

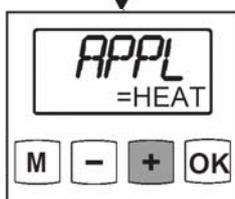
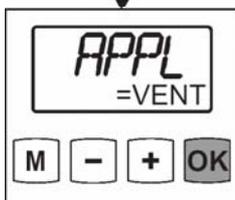
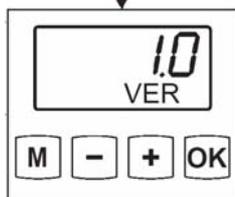
PDS2-V Ventilation / General Purpose Controller with Modbus

The PDS2-V is a ventilation controller designed to control temperature in air handling units and in ventilation plants. The controller can provide constant temperature control or the setpoint can be reseted by the room / extract air temperature. Remote setpoint potentiometer can be added to the system. The controller has built-in LCD display that indicates the current status of the controller and can be used for the controller configuration. The controller is easy to use and has DIN-rail mounting. The built-in RS485 Modbus communication allows the controller to be connected to central supervisory system such as WebBiter embedded web-server or to a BMS system.



Model Types	Model	Description
	PDS2-V	PDS2-V Ventilation / General Purpose Controller with Modbus Communications
Technical Data	Power supply Inputs	24Vac/dc (20...28V), NOTE! 3-Point and Thermic Valve requires ac supply voltage 2 x Pt1000 Temperature 1 x Analogue/Resistive Signal for Remote Setpoint
	Outputs	1 x Analogue Input for Frost Protection Controller Limiting Signal or for Frost Stat 3 x 0...10Vdc (Control Valve, TIME switch AO4 output and Alarm Output) 4 x 24Vac Triacs, 1A maximum (3-Point Valve, Thermic Valve and Alarm Output)
	Communications	RS-485 Modbus RTU, 9600/19200/38400 bps, 8 data bits, Parity None, 1 Stop Bit (Up to 128 devices per segment)
	Internal Clock Battery backup	Inaccuracy max. +/- 1min / year 1 Day
	Display	LCD Display, automatically rotating display for the user access to all configuration parameters
	Buttons	4 Touch Buttons for the Programming and User Configuration
	Wiring Terminals	1.5 mm ² separable connectors
	Operating Humidity	0...95% rH (non-condensing)
	Protection Class	IP20
	Standards	2004/108/EC (EMC Directive) EN61000-6-3: 2001 (Generic Emissions House Hold) EN61000-6-2: 2001 (Generic Immunity Industrial)
	Mounting	DIN-rail Mounting
	Overall size	53W x 90H x 58D mm

BASIC APPLICATION MODE SELECTION (VENT/HEAT)



When changing application mode (VENT/HEAT). Push '+' and '-' keys at the same time 5 sec. This works with any display at top level.

NOTE! Basic application mode is 'VENT'

Blinking 'VER' appears for 5 sec.

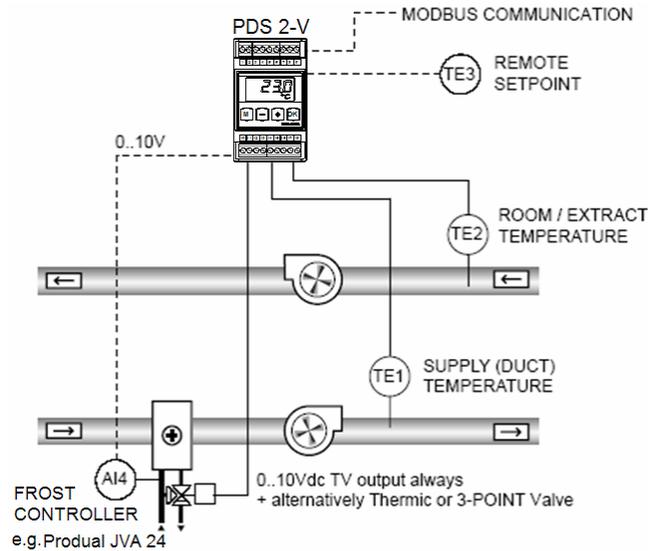
To confirm application mode change push 'OK' key when 'APPL' appears. After pushing 'OK' key 'APPL' starts to blink.

Push '+' key to choose 'HEAT' mode ('-' to choose 'VENT'). Confirming with 'OK' key.

Confirming once more with 'OK' key if you are sure.

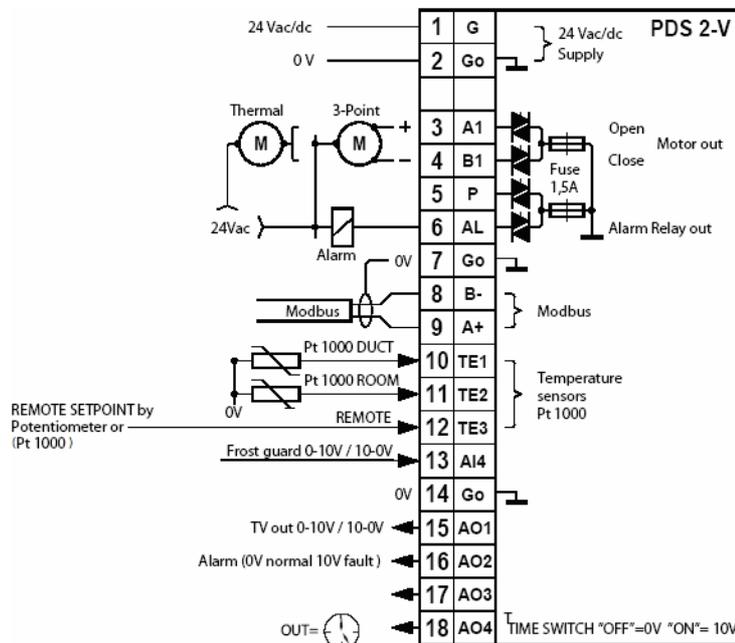
APPLICATION DIAGRAM

The PDS-V controller has been designed to operate stand-alone as a ventilation plant controller. The diagram below illustrates typical application. The controller can operate as a constant discharge controller, or as a room/extract reset controller depending on the configuration.

