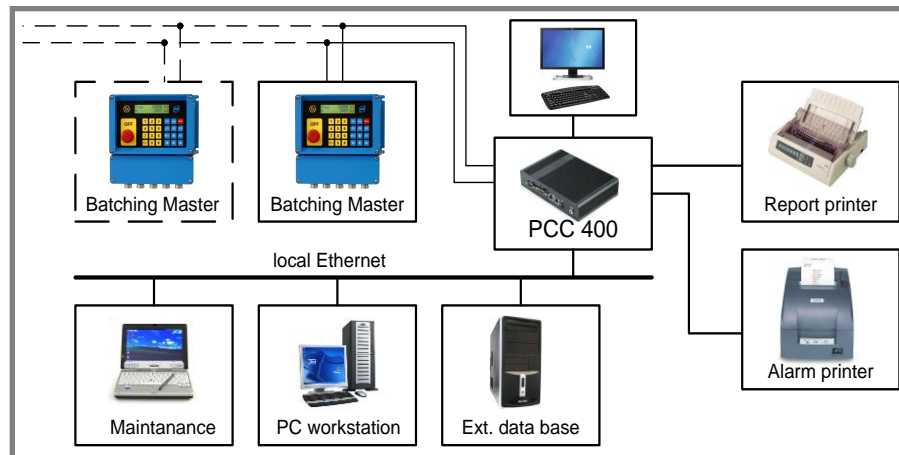


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PCC 400 - Communication and data storage solutions for loading terminals

- Printing of custody transfer loading protocols
- Storage device for the batch results and reports
- Communication possibilities to other systems or data bases
- Available for the Batching Master 110i/210i and the BC 20
- Realization of customer specific projects like the printing of labels or delivery papers.

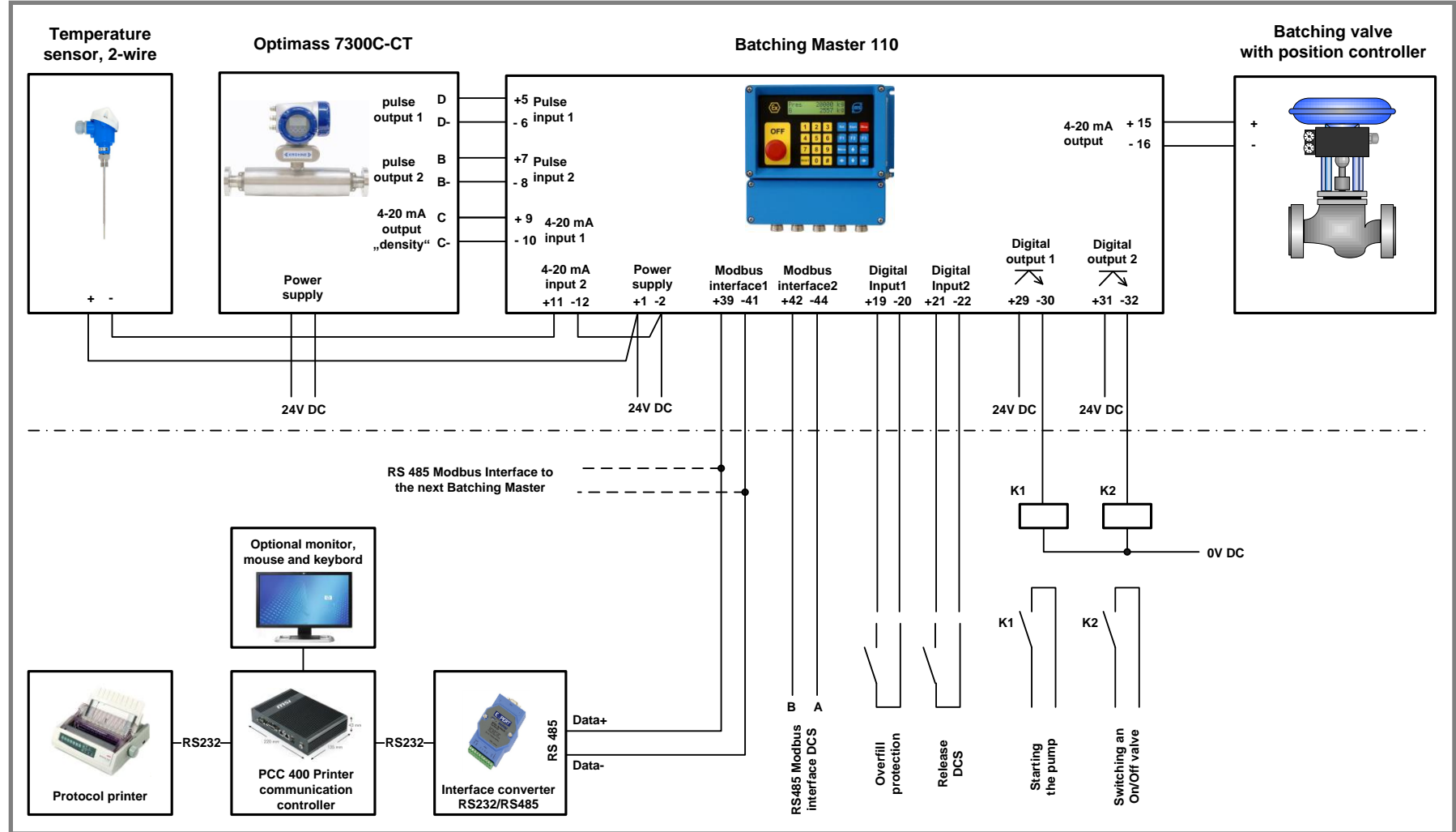


Functionalities of the PCC 400:

