

Supplementary Instructions

for solenoid metering pump delta® with timer



Corporate information:

Supplementary Instructions for solenoid metering pump delta[®] with timer © ProMinent Dosiertechnik GmbH, 2008

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A Detail of setting diagram pump * timer

NOTE

For settings in the "Set menu", set to "passive" in the "proTIME" menu, for working in timer mode, set to "active" in the "proTIME" menu.





В Setting menu TIMER from the SET menu

ProMinent[®]

Setting menu TIMER from the SET menu

Placeholder	Designation	Specification (value range)
nnn	Line number	000 255
W	Week number	1, 2
WWW	Weekday	MO, TUE SUN
dd	Day (date)	01 31
hh	Hours	00 23
mm	Minutes	00 59
SSSSS	Seconds	00001 65535
fffff	Stroke frequency in strokes/h	000 12000 (= 200 strokes/min)
kkkk	e.g. batch size	00001 65535
уу,уу	Factor	00.01 99.99
Х	No. relay O:	1, 2
000	Switching state	on, off
u	No. input I:	03
ZZ	No. delayer D:	00 31
рр	No. flag M:	00 31

1 About this pump

The delta[®] with timer offers the entire functionality of the standard pump. In addition, this functionality can be used as controlled by a timer. Furthermore, asynchronous events can be integrated into the process (contacts, delays, ...).

The in-built clock is based on the Gregorian calendar.

1.1 Main differences from the timer gamma/ L

- As soon as the timer module has been connected, it immediately integrates into the operating process of the pump. The scope of the operating menu is extended. In the submenu "Info", the name of the module, "proTime", is displayed and beneath it its software and hardware version.
- In the main menu, a setting menu "proTime" is displayed through which the timer (the module) can be set to "active" or "passive", instead of using the operating mode AUTO. In active state, the operating menu is significantly limited. In fact, only information can be read.
- The timer is set to "complex"-"yes" or "complex"-"no" instead of "complex" or "simpl".
- During the programming of a programme line, conditions can be integrated.
- The state of a relay (O:) of the delta® can also have an effect on the programme sequence.
- There are flags similar to a PLC.
- The pump is stopped with the action "Stop".
- Initial conditions are defined using the triggering event "Init".
- There are 32 delayers.
- A delayer must be started by a triggering event.
- Summer time can be changed automatically on any weekend.
- A "second" week is shown by a small dash in the permanent display.
- The stroke frequency must be entered in strokes per hour.
- The timer programme can have up to 256 programme lines.

1.2 Brief explanation of selected functions

Complexity

The operating menu can be simplified using "complex"-"no" in order not to obstruct the view by the entire complexity of the timer when programming simple applications.

Outputs (relays)

Those relays which were connected with the relay option are designated as outputs. 0 to 2 relays can be present (relay 1=00, relay 2=01).

Inputs

The pins of the socket at the timer module are the inputs; there are four inputs (I0 to I3).

Delayer

Delayers are started event- or time-controlled. Upon expiry of the delay time, the delayer itself can trigger any actions.

Flag

Flags are simple locations which can be set to "on" or "off" by the programme (similar to PLC). They are an important aid for programming, above all in connection with the "conditions".

Initialising

As is the case when switching on the mains supply, at programme start, the state is set which would also exist if the pump would not have been deactivated. Using the initial commands (Init), a defined switch-on state can be programmed. Initial commands have priority over time commands.

Triggering events (triggers)

An event can be triggered either time-controlled or event-controlled.

- 1. Time periodicities are executed to the minute.
- 2. Inputs (I) trigger if the input potential changes from 1 to 0 or in case of falling edge or if the potential-free contact is closed.
- 3. Delayers (D) are triggered as soon as their time has expired.
- 4. Flags (M) as triggers function similar to the inputs. But: They only trigger something if the input potential changes from 1 to 0.
- 5. The initialisation (Init) is executed upon programme start ("proTime"-"active" or mains supply on)

Conditions

Commands are only executed if both the triggering event and the condition are met. In this respect, it is only the statically present signal at the inputs, the outputs or the flags which have an effect and not the change of the signal – as is the case with a triggering event.

Actions

These are those actions which are to be executed as soon as a triggering event occurred and the condition is met.

2 Settings

The pump with timer is set like the standard pump, with the addition of the timer functionality.