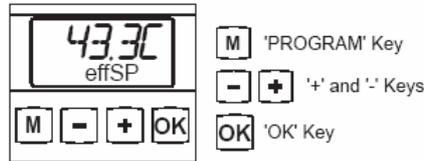


CONNECTION DIAGRAM

WARNING: The electrical installation, device connection and commissioning can only be carried out by qualified professionals and according to the local wiring regulations!



USER DISPLAY

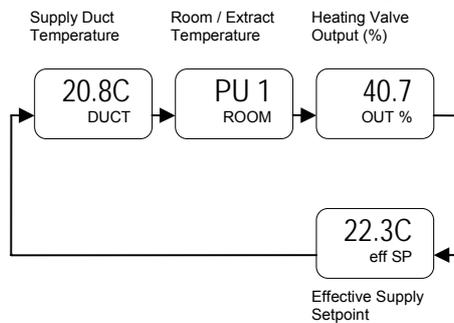


PDS2-H controller auto-rotates on its display the typical measurements and the plant status. This display is activated after a timeout of 30 seconds.

The controller has four (4) touch sensitive buttons for the user interaction (see figure). During the display rotation the rotation can be paused by pressing the "OK" key. The rotation can be re-activated by pressing the "OK" key again. By repeatedly pressing the "OK" key the required parameter can be selected.

After pausing the rotation, the controller returns to the auto-rotation mode automatically after 60 seconds.

The display rotates between the following readings:



NOTE! PDS 2 automatically add values (ex. FGLIM = Frost Guard effect) to this rotation if this value have an regulator influence.

USER SETTINGS

The room setpoint installation:

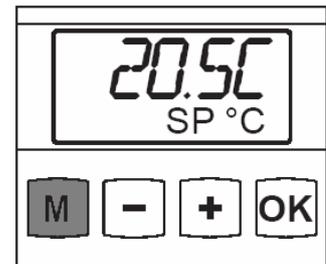
By pressing the "M" key the user can see the current required setpoint.

1. Press 'M' key to display the current setpoint (SP).
2. Press '+' and '-' keys to change the setpoint.
3. Once the required setting is found press 'OK' to accept the new setting.

The controller returns to the normal user display.

The remote room setpoint installation (potentiometer (TE3) has been enabled):

By pressing the "M" key the user can see the current remote setpoint reading.



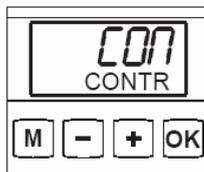
PROGRAMMING MODE

To enter programming mode, press the following



The 'CONTROL' menu selection is displayed on the screen.

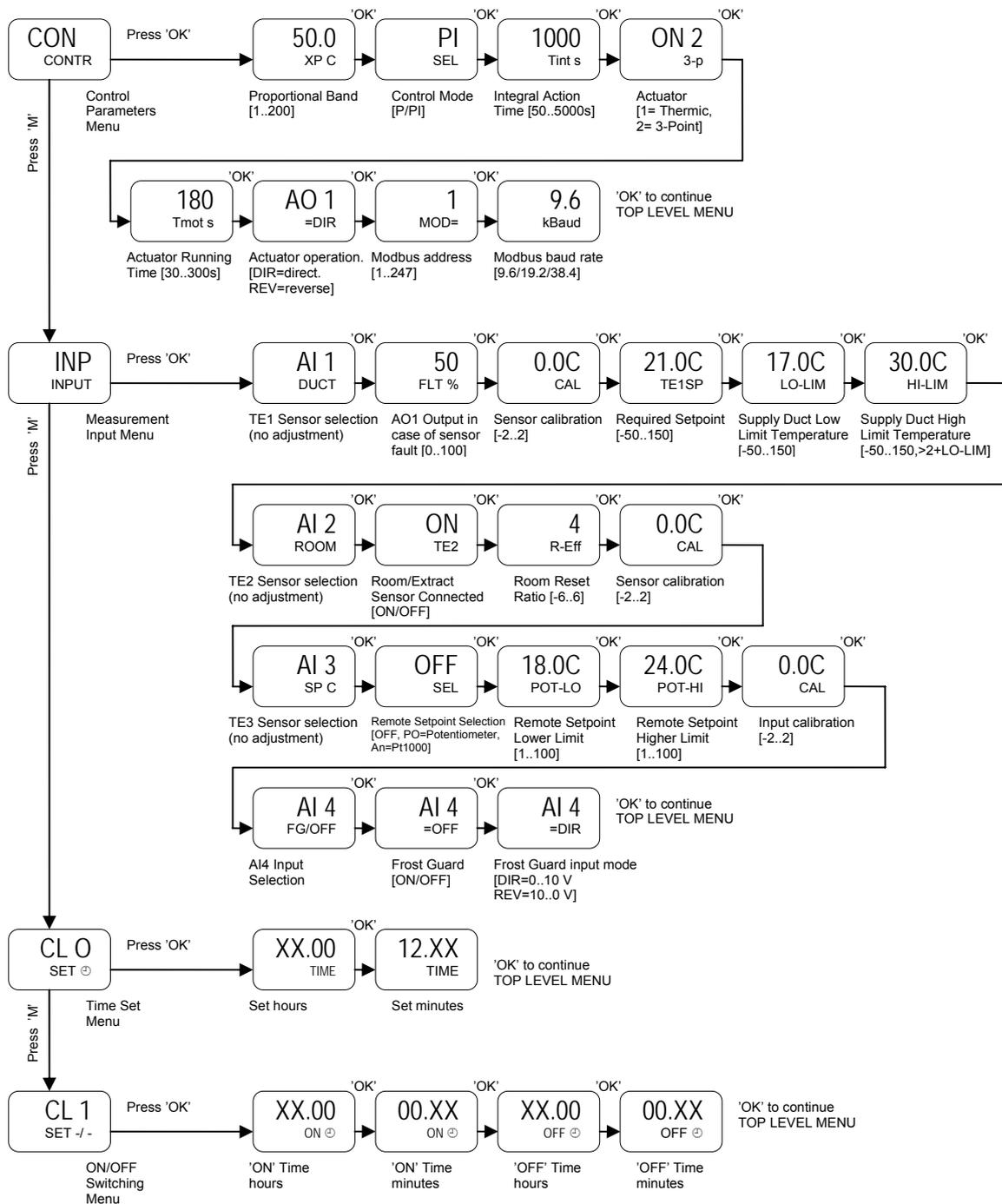
Press 'OK' to enter to 'CONTR' (Control) menu.



