
- [Oscilloscope errors](#)
- [Bargraph images](#)
- [PA measurements](#)
- [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](#)

Not logged in.

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:22:38
Site: ICC C300-11A PA	Temperature: 36°C	System time: 22-Oct-2014 9:53:51
Company:		Country: Israel

### Bargraph image

Select oscilloscope module:

Select sorting type:

Reset the bargraph:

Total stations: 19      Measurement method: PA Signal level

Station	Signal Level (Volts)
3	0.73
4	0.73
5	0.68
6	0.70
7	0.73
8	0.73
11	0.73
12	0.73
13	0.73
14	0.72
19	0.68
20	0.74
21	0.72
22	0.75
23	0.73
24	0.69

Station	Signal Level (Volts)
25	0.67
26	0.70
SCOPE Repeater	0.75

COMbricks webservice V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • [info@procentec.com](mailto:info@procentec.com)



# Combricks PB PA 11A Honeywell Masters 1 Oscilloscope image



**PROCENTEC COMBRICKS**

- Status
- System log

**ProfiTrace OE:**

- Live list
- Statistics
- Channel list
- Message recording
- Network event log
- Event config
- Tag-name config

**Special modules:**

- Oscilloscope images
- Oscilloscope errors
- Bargraph images
- PA measurements
- 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

Not logged in.

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:26:50
Site: ICC C300-11A PA	Temperature: 37°C	System time: 22-Oct-2014 9:58:03
Company:	Country: Israel	

### 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: 3      Measurement method: AB Diff stable voltage

Pages: 1

 Address: 0 (master) <input type="checkbox"/> <input type="button" value="x"/> Timestamp: 22-Oct-2014 9:57:58	 Address: 1 (master) <input type="checkbox"/> <input type="button" value="x"/> Timestamp: 22-Oct-2014 9:58:00	 Address: SCOPE Repeater <input type="checkbox"/> <input type="button" value="x"/> Timestamp: 22-Oct-2014 9:58:02
---	---	---

COMbricks webservice V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • [info@procentec.com](mailto:info@procentec.com)

# Combricks PB PA 11A

## Honeywell Master 1 Oscilloscope image

### Idle Voltage

**PROCENTEC**  
**COMBRICKS**

- Status
- System log
- ProfiTrace OE:
  - Live list
  - Statistics
  - Channel list
  - Message recording
  - Network event log
  - Event config
  - Tag-name config
- Special modules:
  - Oscilloscope images
  - Oscilloscope errors
  - Barograph images
  - PA measurements
  - 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

Not logged in.

Login

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:25:08
Site: ICC C300-11A PA	Temperature: 37°C	System time: 22-Oct-2014 9:56:22
Company:	Country: Israel	

### Oscilloscope image

Select image type: Last

Reset the images: Reset oscilloscope images

Measurement method: AB Diff stable voltage

Volts Freeze Module 1, Address 0 2.5us/div



The oscilloscope image displays a square wave signal. The vertical axis is labeled 'Volts' and ranges from -6.0 to 6.0. The horizontal axis is labeled '2.5us/div'. The signal is centered around 0V, with a peak-to-peak amplitude of approximately 2V, indicated by a blue circle and the text '+/- 1V'. The signal is labeled 'Module 1, Address 0'.

COMbricks webserver V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • info@procentec.com



# Combricks PB PA 11A-Slot 2 Oscilloscope image



**PROCENTEC Combricks**

IP address: 192.168.133.125    MAC address: 9C:82:06:00:07:E3    System uptime: 0 days, 3:13:13  
Site: ICC C300-11A PA    Temperature: 32°C    System time: 2-Oct-2014 12:36:29  
Company:    Country: Israel

### Oscilloscope images

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

Select oscilloscope module: **Slot 2** ▼  
Select image type: **Last** ▼  
Reset the images: **Reset oscilloscope images**

Total stations: 20    Measurement method: RA Signal level

Pages: 1 2 3

 Address: 3 (slave)    Timestamp: 2-Oct-2014 12:36:22	 Address: 4 (slave)    Timestamp: 2-Oct-2014 12:36:22	 Address: 5 (slave)    Timestamp: 2-Oct-2014 12:36:24
 Address: 6 (slave)    Timestamp: 2-Oct-2014 12:36:24	 Address: 7 (slave)    Timestamp: 2-Oct-2014 12:36:26	 Address: 8 (slave)    Timestamp: 2-Oct-2014 12:36:26
 Address: 9 (slave)    Timestamp: 2-Oct-2014 12:36:26	 Address: 11 (slave)    Timestamp: 2-Oct-2014 12:36:20	 Address: 12 (slave)    Timestamp: 2-Oct-2014 12:36:20

# Combricks PB PA 11A-Slot 4 PA Oscilloscope module status



**PROCENTEC**  
**COMBRICKS**

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

**ProfiTrace OE:**

- [Live list](#)
- [Statistics](#)
- [Channel list](#)
- [Message recording](#)
- [Network event log](#)
- [Event config](#)
- [Tag-name config](#)

**Special modules:**

- [Oscilloscope images](#)
- [Oscilloscope errors](#)
- [Barograph images](#)
- [PA measurements](#)
- [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](#)

Not logged in.