- **Printout and storage of the custody transfer batch protocols**
- **Storage of the loading protocols as PDF-files or as CSV-files**
- **Internal data base for the storage of the batching information with filter function and an export functionality to CSV-files**
- **Event protocol with alarm messages and status information**
- **Modbus slave interface at COM 4 for the transfer of the main information from the batch controllers to a DCS.**
- **Communication to MySQL databases in order to read the order information and to write the loading information after the batch. (optional)**
- **Communication to Terminal Automation Systems. The TAS writes a file for each loading into the PCC 400 drive and the PCC 400 delivers a file with the loading information after the batch (optional)**
- **Custody transfer proofed conform MI005**

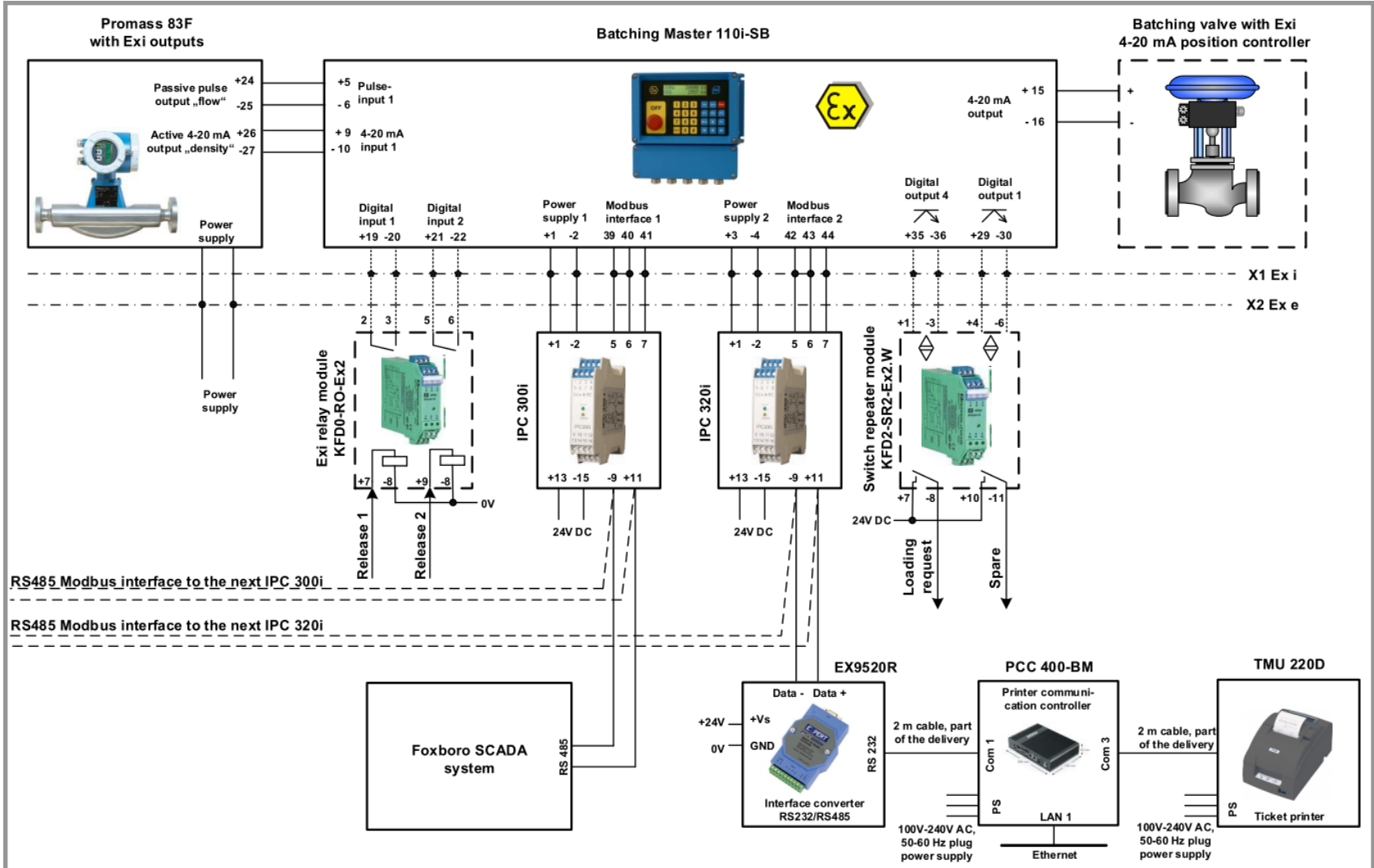
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Connection example to a non-Ex Batching Master 110:



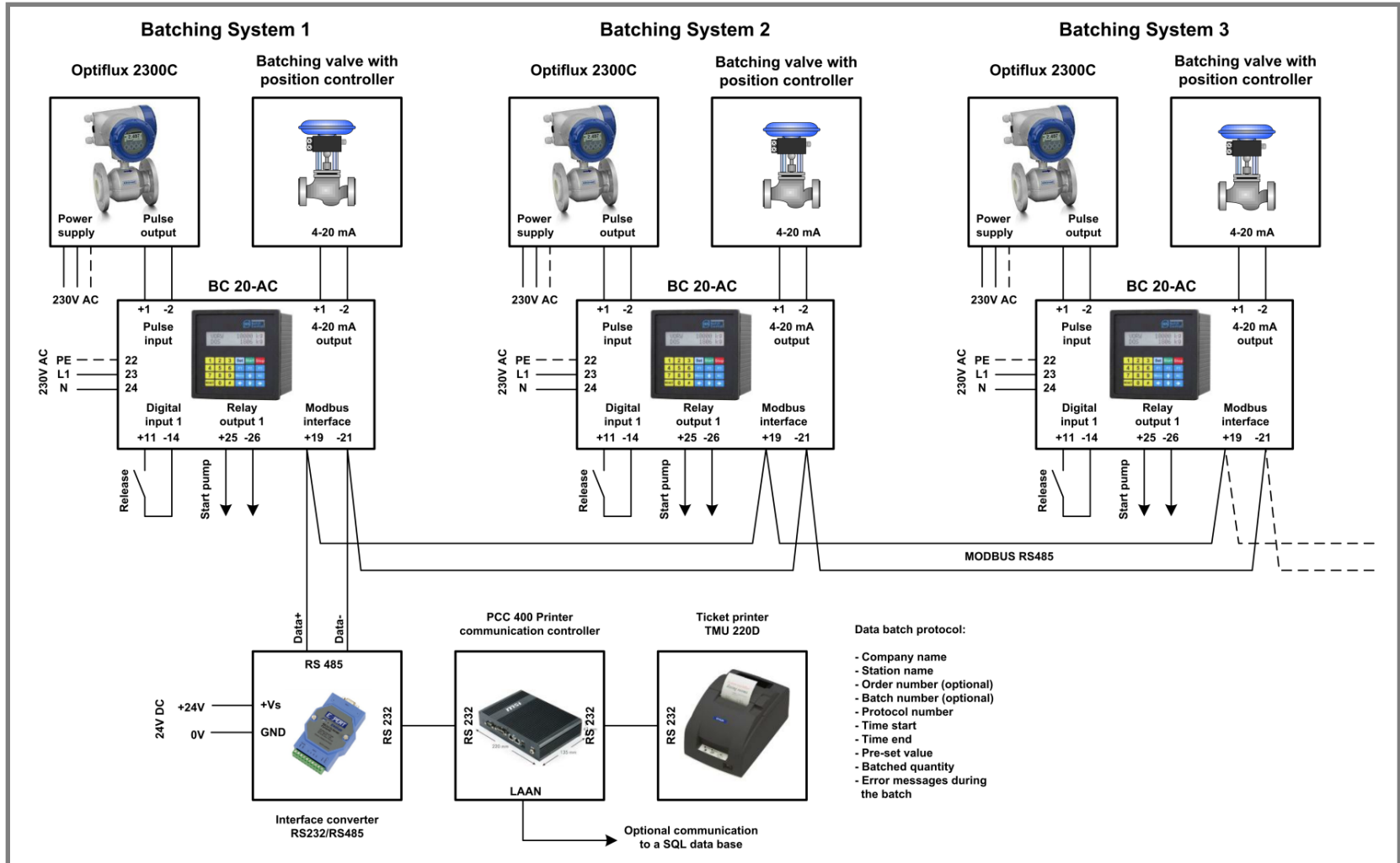
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Connection example to an Exi Batching Master 110i:



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Connection example to the BC 20:



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Terminal function (optional):

The PCC 400 controls the LCD indication of the batch controllers in order to show question texts before the batch. The operator is able to enter the information and to start the batch. The entered information will be stored and shown in the batch protocols.

```
Order No.:  
50012345
```

```
Operator No.:  
5001
```