The controller settings, 3-point actuator running time, the room reset ratio etc. can be adjusted to meet the site requirement by entering to the programming mode.

To enter programming mode press the following keys '+', 'OK', 'OK' and 'M'.

MENU STRUCTURE

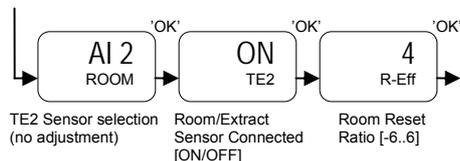


NOTE! To Leave menu push 'M' key about 5 sec. or wait for 1 minute

ROOM/EXTRACT RESET CONTROLLER

In room / extract control the effective supply setpoint is calculated by resetting the setpoint based on the room/extract temperature and on the extract ratio.

$$\text{Supply Setpoint} = \text{Supply Setpoint} + \text{TE2 Setpoint} - \text{TE2} \times \text{Room Reset Ratio}$$

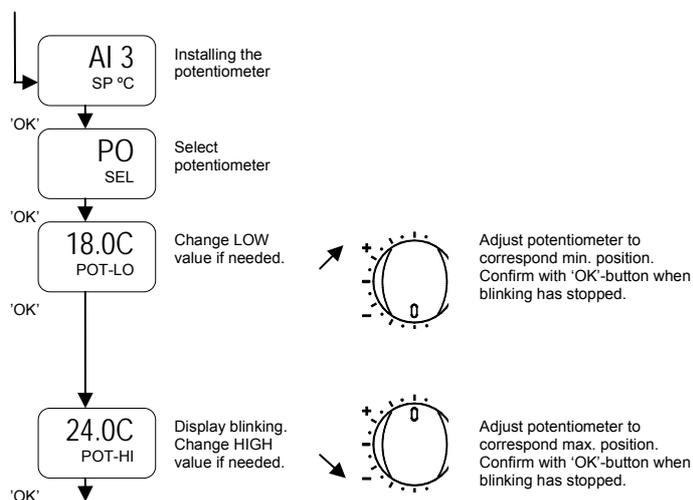


REMOTE SETPOINT

The PDS 2 remote setpoint is adjusted by a potentiometer or with a resistance value representing PT1000. Connecting terminals in PDS 2: TE3 (12) and Go(14).

Resistance range of potentiometer (Produal TEHR Pt 1000-P/PDS 2) is 1kΩ – 1,5kΩ. Connecting terminals in PDS 2: P- (4) and P out(5).

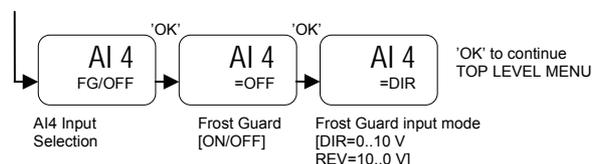
Changes in programming menu:



Remote setpoint is inspectable via user interface.

FROST INPUT CONFIGURATION

The analog input 4 of the controller can be configured for frost control. The controller valve output is overdriven by the frost input voltage. The frost input can be connected to a frost controller (Produal JVA24) or fixed 10Vdc supply can be used in conjunction with frost thermostats to overdrive the valve output to 100% in the frost condition.



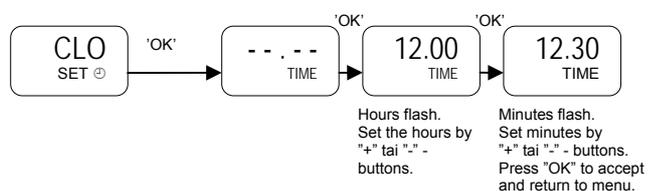
ALARMS

The controller has two alarm outputs (triac and 0...10V) that indicated failure conditions. Display (temperature probes) alarms must be confirmed by 'OK' button.

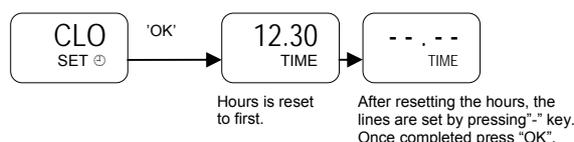
	Connector			
Switches to 0V	6	24Vac Triac	Open = OK Closed = ALARM	Sensor fault
Voltage output	16	0/10 V	0 V = OK 10 V = ALARM	Sensor fault

CLOCK

The clock is set as follows:

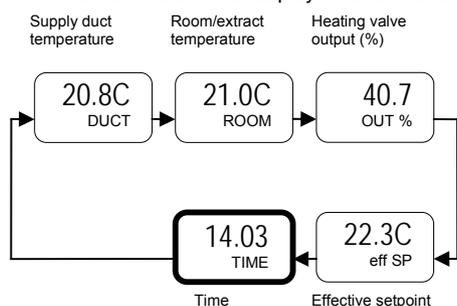


The clock is disabled by removing the time and replacing it by "-.-.-". By diabling the clock the time display is removed from the user display (rotating display) and the menu to set the switching times is hidden.



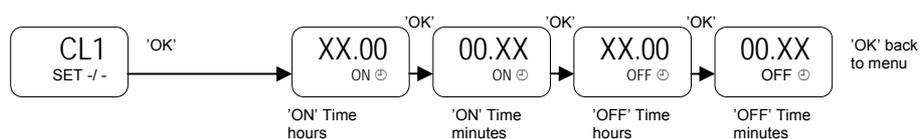
CLOCK DISPLAY

Once the clock is set it is displayed on the rotating user display.