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:29:20
Site: ICC C300-11A PA	Temperature: 37°C	System time: 22-Oct-2014 10:00:34
Company:	Country: Israel	

### PA Oscilloscope module status

Module info	
Slot:	4
Vendor:	PROCENTEC
Module type:	1 Channel PA-coupler 500mA Type 1
Serial number:	000637
Software revision:	V2.10.3
Hardware revision:	V1.4
Module status:	OK
Number of channels:	1
Link to oscilloscope images page:	<a href="#">Click here</a>
Link to oscilloscope error images page:	<a href="#">Click here</a>

Link config	
Link function:	Off
Watchdog:	<input type="text" value="User defined"/>
Watchdog value (ms):	<input type="text" value="3000"/>
Retries:	<input type="text" value="5"/>

Channel 1	
Network:	1 (Network 1)
Baudrate:	500 Kbps
Station count active on channel:	17
Link function:	Off
Setting:	Dipswitch
DC voltage:	22.31 V
DC plus:	-1.65 V
DC min:	-23.96 V
DC noise:	38 mV
DC unbalance:	94 %
Current consumption:	253 mA

COMbricks webserver V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • [info@procentec.com](mailto:info@procentec.com)

# Combricks PB PA 11A-Slot 2 PA Device measurements



**PROCENTEC COMbricks**

- Status
- System log
- ProfTrace OE:
  - Live list
  - Statistics
  - Channel list
  - Message recording
  - Network event log
  - Event config
  - Tag-name config
- Special modules:
  - Oscilloscope images
  - Oscilloscope errors
  - Bargraph images
  - PA measurements
  - 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

Not logged in.

IP address: 192.168.133.125	MAC address: 9C:B2:06:00:07:E3	System uptime: 14 days, 18:28:08
Site: ICC C300-11A PA	Temperature: 36°C	System time: 22-Oct-2014 9:59:21
Company:	Country: Israel	