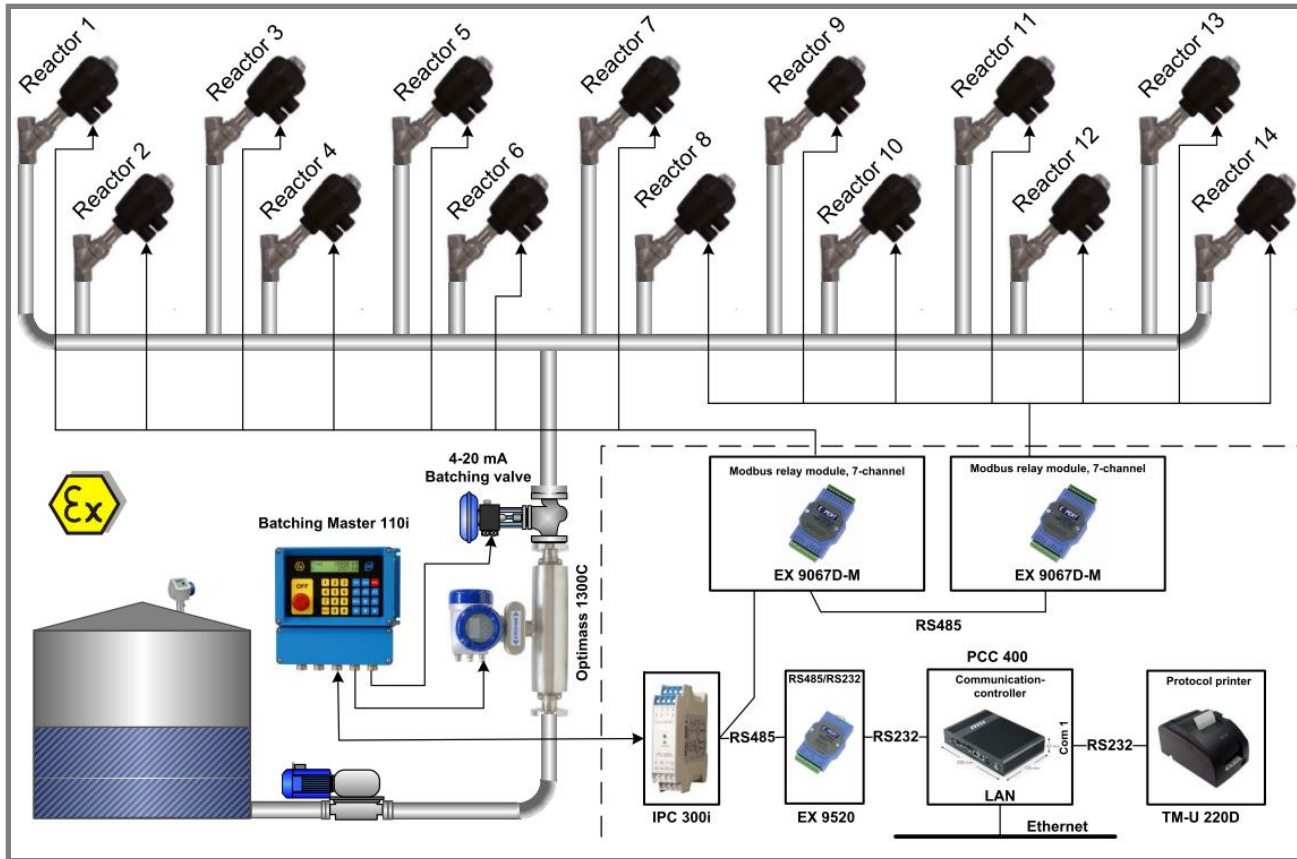
The screenshot shows a software window titled "Terminal mode" with a menu bar containing "General settings", "Questions FQIC-471", "Questions FQIC-1008", "Questions FQIC-1009", and "Questions FQIC-2008". The "Questions FQIC-471" menu item is selected. The main area contains a list of 10 questions, each with an input field and a "Min. input length" field. Question 1 is "Order No.:" with a value of 8. Question 2 is "Operator:" with a value of 4. Questions 3 through 10 have empty input fields and a value of 0. At the bottom, there are "Save" and "Close" buttons.

```
IBS Chemicals GmbH  
Marie-Curie-Str. 8  
50170 Kerpen  
  
Methanol Loading  
  
Order No.:      50012345  
Operator:      5001  
  
Station name:   FQIC-4711  
Batch number:   806  
  
Time start:    15.06.2012 14:49:01  
Time end:      15.06.2012 14:49:52  
  
Preset value:  20,00 t  
Batched mass:  20,00 t  
Batched volume: 25,00 m3  
Batched std.-vol.: 24,76 m3  
Standard temp.: 15,0 °C  
Average density: 800,00 kg/m3  
  
Custody transfer data  
are signed by *  
  
No failures during the batch  
  
Leave company via entry port 4
```