SETTING SWITCHING TIMES

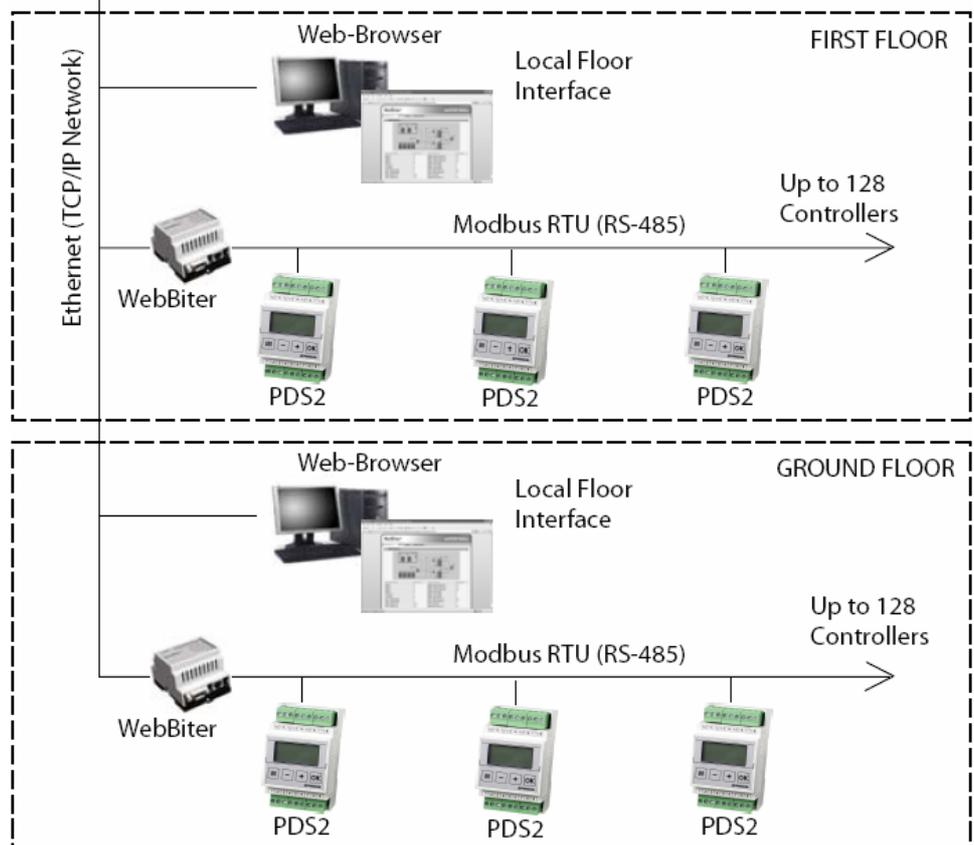
Once the clock has been set, switching times menu is displayed on the controller configuration level. When the clock is activated (ON), the AO4 = 10V and when the clock is inactivated (OFF), the AO4 = 0V.



NETWORK DIAGRAMS

Up to 128 PDS2 controllers can be connected to a single network segment. The diagrams below illustrate the typical installation options.

It possible to connect the controllers to an existing BMS (e.g. to TREND BMS) via a Modbus gateway. Or the controllers can be connected to the WebBiter embedded web-server that provides BMS front end capability and access via a standard web-browse. Please contact Produal for more information.



PDS2 VER.1.1 The controller supports the following Modbus registers and function codes.

Register	Parameter Description	Data Type	Value	Range
FUNCTION CODE 01 - READ COILS				
2	CLOCK by Modbus	Bit0		On - Off
3	Optimizing by Modbus	Bit1		On - Off
4	Overdrive Enable	Bit2		On - Off
5	Modbus Setpoint Enable	Bit4		On - Off
6	Alarm	Bit5		On - Off
FUNCTION CODE 02 - READ DISCRETE INPUTS				
10002	CLOCK Asked by PDS2	Bit0		On - Off
10003	Optimizing Asked by PDS2	Bit1		On - Off
10004	CLOCK Active	Bit2		On - Off
10005	Optimizing Active	Bit3		On - Off
10006	PUMP	Bit4		On - Off
FUNCTION CODE 03 - READ HOLDING REGISTERS				
40003	Coils 16 - 01	16 bit		Bits 15 - 0
40004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
40005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
40006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
40007	ON-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
40008	OFF-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
41793	ON-TIME - OFF-TIME (2 Reg. long)	Timechannel		hh:mm hh:mm
FUNCTION CODE 04 - READ INPUT REGISTERS				
30002	Discrete Inputs 16 - 01	16 bit		Bits 15 - 0
30003	Coils 16 - 01	16 bit		Bits 15 - 0
30004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
30005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
30007	ON-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
30008	OFF-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
30009	Temperature TE1	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30010	Temperature TE2	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30011	Temperature TE3	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30012	Input Voltage AI4	Signed 16	0..100	0,0 ... 10,0 (V)
30013	Effective Setpoint	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30014	SP / Remote SP	Signed 16	-500...1500	-50,0 ... 150,0 (C)

30015	Ouput	Signed 16	0..1000	0,0 ... 100,0 (%)
FUNCTION CODE 05 - WRITE SINGLE COIL				
2	CLOCK by Modbus	Bit0		On - Off
3	Optimizing by Modbus	Bit1		On - Off
4	Overdrive Enable	Bit2		On - Off
5	Modbus Setpoint Enable	Bit4		On - Off
6	Alarm	Bit5		(On -) Off
FUNCTION CODE 06 - WRITE SINGLE REGISTER				
40003	Coils 16-01	16 bit		(Bits 15 - 0)
40004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
40005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
40006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
40007	ON-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
40008	OFF-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
FUNCTION CODE 16 - WRITE MULTIPLE REGISTERS				
40003	Coils 16-01	16 bit		Bits 15 - 0
40004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
40005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
40006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
41793	ON-TIME - OFF-TIME (2 Reg. long)	Timechannel		hh:mm hh:mm
FUNCTION CODE 22 - MASK WRITE REGISTER				
40003	Coils 16 - 01	16 bit		AND 0 ... 0xFFFF OR 0 ... 0xFFFF

PDS2-H Weather Compensator

The PDS2-H is a weather compensator designed to control accurately heating systems. The controller calculates the required flow temperature setpoint based on the outside air temperature. This allows the heating water temperature to be adjusted according to the weather conditions outside.

Room temperature sensor option can shift the supply water temperature setpoint based on the internal heat gains or losses providing improved energy efficiency and comfort.

Outside ECO feature will disable automatically the pump output when the outside air temperature exceeds the ECO setpoint.