### PA measurements

Select oscilloscope module: Slot 2

Select station address: SCOPE Repeater

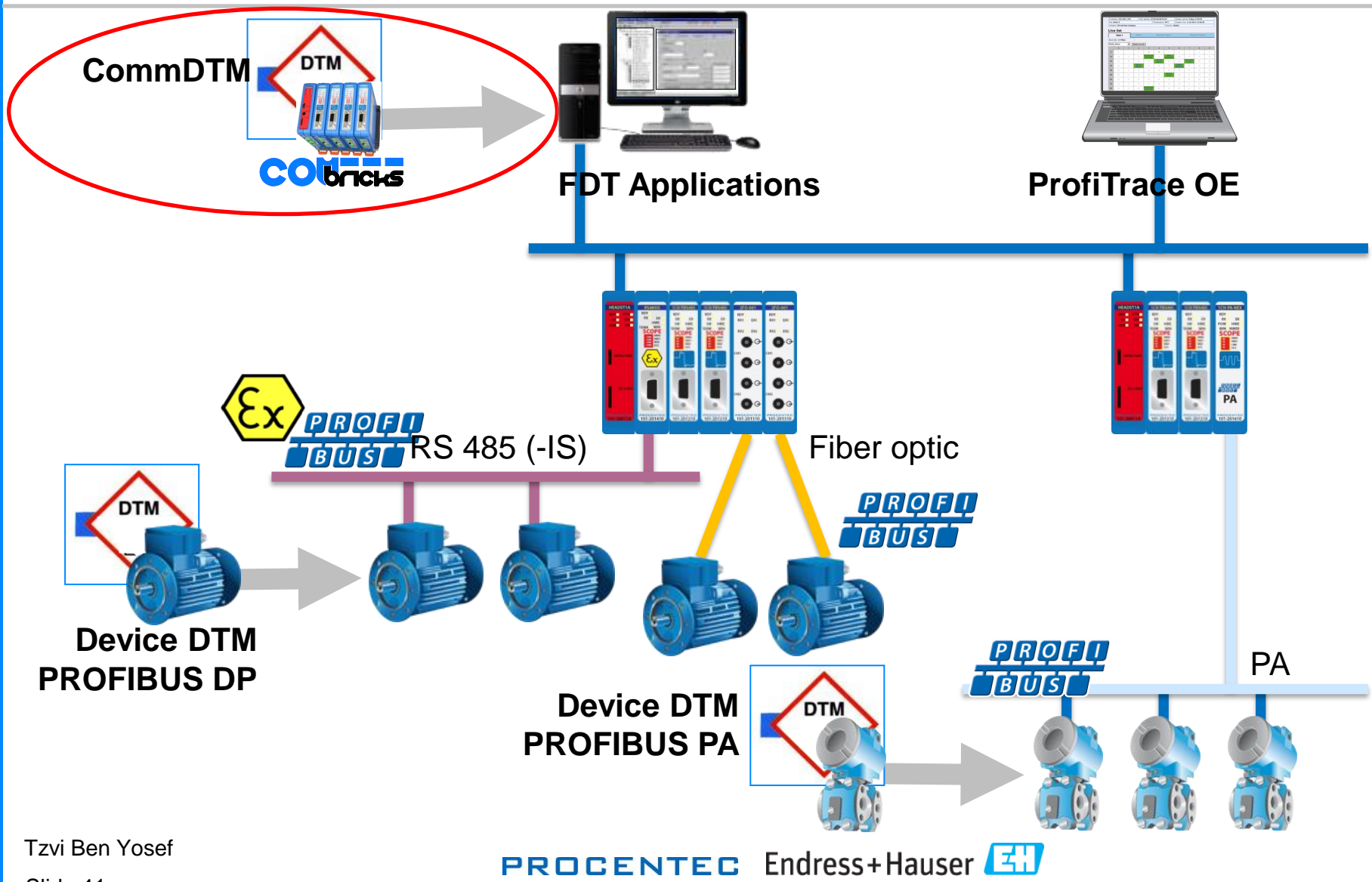
DC noise: 23 mV

Amplitude: 737 mV

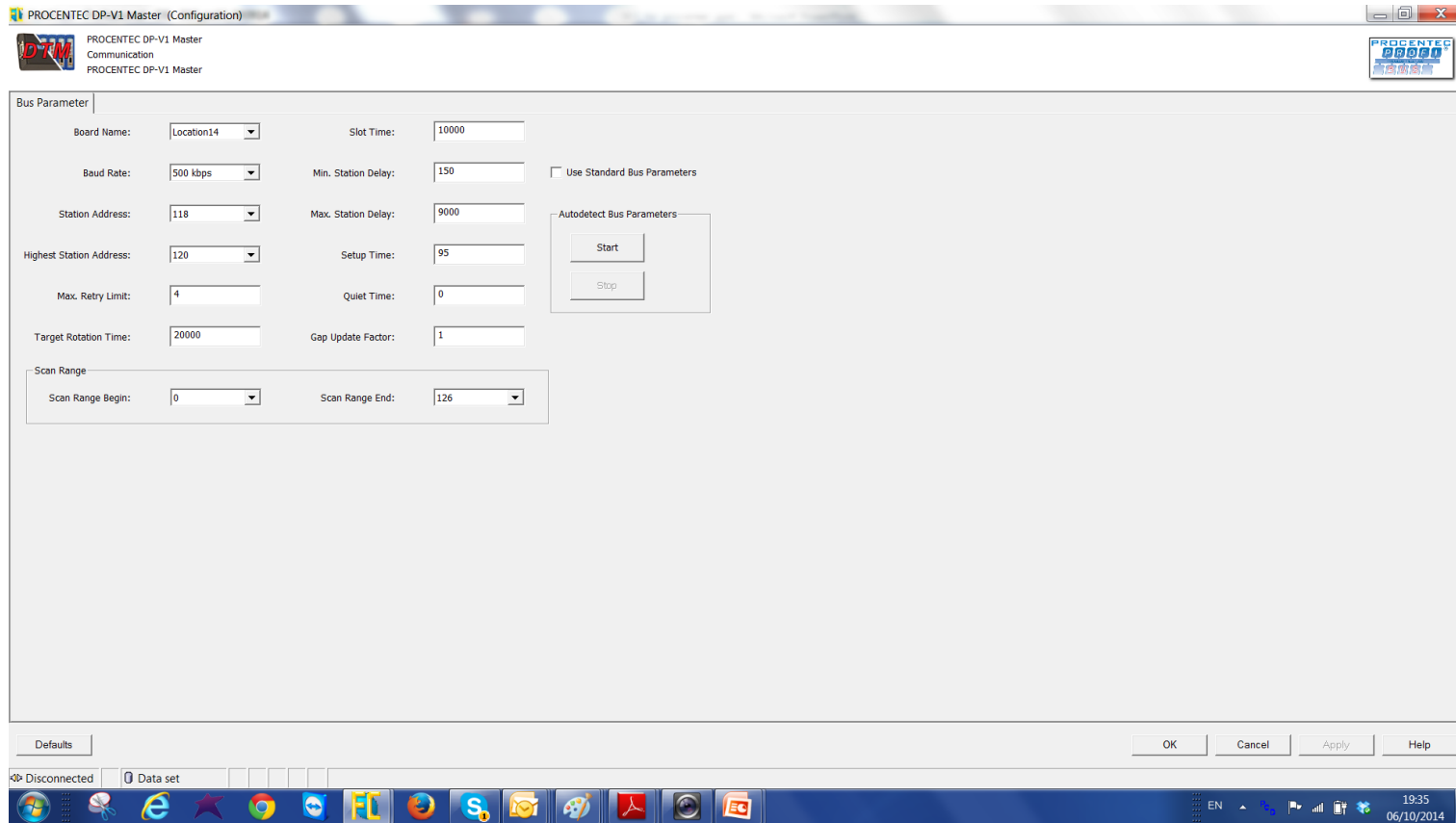
Jitter: 1750 nS

Polarity: Normal

COMbricks webservice V1.285 • Copyright (C)2010-2014 PROCENTEC. All rights reserved. • info@procentec.com



# דיאגנוסטיקה וקונפיגורציה ברמת המכשור באמצעות תוכנת Combricks commdtm-ו FieldCare







The screenshot displays the FieldCare software interface, which is used for configuring and diagnosing industrial devices. The main window shows a network tree on the left with a list of devices including PROFIBUS, Prowirl, Micropil, Cerabar, and iTEMP. Four configuration windows are open, showing the 'Offline Parameterize' settings for various devices:

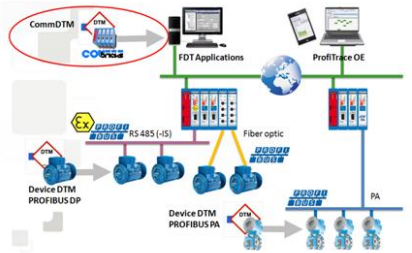
- 915-FIT-1230 (Offline Parameterize):** Shows device type 'Prowirl 72 V1.03.00 SW-REV. AMP: V1.00.00' and product designation 'Prowirl 72 PBUS TAG: 915-FIT-1230'. It includes a 3D model of the device and a 'Label' section with 'Standard View (manufacturer s...)' and 'Vortex Flow Measuring System'.
- 915-LIT-0167 (Offline Parameterize):** Shows device type 'Micropilot M protocol+sw-no: V01.05.0x (PA)' and product designation 'FMR 2xx TAG: 915-LIT-0167'. It includes a 3D model of the device and a 'Label' section with 'Standard View (manufacturer s...)' and 'Microwave Level Meter'.