NOTE

- Please first read these supplementary instructions completely to get an overview. You will then understand the timer better when working through the supplementary instructions.
- When switched on for the first time, the alarm indicator (yellow) will flash because no time has yet been entered. The alarm indicator in general is illuminated if the clock module itself has been without voltage for some time and "forgot" the time (see "Notes" in the "Annex").
- Settings can only be made if "proTIME" has been set to "passive" in the SET menu.
- · The setting process is cancelled if no entries are made for 60 seconds.

You can furthermore make the following via the operating menu of a timer pump:

- 1 Settings for the function "Clock" (Set menu) Chap. 2.1
- 2 Settings for the function "Timer" (Set menu) Chap. 2.2
- 3 Switching to timer mode (main menu) Chap. 2.3

2.1 Settings for the function "Clock" (Set menu)

Via the function "Clock", the time and the date can be set. You can also determine whether the pump is to consider the summer time and in which month and on which Sunday.

Settings





CAUTION

The clock stops during the time the TIME menu is opened!

NOTE

For setting to the second, press the key ⁽²⁾ after setting of the seconds precisely at the desired time.

The clock stops during the setting process.

The timer exclusively displays the time in the 24 hours-format.

As soon as you entered the date (ISO format: yyyy:mm:dd), the time calculates the weekday and the date of the following days based on the Gregorian calendar. The timer also determines the week number for two-week cycles (referred to 1 January 2000). If in the permanent display the secondary display for the date has been selected, no dash is displayed on the right in a week no. 1 - in a week no. 2 two dashes (use the key 🖲 in the permanent display to select the secondary display "Weekday / day / month / year" - to do so, first press the key 🖲 until the arrow appears which moves to the secondary display, then browse using the key 🖲.

NOTE

• For two-week cycles, the timer does not refer to calendar weeks. As a result, the permanent display may show the week no. 2 in the first calendar week (CW 1).





CAUTION

 An automatic summer time adjustment can only be used in countries in which the time is adjusted on a Sunday night between 02:00 a.m. and 03:00 a.m.!

• If you want to use the automatic summer time adjustment, please avoid any triggering events between 02:00 a.m. and 03:00 a.m.!

NOTE

- During summer time, a dot is shown behind the time in the permanent display.
- If the delta is re-connected to the supply voltage after having adjusted the summer time, the software automatically adjusts the timer.

When setting, the first figure always indicates the month in which the adjustment is to be made. The second figure indicates on what Sunday of this month the adjustment is to be made. If the summer time is always to be adjusted on the last Sunday of the month, enter "5" as number of the Sunday.

At the beginning of the summer time – if automatic summer time adjustment has been set – the timer software performs the following: The timer adjusts the clock from 02:00 a.m. by one hour to 03.00 a.m. on the selected Sunday of the selected month. The timer software than quickly executes all programme lines referring to times between 02.00 a.m. and 03:00 a.m. one after the other (no batches are executed!).

At the end of the summer time, the timer software performs the following: It adjusts the clock by one hour from 03:00 a.m. to 02.00 a.m. on the selected Sunday of the selected month. During this second process, the time software does not execute all programme lines between 02.00 a.m. and 03:00 a.m. However, the hourly events are executed.

2.2 Settings for the function "Timer" (SET menu)

NOTE

The TIMER menu is shown at the top of the present operating instructions in "Detail from the "Set" menu".

Via the function "Timer", you can newly programme (new) – Chap. 2.2.1 check (view) – Chap. 2.2.2 modify (edit) – Chap. 2.2.3 individually delete (delete) – Chap. 2.2.4 delete all (delete all) – Chap. 2.2.5 programme lines.

The major part of the TIMER menu is only accessible if the timer type was set to "complex"-"yes" (see Chap. 1.7). If the timer type is set to "complex"-"no", you may only use "time" and "Init" as triggering events and only "manual" and "stop" as actions (the menu options for the other events and actions as well as the conditions are hidden).



CAUTION

- First consider whether you want to control the pump with the timer type "complex"-"yes" or the timer type "complex"-"no"! Because when switching the timer type in this direction, all programme lines are deleted! (Not when switching from "complex"-"no" to "complex"-"yes".)
- The pump does not perform any plausibility check! Please ensure before use that the timer actually does what you expect of it! Please consider the consequences for your unit!
- If you want to use the automatic summer time adjustment, please avoid any triggering events between 02:00 a.m. and 03:00 a.m.! (see Chap. 2.1.2)

2.2.1 Programming of new programme line (new)

NOTE

If the timer is set to "active", the pump can neither be set nor programmed! For this purpose, set the timer to "passive" in "proTIME".