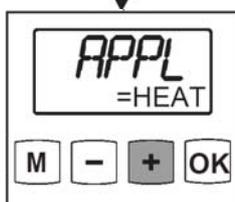
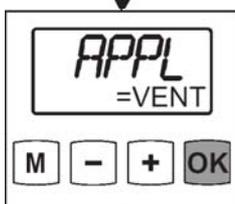
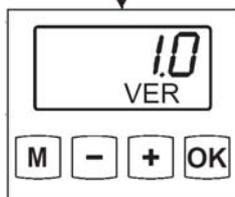
The controller has built-in LCD display that indicates the current status of the controller and can be used for the controller configuration.

The controller is easy to use and has DIN-rail mounting. The built-in RS485 Modbus communication allows the controller to be connected to central supervisory system such as WebBiter embedded web-server or to a BMS system.



Model Types	Model	Description
	PDS2-H	PDS2-H Weather Compensator with Modbus Communications
Technical Data	Power supply	24Vac/dc (20...28V), NOTE! 3-Point and Thermic Valve requires ac supply voltage
	Inputs	3 x Pt1000 Temperature (WATER , OUT , ROOM) 1 x Analogue / Digital
	Outputs	4 x 0..10Vdc (Control Valve, Alarm, ECO and TIME SWITCH) 4 x 24Vac Triacs, 1A maximum (3-Point or Thermic Valve, Pump and Alarm Output)
	Communications	RS-485 Modbus RTU, 9600/19200/38400 bps, 8 data bits, Parity None, 1 Stop Bit (Up to 128 devices per segment)
	Internal Clock	Inaccuracy max. +/- 1min / year
	Battery backup	1 Day
	Display	LCD Display, automatically rotating display for the user access to all configuration parameters
	Buttons	4 Touch Buttons for the Programming and User Configuration
	Wiring Terminals	1.5 mm ² separable connectors
	Operating Humidity	0..95% rH (non-condensing)
	Protection Class	IP20
	Standards	2004/108/EC (EMC Directive) EN61000-6-3: 2001 (Generic Emissions House Hold) EN61000-6-2: 2001 (Generic Immunity Industrial)
	Mounting	DIN-rail Mounting
	Overall size	53W x 90H x 58D mm

BASIC APPLICATION MODE SELECTION (VENT/HEAT)



When changing application mode (VENT/HEAT). Push '+' and '-' keys at the same time 5 sec. This works with any display at top level.

NOTE! Basic application mode is 'VENT'

Blinking 'VER' appears for 5 sec.

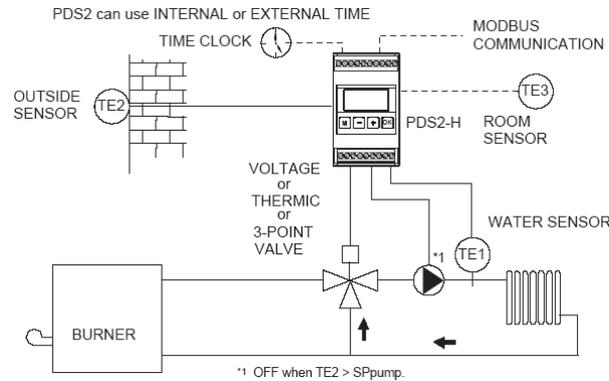
To confirm application mode change push 'OK' key when 'APPL' appears. After pushing 'OK' key 'APPL' starts to blink.

Push '+' key to choose 'HEAT' mode ('-' to choose 'VENT'). Confirming with 'OK' key.

Confirming once more with 'OK' key if you are sure.

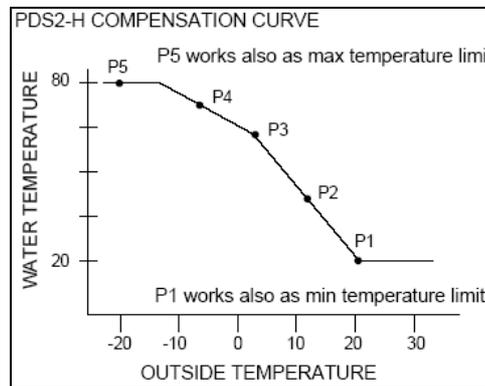
APPLICATION DIAGRAM

The PDS2-H controller has been designed to operate stand-alone as a heating weather compensator. The diagram below illustrates the typical application.



OUTSIDE SENSOR

The controller measures the outside air temperature and calculates the effective flow setpoint using a built-in compensation curve. When the outside air temperature is colder the supply water temperature is increased and when it is warm outside the required water temperature is lowered.

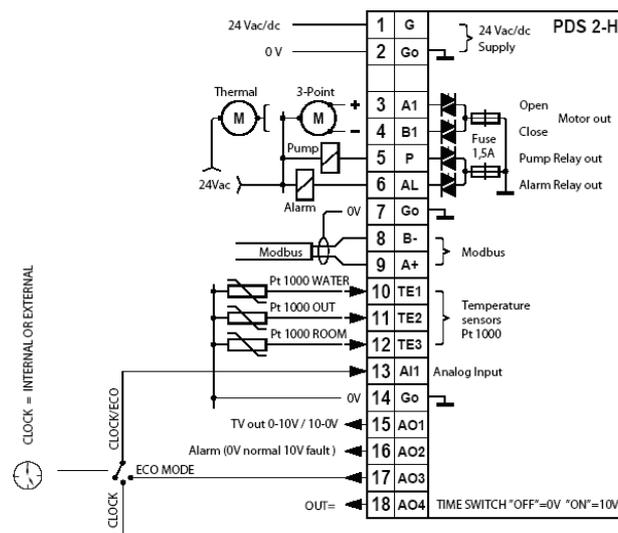


ROOM SENSOR

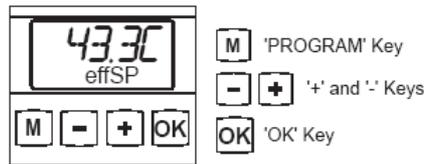
The optional room temperature sensor will automatically compared the room temperature to the required setpoint and adjust the compensation curve upwards and downwards as required.