- 915-PT-0376 (Offline Parameterize):** Shows device type 'Cerabar S / PMx 7x / PA / V04.00.xx' and 'DEVICE DESIGN:'. It includes a 3D model of the device and a 'Label' section with 'QUICK SETUP', 'MANUFACTURER VIEW', 'PROFILE VIEW', and 'Channel Module Setup'. The 'MEASURING MODE' is set to 'Pressure'.
- 915-TT-0174 (Offline Parameterize):** Shows device type 'iTEMP TMT84' and product designation '915-TT-0174'. It includes a 3D model of the device and a 'Label' section with 'TMT84' and 'Channel Module Setup'. The 'Current diagnostics description' is 'Good'.

The bottom of the interface shows a 'DTM messages' table with columns for 'Tag' and 'Error/User message', and a system tray with the date '06/10/2014' and time '19:34'.


## דבר הכרחי !!!



### Profibus Course



<http://www.inst-ic.co.il>



#### Table of Contents

- ❖ [PROFIBUS Organisation](#)
- ❖ [Introduction to Digital Communication](#)
- ❖ [PROFIBUS Basics](#)
- ❖ [PROFIBUS PA Coupler & Link](#)
- ❖ [PROFIBUS Components](#)
- ❖ [PROFIBUS Installation](#)
- ❖ [PROFIBUS DP - NetTESTII](#)
- ❖ [Combricks System](#)
- ❖ [PROFIBUS PA Segment Checker](#)
- ❖ [PROFIBUS DP Simulator](#)
- ❖ [PROFIBUS Cable Stripping & Wiring](#)
- ❖ [FDT - DTM Technology](#)
- ❖ [PROFIBUS PA KIT & FieldCare](#)
- ❖ [FieldCare Professional - CM](#)
- ❖ [PROFIBUS TROUBLESHOOTING TOOLKIT ULTRA](#)

<http://www.inst-ic.co.il>



# תודה על ההקשבה