2.2.1.1 Principle design of a programme line

In principle, a programme line is designed as follows (with example):

Triggering event			Condition	Action
Time	d:	d: 12:00	& Working week	Stop

This corresponds to the following command:

IF (!) triggering event AND (&) condition THEN (=) action

The **triggering event** defines which is to trigger the action.

The triggering event can be linked with a **condition**.

The **action** defines which type of action is to take place at the time of the triggering event, if the condition is met.

Specifications exist for all three elements.

The example thus means: If the time at a day is 12:00 o'clock and if it is a day of the working week, then the pump is to stop.

Triggering event	Description	Remarks
Time	Switching time reached	For details see below; always available
Input	0/1 contact at input I: x	Inputs at the socket of the module (see annex)
Delayer	Delay time of delayer D: xx expired	
Flag	Flag M: xx was set from 0 to 1	Definition similar to PLC technology (see below)
Init	Programme sequence was started	Specifies the initial conditions (see below)

Tab. 1: Triggering events

Condition	Description	Remarks
& none	no condition required	
& I	Signal at input I: x	Inputs at the socket at the module see annex (I for input)
& O	Relay x is logically "on"	(O for output)
& M	Flag M: xx is set	Definition similar to PLC technology
& Working week	It is Mo - Fri	
& Weekend	It is Sat or Sun	

Tab. 2: Conditions

Condition	Description	Remarks
Manual	Switching to operating mode Manual	Always available
Batch	Switching to operating mode Batch	
Contact	Switching to operating mode Contact	
Analogue *	Switching to operating mode Analogue	
Stop	Stop pump	
Frequency	Change stroke frequency	does not change the operating mode
Relay 1 **	Relay 1 switches to logically "on" ***	
Relay 2 **	Relay 2 switches to logically "on" ***	
Delayer	Delayer D: activate xx	For details see below
Flag	Flag M: set xx	Definition similar to PLC technology; for details see below

Tab. 3: Actions

* Option

- ** Option; must be assigned to the timer
- (for "relay" as "option" see the "Operating instructions solenoid metering pump delta") *** This means for a relay defined as "dropping out" (relay menu or Identcode) that the relay opens – switches off.

For the two triggering events "Time" and "Delayer", the following elements are added to the programme line:

2.2.1.2 Time

The triggering event "Time" triggers actions periodically. Thus, a programme line with "Time" also covers elements for a cycle and a switching time.

Triggering event	Cycle	Switching time	Condition	Action
Time	d:	d: 12:00	& Working week	Stop

The cycle specifies after which time the action is to be repeated.

The $\ensuremath{\textit{switching time}}$ specifies when the action is to take place.

The **example** thus means: If the time at a day is 12:00 o'clock and if it is a day of the working week, then the pump is to stop.

Cycle	Presentation in the display	Description
hourly	h:	
daily	d:	
weekly	w:	
biweekly *	2w	
monthly	mo:	
Working week		Mo – Fri, see "Condition"
Weekend		Sat and Sun, see "Condition"

Tab. 4: Cycles

* The timer does not refer to calendar weeks (see Chap. 21)

NOTE

- For biweekly cycles, the timer does not refer to calendar weeks. As a result, the permanent display may show the week no. 2 in the first calendar week (CW 1). (see Chap. 1.2 "Setting of time and date").
- With the triggering event "time", you can trigger an action to the minute. If the action is to be triggered to the second, the delayer must be used.

2.2.1.3 Delayer

With a delayer D: xx, you can delay an action with regard to a triggering event. Example:

06	Input I: 2	Delayer D: 03 on
07	Delayer D: 03 00125	Relay 1 on

The example means:

If a contact is connected to Input I: 2, then the delayer D: 03 is started which has the relay 1 switching after 125 seconds.

A programme line with a triggering event "Delayer" D: xx thus also includes the element "Delay time".

The delay time specifies by which time the start of the selected action is to be delayed (0 s \dots 65 535 s = 18 h 12 min 15 s).

The delayer itself must first have been called by a triggering event as an action. A delayer can also be the action of another delayer.

You can use 32 different delayers.

NOTE

- With the triggering event Delayer D: xx, you can trigger an action to the second.
- The clock of the delta[®] has an accuracy of ± 0.3 s/24 h.