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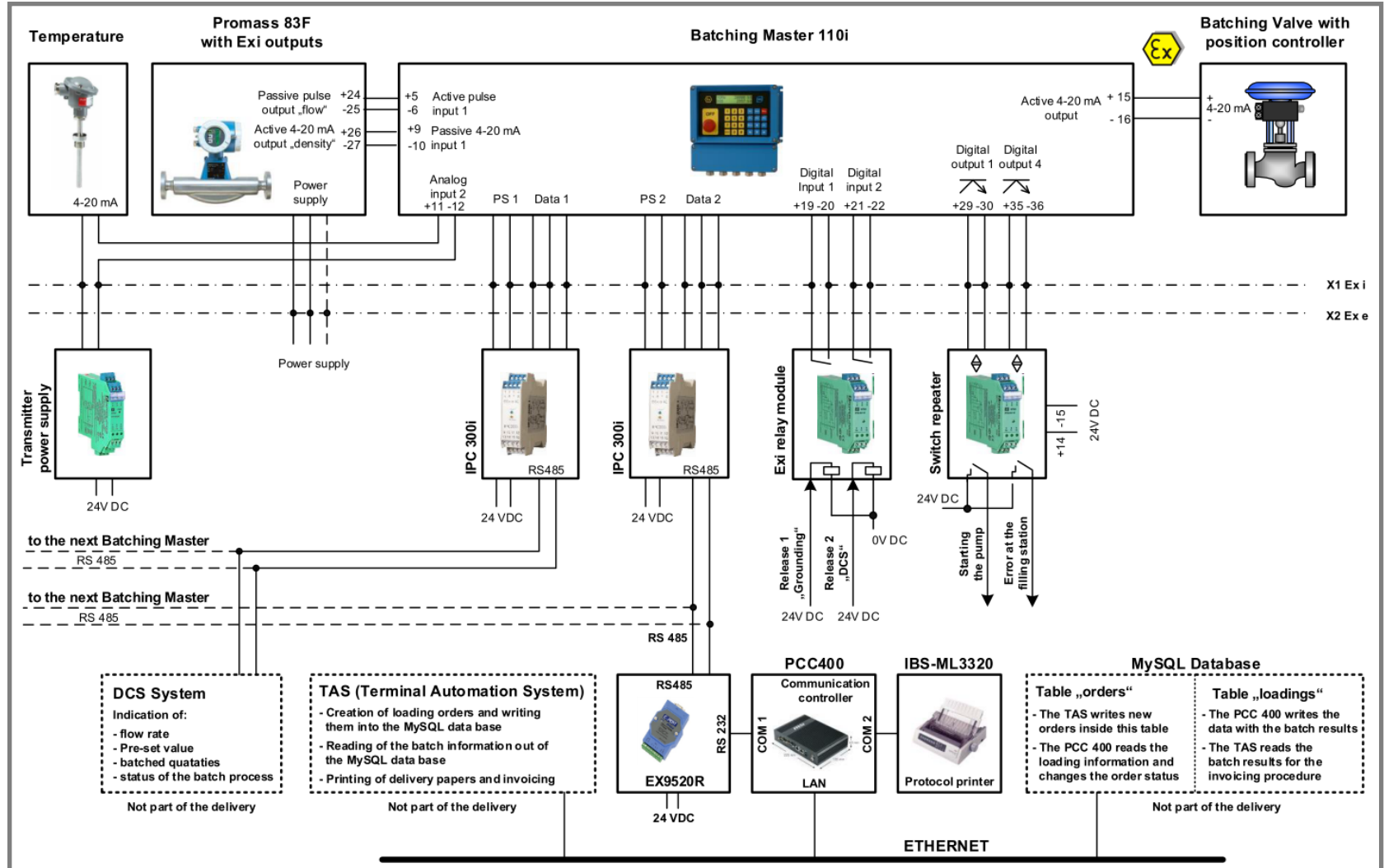
Product way selection at the batch controller before the start (optional)

The selected product way will be switched by Modbus relay modules.



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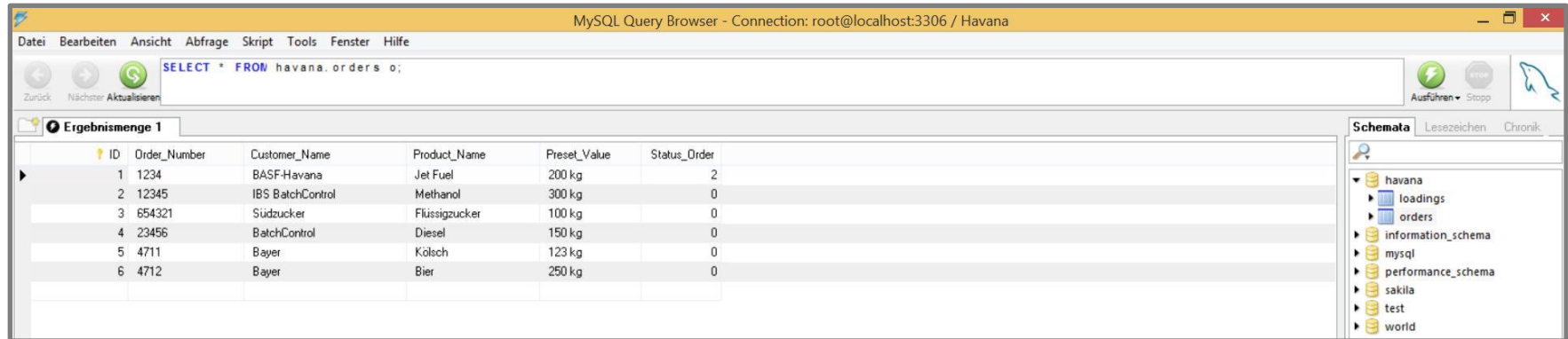
MYSQL database communication of the PCC 400 (optional):



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MYSQL database communication of the PCC 400 (optional):

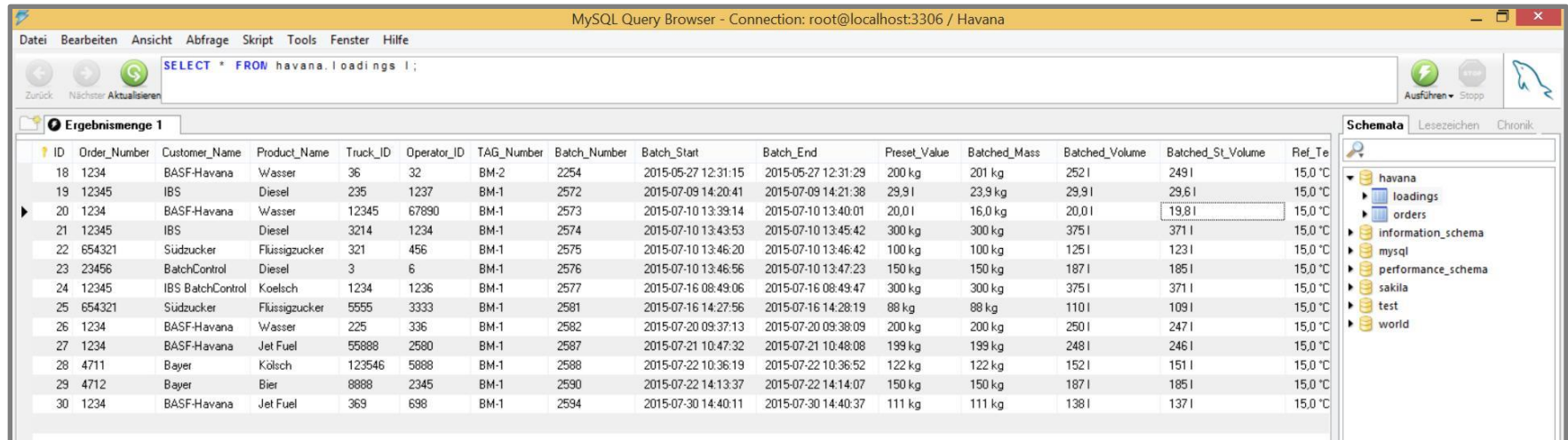
Table “orders” in the MySQL data base:



The screenshot shows the MySQL Query Browser interface. The query entered is `SELECT * FROM havana.orders o;`. The results are displayed in a table with the following columns: ID, Order_Number, Customer_Name, Product_Name, Preset_Value, and Status_Order.

ID	Order_Number	Customer_Name	Product_Name	Preset_Value	Status_Order
1	1234	BASF-Havana	Jet Fuel	200 kg	2
2	12345	IBS BatchControl	Methanol	300 kg	0
3	654321	Südzucker	Flüssigzucker	100 kg	0
4	23456	BatchControl	Diesel	150 kg	0
5	4711	Bayer	Kölsch	123 kg	0
6	4712	Bayer	Bier	250 kg	0

Table “loadings” in the MySQL data base:



The screenshot shows the MySQL Query Browser interface. The query entered is `SELECT * FROM havana.loadings l;`. The results are displayed in a table with the following columns: ID, Order_Number, Customer_Name, Product_Name, Truck_ID, Operator_ID, TAG_Number, Batch_Number, Batch_Start, Batch_End, Preset_Value, Batched_Mass, Batched_Volume, Batched_St_Volume, and Ref_Te.

ID	Order_Number	Customer_Name	Product_Name	Truck_ID	Operator_ID	TAG_Number	Batch_Number	Batch_Start	Batch_End	Preset_Value	Batched_Mass	Batched_Volume	Batched_St_Volume	Ref_Te
18	1234	BASF-Havana	Wasser	36	32	BM-2	2254	2015-05-27 12:31:15	2015-05-27 12:31:29	200 kg	201 kg	252 l	249 l	15,0 °C
19	12345	IBS	Diesel	235	1237	BM-1	2572	2015-07-09 14:20:41	2015-07-09 14:21:38	29,9 l	23,9 kg	29,9 l	29,6 l	15,0 °C
20	1234	BASF-Havana	Wasser	12345	67890	BM-1	2573	2015-07-10 13:39:14	2015-07-10 13:40:01	20,0 l	16,0 kg	20,0 l	19,8 l	15,0 °C
21	12345	IBS	Diesel	3214	1234	BM-1	2574	2015-07-10 13:43:53	2015-07-10 13:45:42	300 kg	300 kg	375 l	371 l	15,0 °C
22	654321	Südzucker	Flüssigzucker	321	456	BM-1	2575	2015-07-10 13:46:20	2015-07-10 13:46:42	100 kg	100 kg	125 l	123 l	15,0 °C
23	23456	BatchControl	Diesel	3	6	BM-1	2576	2015-07-10 13:46:56	2015-07-10 13:47:23	150 kg	150 kg	187 l	185 l	15,0 °C
24	12345	IBS BatchControl	Koelsch	1234	1236	BM-1	2577	2015-07-16 08:49:06	2015-07-16 08:49:47	300 kg	300 kg	375 l	371 l	15,0 °C
25	654321	Südzucker	Flüssigzucker	5555	3333	BM-1	2581	2015-07-16 14:27:56	2015-07-16 14:28:19	88 kg	88 kg	110 l	109 l	15,0 °C
26	1234	BASF-Havana	Wasser	225	336	BM-1	2582	2015-07-20 09:37:13	2015-07-20 09:38:09	200 kg	200 kg	250 l	247 l	15,0 °C
27	1234	BASF-Havana	Jet Fuel	55888	2580	BM-1	2587	2015-07-21 10:47:32	2015-07-21 10:48:08	199 kg	199 kg	248 l	246 l	15,0 °C
28	4711	Bayer	Kölsch	123546	5888	BM-1	2588	2015-07-22 10:36:19	2015-07-22 10:36:52	122 kg	122 kg	152 l	151 l	15,0 °C
29	4712	Bayer	Bier	8888	2345	BM-1	2590	2015-07-22 14:13:37	2015-07-22 14:14:07	150 kg	150 kg	187 l	185 l	15,0 °C
30	1234	BASF-Havana	Jet Fuel	369	698	BM-1	2594	2015-07-30 14:40:11	2015-07-30 14:40:37	111 kg	111 kg	138 l	137 l	15,0 °C

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MYSQL database communication of the PCC 400 (optional):