CONNECTION DIAGRAM

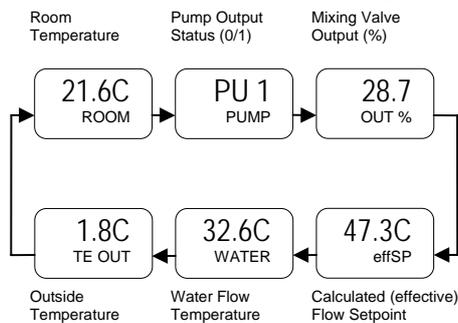
WARNING:The electrical installation, device connection and commissioning can only be carried out by qualified professionals and according to the local wiring regulations!



USER DISPLAY



The display rotates between the following readings:



PDS2-H controller auto-rotates on its display the typical measurements and the plant status. This display is activated after a timeout of 30 seconds.

The controller has four (4) touchsensitive buttons for the user interaction (see figure). During the display rotation the rotation can be paused by pressing the "OK" key. The rotation can be re-activated by pressing the "OK" key again. By repeatedly pressing the "OK" key the required parameter can be selected.

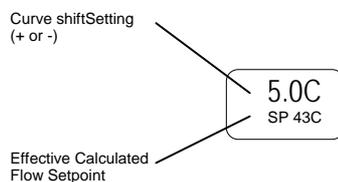
After pausing the rotation, the controller returns to the auto-rotation mode automatically after 60 seconds.

NOTE! PDS 2 automatically add values (ex. Hi Flow Limit) to this rotation, if this value have an regulator influence.

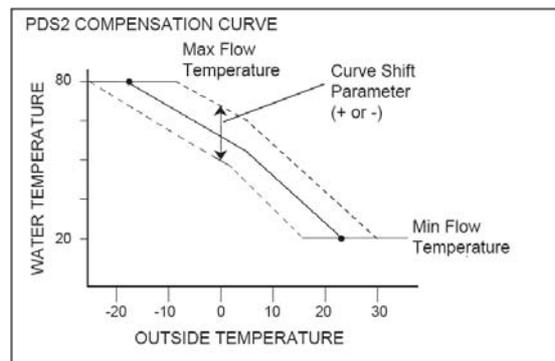
USER SETTINGS

By pressing the 'M' key the user can adjust the heating compensation curve upwards or downwards (+/- 25°C).

- Press 'M' key to display the current CURVE SHIFT setting.
- Press '+' and '-' keys to shift the compensation curve vertically upwards or downwards.
- Once the required setting is found press 'OK' to accept the new setting. The controller returns to the normal user display.



NOTE: The effective calculated setpoint is automatically updated as and when the curve shift setting is changed.



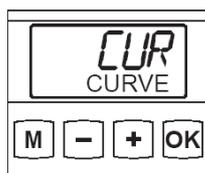
PROGRAMMING MODE

To enter programming mode, press the following



The 'CURVE' menu selection is displayed on the screen.

Press 'OK' to enter to 'CURVE' (Compensation Curve) menu.

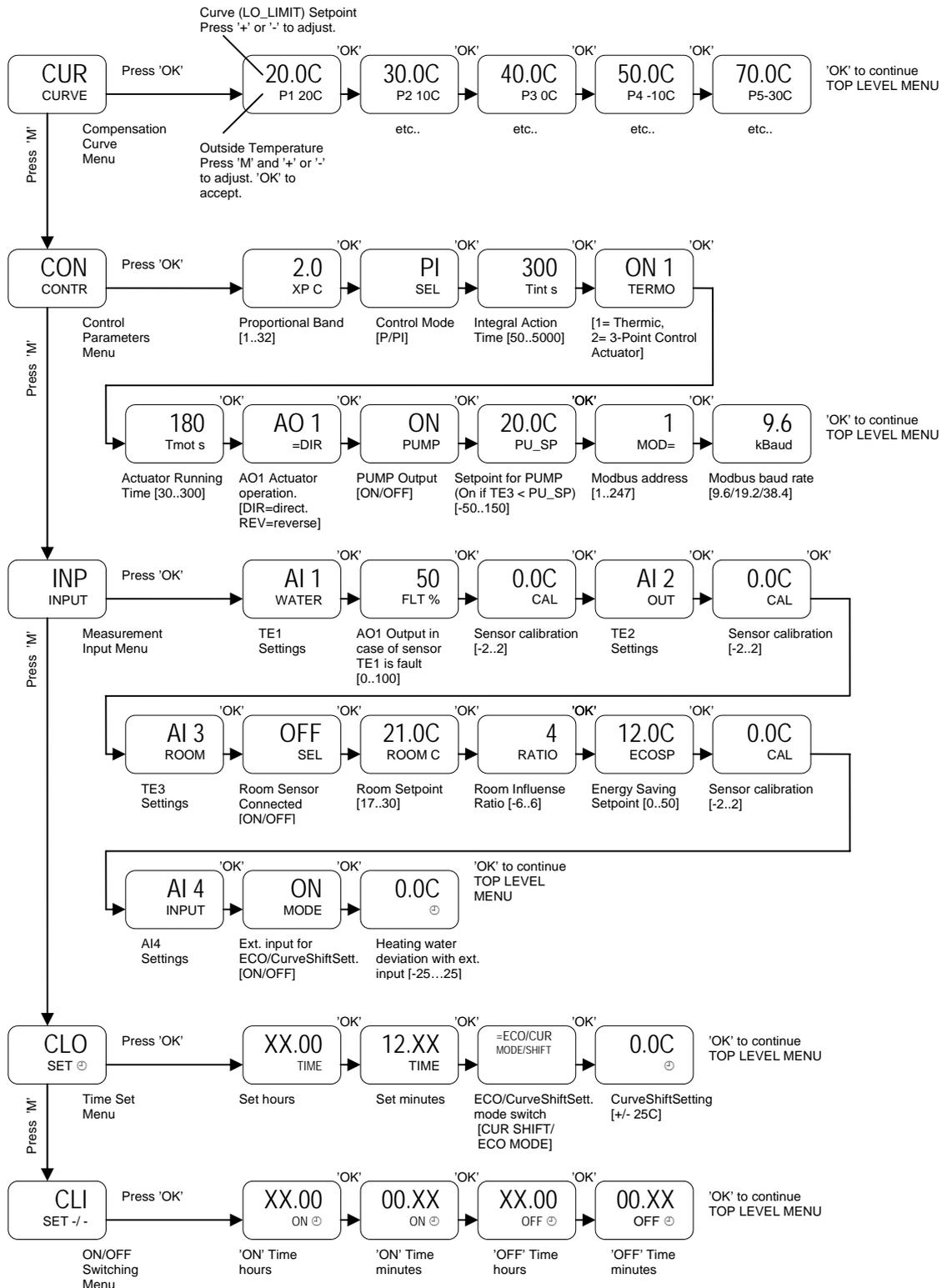


The controller is operational without need for any programming. The controller expects to see flow and outside air temperature sensors.