2.2.1.4 Inputs

A 0/1 contact signal e.g. at the input I: 3 of the socket of the timer module can be a triggering event.

The constant signal level e.g. at the input I: 3 of the socket of the timer module can have the effect of a condition.

Example:

05	Input I: 2	Flag M: 28 on	
06	Time h:: 25	& M M: 28	Relay 2 off

The example means:

As soon as a contact at input I: 2 is closed, the flag M: 28 is set. 25 min. after each full hour, if the flag M: 28 has been set, the relay 2 switches to off.

2.2.1.5 Flag

The flags have very similar properties as the flags in PLC programming. They are simple locations where a state or an event is stored by a "0" or a "1" and then can be re-used. A flag M: xx, which is set by an action from "0" to "1", can be a triggering event.

The state of a flag M: xx can have the effect of a condition.

Example:

08	Input I: 1	Flag M: 14 on	
09	Time h:: 48	& M M: 21	Relay 1 off

The example means:

As soon as a contact at input I: 2 is closed, the flag M: 28 is set. 25 min. after each full hour, if the flag M: 28 has been set, the relay 2 switches to off.

2.2.1.6 Init

Using the triggering event "Init" initial conditions can be set at the beginning of a programme sequence.

Example:

23	Init	Relay 2 on
24	Init	Delayer D: 15 on
25	Init	Flag M: 23 on

The example means:

As soon as the programme is started (via "proTime"-"active" or mains supply), Init sets the relay 2 to "on", the delayer 15 to "on", and the flag 23 to "on".

2.2.1.7 One event – several actions

You can assign an event to several actions. To do so, always use the same cycle and the same switching time!:

Triggering event	Cycle	Switching time	Condition	Action	Specification
Time	d:	d: 12:45	& Working week	Contact	B: 00050
Time	d:	d: 12:45	& Working week	Relay 2	off
Time	d:	d: 12:45	& Working week	Delayer D: 12	on

NOTE

- For details on the sorting sequence of the programme lines see next chapter.
- The timer programme can have a maximum of 256 programme lines (00 ... 255).

2.2.2 Checking of programme lines ("view")

With "view" you can check individual programme lines. Select the desired programme line according to its line number nn using the arrow keys.

Because the timer software automatically sorts the programme lines, the numbers of the programme lines can change if you re-programme.

Sorting sequence

The timer software automatically sorts all newly programmed programme lines after completing them with ⁽²⁾ below the other programme lines.

The first sorting criterion is the type of the triggering event (sequence see Tab. 5).

"Time" programming lines are sorted below each other first according to the switching time and then to the length of the cycle.

The fourth sorting criterion is the type of action (see also the programming examples at the end of these instructions).

A purely time-controlled timer programme will also run in this sequence.

Settings

1. Sorting criterion	2. Sorting criterion*	3. Sorting criterion*	4. Sorting criterion	5. Sorting criterion
Triggering event	Cycle	Switching time	Conditions	Actions
Time	h:	mm (minute)	& none	Manual
Input I: 00	d:	hh (hour)	& I (input)	Batch
Input I: 01	w:	www (weekday)	& O (relay)	Contact
	2w:	ww (week no.)	& M (flag)	Analogue
Delayer D 00:	mo:	dd (day)	& Working week	Stop
Delayer D 01:			& Weekend	Frequency
				Relay 1
Flag M 00:				Relay 2
Flag M 01:				Delayer D 00:
				Delayer D 01:
Init				
				Flag M 00:
				Flag M 01:

Tab. 5: Sorting sequence of programme lines * only for triggering event "time"

2.2.3 Editing of programme lines (edit)

Select the desired programme line according to its line number nnn using the arrow keys. The timer software may sort an edited programme line after completion with ⁽²⁾ differently in between the other programme lines (for rules see Chap. 2.2.2). For further details see 2.2.1 "Programming of programme lines".

2.2.4 Deleting individual programme lines (delete)

Select the desired programme line according to its line number nnn using the arrow keys. The programme line is deleted as soon as **(2)** is pressed. The timer software re-sorts the remaining programme lines (rules see Chap. 2.2.2).

2.2.5 Deleting all programme lines (delete all)

CAUTION

All programme lines are deleted if you confirm the selection YES with **@**!

2.2.6 Ending of programming (end)

NOTE

You may also press ⁽²⁾ for 3 seconds. All settings are stored in the EEPROM.