- Information exchange between the order management software (TAS) and the operator at the batch controller at the loading terminal.
- The operation at the Batching Master 110i/210i is controlled by the PCC 400.
- Access control of the trucks at the loading terminals.
- Important loading information will be shown in the field.
- At the end of the batch all information will be written back to the MySQL database

Operation procedure at the Batch controllers:

Enter Order No.: Set=Confirmation	Customer: IBC Chemicals	Product name: Methanol
Truck ID: 120005321	Pres:___15000 kg Set=OK, F3=New	Pres:___14850 kg Set=Confirmation

MySQL table "orders":

- Order number
- Customer name
- Product name
- Status of the order
 - 0 = order open
 - 1 = order in use
 - 2 = order completed

MySQL table "loadings", written by the PCC 400:

- Order number
- Customer name
- Product name
- Truck ID
- Operator ID
- TAG number
- Batch number
- Batch start time
- Batch end time
- Pre-set value
- Batched mass
- Batched volume
- Batched standard-volume
- Reference temperature
- Average density
- Average temperature

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Main window of the PCC 400 software

Settings Customer database Stored data Info

Printer **offline** 18:07:41

TAG-No.	Device address	Status	Index
FQIC-4711	1	online	1
FQIC-1008	2	offline	2
FQIC-1009	3	offline	3
FQIC-2008	4	offline	4

IBS Chemicals GmbH
Marie-Curie-Str. 8
50170 Kerpen

Methanol Loading

Station name: FQIC-4711
Batch number: 799

Time start: 14.06.2012 18:05:57
Time end: 14.06.2012 18:06:53

Preset value: 22,00 t
Batched mass: * 22,00 t *
Batched volume: 27,50 m3
Batched std.-vol.: 27,24 m3
Standard temp.: 15,0 °C
Average density: 800,00 kg/m3

Custody transfer data
are signed by *

No failures during the batch

Leave company via entry port 4

Status of the connected batch controllers

The last Loading protocols are shown at the right part of the software

Configuration of the loading protocol

Text blocks at the beginning of the loading protocol

Activation of the different possible batch information for the printout

Text blocks at the end of the loading protocol

Print	Text	Metrological relevant
<input checked="" type="checkbox"/>	Station name:	
<input checked="" type="checkbox"/>	Batch number:	
<input checked="" type="checkbox"/>	Time start:	
<input checked="" type="checkbox"/>	Time end:	
<input checked="" type="checkbox"/>	Preset value:	
<input checked="" type="checkbox"/>	Batched mass:	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Batched volume:	<input type="checkbox"/>
<input type="checkbox"/>	Batched std.-vol.:	<input type="checkbox"/>
<input type="checkbox"/>	Standard temp.:	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Average density:	<input type="checkbox"/>
<input type="checkbox"/>	Average temp.:	<input type="checkbox"/>

These texts can be modified, e.g. for the translation into the local language

The marked information will be shown between stars in the printout (* 20.000 kg *) Which means, that the information is custody transfer proofed.

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Indication of the stored loading protocols:

Name	Größe	Zuletzt geändert
20120424-FQIC-4711-33	1 K	24.04.2012 13:43:36
20120424-FQIC-4711-36	1 K	24.04.2012 13:54:26
20120515-FQIC-4711-51	1 K	15.05.2012 14:57:28
20120515-FQIC-4711-52	1 K	15.05.2012 15:08:14
20120515-FQIC-4711-53	1 K	15.05.2012 15:13:13
20120515-FQIC-4711-54	1 K	15.05.2012 15:15:53
20120515-FQIC-4711-55	1 K	15.05.2012 15:18:17
20120528-FQIC-4711-56	1 K	28.05.2012 17:44:10
20120528-FQIC-4711-57	1 K	28.05.2012 17:47:03
20120528-FQIC-4711-58	1 K	28.05.2012 17:49:49
20120530-FQIC-4711-59	1 K	30.05.2012 09:05:40
20120530-FQIC-4711-60	1 K	30.05.2012 09:24:09
20120530-FQIC-4711-61	1 K	30.05.2012 10:07:15
20120608-FQIC-4711-62	1 K	08.06.2012 12:39:18
20120608-FQIC-4711-63	1 K	08.06.2012 13:39:11
20120608-FQIC-4711-64	1 K	08.06.2012 17:45:44
20120610-FQIC-4711-65	1 K	10.06.2012 12:49:43
20120610-FQIC-4711-66	1 K	10.06.2012 13:59:02
20120610-FQIC-4711-67	1 K	10.06.2012 15:44:19
20120610-FQIC-4711-68	1 K	10.06.2012 17:22:08
20120610-FQIC-4711-69	1 K	10.06.2012 17:25:07
20120611-FQIC-4711-70	1 K	11.06.2012 07:13:48
20120612-FQIC-4711-83	1 K	12.06.2012 13:20:45
20120612-FQIC-4711-84	1 K	12.06.2012 14:54:23

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Methanol Loading

Station name: FQIC-4711
Batch number: 84

Time start: 12.06.2012 14:51:48
Time end: 12.06.2012 14:54:22

Preset value: 2000 kg
Batched mass: * 2000 kg *
Batched volume: 2000 l
Average density: 1000,00 kg/m3

Custody transfer data
are signed by *

No failures during the batch

Leave company via entry port 4

Filtering data

All Station name

Date from to

List of the stored batch protocols

Filter function by station name, date and time

The selected loading protocol is shown at the right side of the software

Print a copy or an original

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Internal data base of the batch information with export function to CSV files:

The screenshot displays a software window titled "PCC400 data base, batches". It contains a table with the following columns: Station name, Batch number, Start time, End time, Preset value, Batched mass, Batched volume, Batched std. volume, Standard temperature, and Average density. The table lists 22 batches, all with a station name of "FQIC-4711" and a standard temperature of 15,0 °C. Below the table is a filtering interface with the following elements:

- Navigation icons: Refresh, Previous, Next, and Stop.
- Filtering data section:
 - Radio buttons for "All" and "Station name" (selected).
 - A text input field containing "FQIC-4711".
 - A green "Use filter" button.
 - Radio buttons for "Date" and "Date" (selected).
 - Text labels "from" and "to" followed by empty input fields.
- Export buttons: "Export to CSV file" and "CSV file open", both in orange.

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Log file of the errors and status changes at the batch controllers:

ID	Station name:	Batch number:	Time:	Message:
152	FQIC-4711	799	14.06.2012 16:00:34	Batch finished
153	FQIC-4711	800	15.06.2012 08:47:06	Batch started
154	FQIC-4711	800	15.06.2012 08:48:01	Batch finished
155	FQIC-4711	802	15.06.2012 12:18:19	Batch started
156	FQIC-4711	802	15.06.2012 12:18:22	Batch interrupted
157	FQIC-4711	802	15.06.2012 12:18:22	Error grounding -active
158	FQIC-4711	802	15.06.2012 12:18:25	Error grounding -not active
159	FQIC-4711	802	15.06.2012 12:18:27	Batch started
160	FQIC-4711	803	15.06.2012 12:19:17	Batch finished
161	FQIC-4711	803	15.06.2012 12:19:30	Batch started
162	FQIC-4711	803	15.06.2012 12:19:33	Batch interrupted
163	FQIC-4711	803	15.06.2012 12:19:33	Truck overfilling -active
164	FQIC-4711	803	15.06.2012 12:19:35	Truck overfilling -not active
165	FQIC-4711	803	15.06.2012 12:19:37	Batch started
166	FQIC-4711	803	15.06.2012 12:19:43	Batch interrupted
167	FQIC-4711	803	15.06.2012 12:19:43	Emergency stop -active
168	FQIC-4711	803	15.06.2012 12:19:47	Emergency stop -not active
169	FQIC-4711	803	15.06.2012 12:19:48	Batch started
170	FQIC-4711	803	15.06.2012 12:20:34	Batch finished
171	FQIC-4711	804	15.06.2012 12:20:55	Batch started
172	FQIC-4711	804	15.06.2012 12:20:57	Batch interrupted
173	FQIC-4711	804	15.06.2012 12:20:57	Truck overfilling -active
174	FQIC-4711	804	15.06.2012 12:21:01	Truck overfilling -not active
175	FQIC-4711	804	15.06.2012 12:21:02	Batch started
176	FQIC-4711	804	15.06.2012 12:21:52	Batch finished

Filtering data

All Station name

Date from to

These error message texts can be modified, e.g. for the translation into local language

The selected messages can be printed on request and they can be exported to CSV files

Some of our Main Clients:

3M, France, Germany

Abbot, USA, Germany

Air Liquide, France, Germany,

Aker Kvaerner, The Netherlands

Akzo Nobel, China, The Netherlands, Germany

Arkema, France, Germany

Astra Zeneca, England

BASF, Belgium, Malaysia, Mexico, China, Germany

Bayer, Malaysia, Spain, Vietnam, Germany

Basell, Germany

British American Tobacco, Germany

Butagaz, France

Clariant, China, Greece, Switzerland, Germany

Ciba, Italy, France, Switzerland, Germany

Christ Water Technology, Germany

Cognis, Germany

Degussa, Belgium, Germany

Dupont, Germany

DSM, The Netherlands, Austria, Germany

Endress+Hauser, worldwide

Emerson, worldwide

Exxon, France, The Netherlands

GlaxoSmithKline, Great Britain, Italy

Kraus Global, Kanada, Korea

KANEX, Russia, Ukraine

Krohne Messtechnik, worldwide

Lanxess, Germany

Linde, Germany

Lukoil, Ukraine

Lurgi, Germany

Merck, Germany

Novartis, Switzerland, Germany

Oiltanking, Belgium

Oval Asia, Singapore

Petroleos de Venezuela, Cuba

Petrobras, Brazil

Rhodia, France, Germany

Roche, Switzerland, Germany

Sanofi-Aventis, France, Germany

Sipchem, Saudi Arabia

Shell, Germany

Symrise, Germany

Tecnicas Reunidas, Spain

Total, France

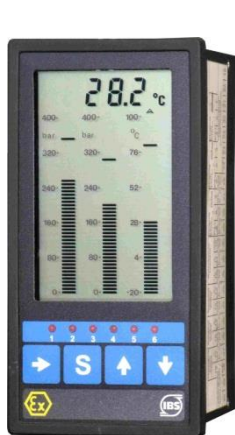
Toyo Engineering, Japan

Uhde, China, Egypt, Ukraine, Germany

Vopak Banyan Terminals, Singapore

Wacker Chemie, China, India, Germany

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Indicators



PID Controllers



Batch Controllers



Exi Interfaces



Process Recorders



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Flow Computer