The controller compensation curve, 3-point actuator running time, the room setpoint etc. can be adjusted to meet the site requirement by entering to the programming mode.

To enter programming mode press the following keys '+', 'OK', 'OK' and 'M'.

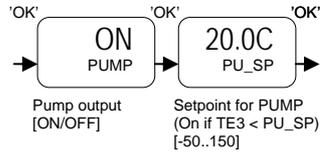
MENU STRUCTURE



NOTE! To Leave menu push 'M' key about 5 sec. or wait for 1 minute

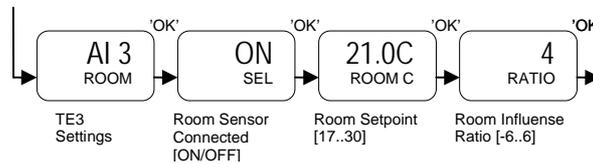
THE CONTROL OF CIRCULATION WATER PUMP

The circulation water pump is switched off when the out temperature > pump setpoint + 2 °C hysteresis and switched on when the out temperature < pump setpoint. The control of circulation water pump is used connectors 1 (G) and 5 (P).



ROOM RESET CONTROL

This function will automatically adjust the water flow temperature according to the space conditions. To activate this function connect (e.g. Produal TEHR-PT1000) sensor or wireless room sensor via FLTA receiver to the PDS 2 controller.



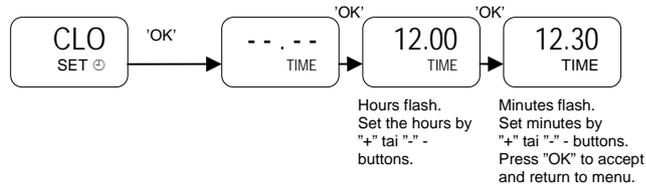
ALARMS

The controller has two alarm outputs (triac and 0...10V) that indicated failure conditions. Display (temperature probes) alarms must be confirmed by 'OK' button.

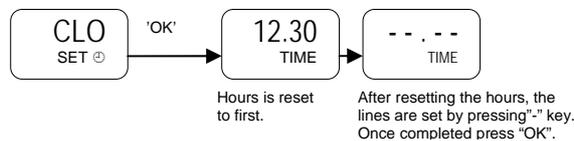
	Connector			
Switches to 0V	6	24Vac Triac	Open = OK Closed = ALARM	Sensor fault
Voltage output	16	0/10 V	0 V = OK 10 V = ALARM	Sensor fault

CLOCK

The clock is set as follows

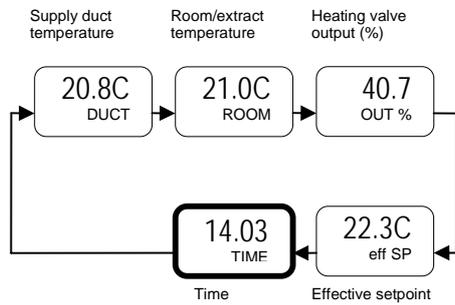


The clock is disabled by removing the time and replacing it by "-.-.-". By disabling the clock the time display is removed from the user display (rotating display) and the menu to set the switching times is hidden.



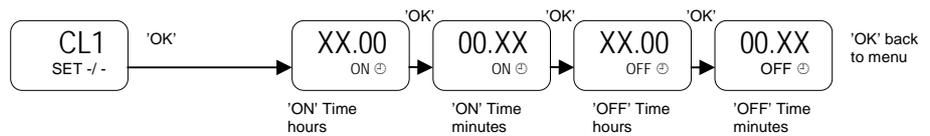
CLOCK DISPLAY

Once the clock is set it is displayed on the rotating user display.



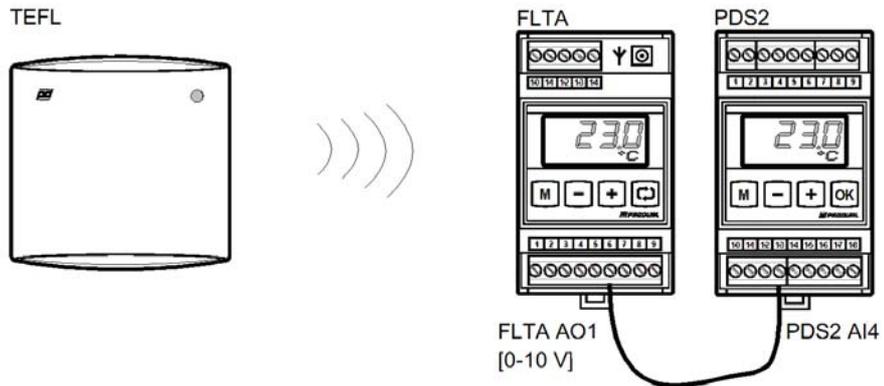
SETTING SWITCHING TIMES

Once the clock has been set, switching times menu is displayed on the controller configuration level. When the clock is activated (ON), the AO4 = 10V and when the clock is inactivated (OFF), the AO4 = 0V.

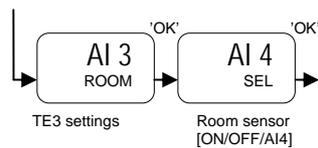


WIRELESS ROOM SENSOR

If required, PDS 2 controller can be connected to a wireless room sensor via FLTA base station. The diagram below illustrates the configuration.



The wireless room sensor is activated from the AI3 menu by selecting the AI4 option.