2.2.7

7 Setting of timer type



First consider whether you want to control the pump with the timer type "complex"-"yes" or the timer type "complex"-"no"! Because when switching the timer type in this direction, all programme lines are deleted! (Not when switching from "complex"-"no" to "complex"-"yes".)

The functionality of the timer can be extended by switching from "complex"-"no" to "complex"-"yes". Because then the functional scope of the timer is not limited to periodically triggering events and the operating mode "Manual" or the action "Stop".

2.3 Activating of timer (proTIME menu)

NOTE

If the timer is active, the pump can neither be set nor programmed! For this purpose, set the timer to "passive".

After having set everything and if you want to control the pump via the timer, set the timer to "active":



- Press I for 2 seconds
- Set to "proTIME" using I
- ► Go to the menu option using 🕑
- Set to "active" and press
 Ready!
 (The permanent display shows the clock symbol.)

The timer software now generates the state of the pump which the pump would have precisely had at this time if it would have been set to "active" without any interruption. This concerns non-delayed, linked actions.

3 Examples

3.1 A simple example for a timer application

Prerequisites:

- You already worked with the pump type
- The pump is brand new (= timer is set to "complex"-"no")
- The time has been set (if required, set in "Settings"-Setting of "Clock"-"Time" (see Chap. 2.2.1 "Time and date")).

Task:

The pump is to start metering daily at 12 o'clock (starting time) with 12.000 strokes/h (200 strokes/min) and to stop again at 2.00 p.m. (stop time).

Solution:

Because switching times and not the duration is set at timers which are set to "complex"-"no", first 12 o'clock must be set as starting time and a stroke frequency of 12.000 must be set. The pump now works with this stroke frequency up to the next switching time. Because the pump is to stop at 2.00 p.m., 2.00 p.m. has to be set as stop time and the action "Stop" is to be set to stop the pump. The pump works this way up to the next switching time (in this case until 12 o'clock the next day).



Programming:

- Set the timer to "passive" in "proTIME" (see previous page. On the LCD screen, the identified "Timer" (clock symbol) is no longer displayed on the top right.)
- ▶ go to the SET menu and from there to the TIMER menu (see previous page)
- follow the path through the TIMER menu shown on the reverse and set the corresponding values for the first programme line (time, d:; 12:00 (starting time), no condition, manual, 12.000 strokes/h); with the arrow keys return from END to NEW
- follow again the path through the TIMER menu shown on the reverse and set the corresponding values for the second programme line (time, D:, 02:00 (stop time), no condition, stop), from END press the key
- Set the timer to "active" in "proTIME" (see previous page. On the LCD screen the identifier "Timer" (clock symbol) is displayed on the top right.)

From now on, the timer switches the pump as set (test!).

Programme line	! Triggering event			& Condition	= Action	
To be read as:	! IF			& AND	= THEN	
00 :	Time	d:	d: 12:00	& none	Manual	12.000
01:	Time	d:	d: 14:00	& none	Stop	-

NOTE

If you made a wrong entry:

- either programme the programme line up to the end and then enter the number of the programme line in EDIT. Now press the ⁽²⁾ key, run through the programming of the programme line again and enter the correct values
- or select the programme line and delete with "Delete"
- or delete all using "Delete all".

3.2 A more complex example – with two solutions

Programme example "Shock metering"

In order to programme the pump, follow the two solution proposals on the following pages:

- first draw a bar diagram (1st diagram)
- ▶ then record what is to happen at which time (2nd diagram)
- then prepare the individual programme lines (table)
- enter the programme lines.

3.2.1



Solution 1: Time-controlled programming





Fig. 4: 2. Diagram switching times for time-controlled programming

Programme line:	Triggering event			Condition	Action	
00 :	Time	w:	w: FRI 10:00	& none	Relay 1	on
01:	Time	w:	w: FRI 12:00	& none	Manual	12.000 strokes/h
02 :	Time	w:	w: FRI 12:00	& none	Relay 1	off
03 :	Time	w:	w: FRI 12:00	& none	Relay 2	on
04 :	Time	w:	w: FRI 15:00	& none	Contact	01.00
05 :	Time	w:	w: FRI 18:00	& none	Relay 2	off
06 :	Init			& none	Relay 1	off
07 :	Init			& none	Relay 2	off

3.2.2 Example 2: Event-controlled programming

A contact triggers the shock metering (in the example, the contact starts at 10 o'clock).







Fig. 6: 2. Diagram switching times for time-controlled programming

Programme line:	Triggering event			Condition	Action	
00 :	Input	I: 0		& none	Relay 1	on
01:	Input	I: 0		& none	Delayer	D: 00 on
02 :	Delayer	D: 00	7200		Manual	12000
03 :	Delayer	D: 00	7200		Relay 1	off
04 :	Delayer	D: 00	7200		Relay 2	on
05 :	Delayer	D: 00	7200		Delayer	D: 01 on
06 :	Delayer	D: 00	7200		Delayer	D: 02 on
07 :	Delayer	D: 01	10800		Contact	01.00
08 :	Delayer	D: 02	21600		Relay 2	off
09 :	Init				Relay 1	off
10 :	Init				Relay 2	off
11:	Init				Contact	01.00

NOTE

- Prepare a table in WORD, EXCEL or similar application as shown in the examples. Enter the individual programme lines in the table and only then enter them as programme in the pump. Save the table in a universal data format (e.g. RTF) for later changes.
- Note in addition if a certain relay is programmed as "picking up" (Identcode characteristic "Relay" and observe the RELAY menu! See also the "Operating instructions solenoid metering pump delta[®]").

Examples

Example for sorting sequence of the programme lines

Prog. line	!triggering event			& Condition		"= Action	
0	Time	h:	:00			Batch	B: 00025
1	Time	h:	:00			Frequency	02400
2	Time	h:	:01			Stop	
3	Time	h:	:02			Analogue	
4	Time	h:	:05			Delayer	D 0: on
5	Time	h:	:05	& Working week		Delayer	D 1: on
6	Time	h:	:05	& Weekend		Delayer	D 3: on
7	Time	h:	:05			Flag	M 0: on
8	Time	h:	:07	& Weekend		Batch	B: 00150
9	Time	h:	:07	& Working week		Batch	B: 00180
10	Time	h:	:07	& Weekend		Frequency	09600
11	Time	h:	:07	& Working week		Frequency	12000
12	Time	d:	07:20			Batch	B: 00088
13	Time	d:	07:20			Frequency	05600
14	Time	w:	SUN, 08:33			Analogue	
15	Time	2w:	1, TUE, 08:40			Batch	B: 00140
16	Time	2w:	1, TUE, 08:40			Frequency	09000
17	Time	2w:	2, SUN, 08:34			Contact	C: 01.50/100
18	Time	2w:	2, SUN, 08:34			Frequency	08700
19	Delayer	D 0	30s			Flag	M 0: off
20	Delayer	D 1	1s			Relay 1	on
21	Delayer	D 1	1s			Delayer	D 2: on
22	Delayer	D 2	1s			Relay 1	off
23	Delayer	D 2	1s	& M	M 0	Delayer	D 1: on
24	Delayer	D 3	2s			Relay 1	on
25	Delayer	D 3	2s			Delayer	D 4: on
26	Delayer	D 4	2s			Relay 1	off
27	Delayer	D 4	2s	& M	M 0	Delayer	D 3: on
28	Init					Relay 1	off
29	Init					Relay 2	off
30	Init					Flag	M 0: off

Annex

Notes

State if the programmed pump is reconnected to the mains voltage:

The timer software generates the state of the pump which the pump would have precisely had at this time if it would not have been disconnected from the mains voltage. This concerns linked or non-delayed actions.

Effective settings after switching the timer between "active" and "passive":

The settings of the timer are stored and become effective again when switching from "passive" to "active".

The settings of the operating modes are stored and become effective again when switching from "active" to "passive".

Storage duration of your programming:

The pump stores your programming for up to 10 years, the time for approx. 1 month without mains supply, if the pump has been connected to the mains supply for 24 h prior to this.

What relay "on" means:

To logically switch to "on" means for a relay, which has been programmed "dropping out" (relay menu or Identcode) that it opens - physically switches to "off"! To logically switch to "on" means for a relay, which has been programmed "picking-up" (relay menu or Identcode), that it closes – physically actually switches to "on".

Socket "Timer"

The signals of 4 potential-free contacts can be supplied as Inputs I:.

Assignments at the pump



Assignments at the plug



Pin	Function	5-wire cable
Pin 1	10	brown
Pin 2	11	white
Pin 3	12	blue
Pin 4	Ground	black
Pin 5	13	grey



2. Diagram Switching times



Annex

Programme	Triggering		Condition		Action		
09	Time	w:	w: FRI, 03:23 p.m.	& M	Mxx:	Contact	00.50/100