If the AI4 voltage drops below 2V, the controller will consider this as a sensor fault. 2...10Vdc input signal equal to 0...50 °C room temperature.

NOTE! If wireless room sensor is used with the PDS 2-H, the external CurveShiftSetting /ECO is disabled.

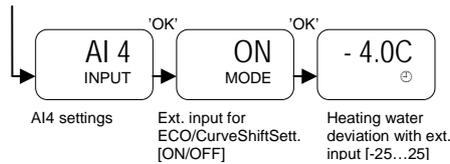
CURVE SHIFT SETTING

Temperature of heating water is possible to set up/down -25...25 °C by the external input (AI4) or the internal clock. Shifting the compensation curve downwards during the night time is easy way to save energy.

NOTE! Wireless sensor and ECO mode is disabled.

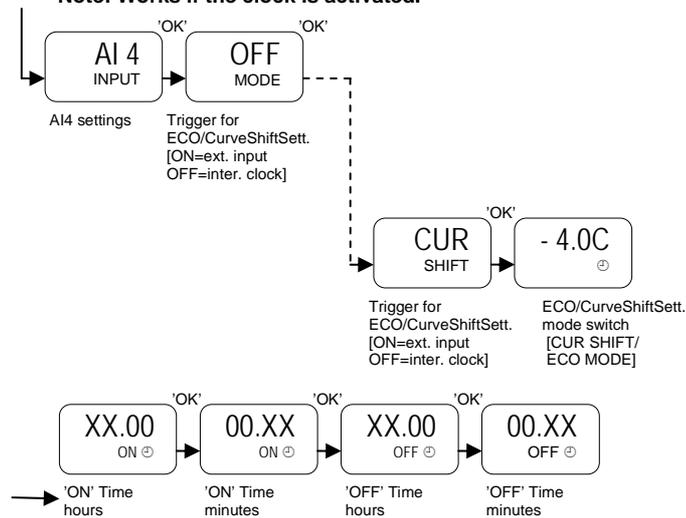
Curve shift setting mode with:

- EXTERNAL INPUT, when AI4 mode = "ON" and curve shift temperature is adjusted. Furthermore AI4 is connected to the ground.



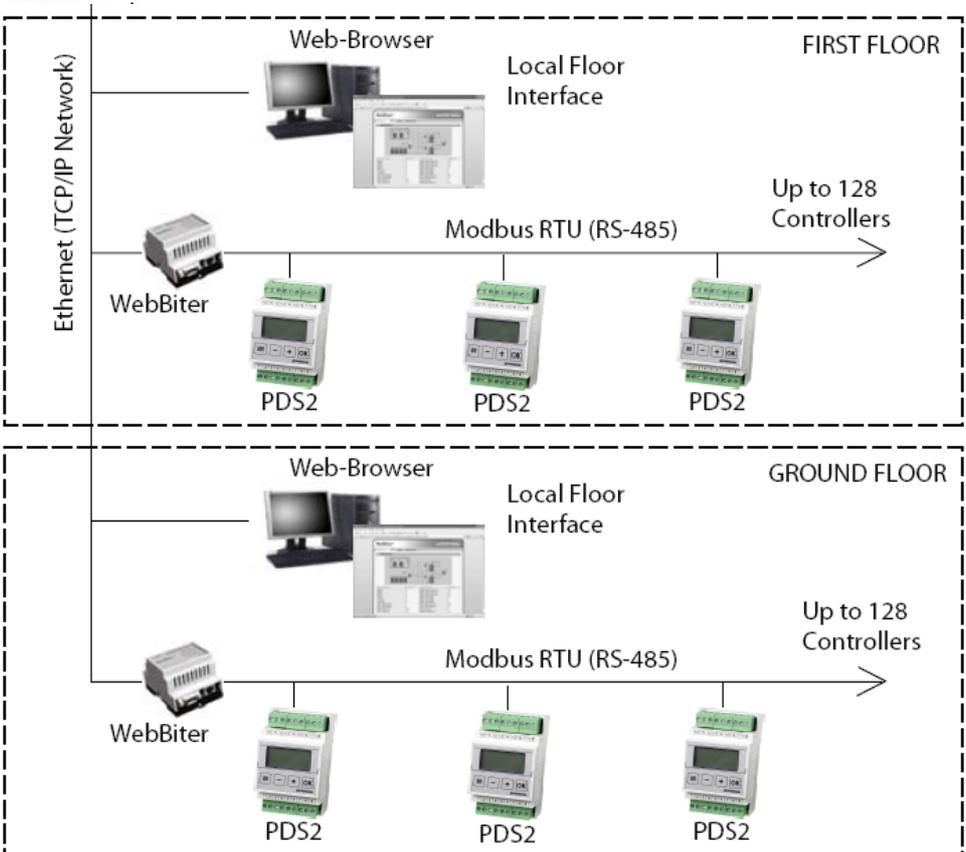
- INTERNAL CLOCK, when AI4 mode = "OFF", SHIFT=CUR, curve shift temperature is adjusted and ON/OFF times are adjusted.

Note! Works if the clock is activated.



NETWORK DIAGRAMS

Up to 128 PDS2 controllers can be connected to a single network segment. The diagrams below illustrate the typical installation options. It is possible to connect the controllers to an existing BMS (e.g. to TRENDS BMS) via a Modbus gateway. Or the controllers can be connected to the WebBiter embedded web-server that provides BMS frontend capability and access via a standard web-browser. Please contact Produal for more information.



PDS2 VER.1.1 The controller supports the following Modbus registers and function codes.

Register	Parameter Description	Data Type	Value	Range
FUNCTION CODE 01 - READ COILS				
2	CLOCK by Modbus	Bit0		On - Off
3	Optimizing by Modbus	Bit1		On - Off
4	Overdrive Enable	Bit2		On - Off
5	Modbus Setpoint Enable	Bit4		On - Off
6	Alarm	Bit5		On - Off
FUNCTION CODE 02 - READ DISCRETE INPUTS				
10002	CLOCK Asked by PDS2	Bit0		On - Off
10003	Optimizing Asked by PDS2	Bit1		On - Off
10004	CLOCK Active	Bit2		On - Off
10005	Optimizing Active	Bit3		On - Off
10006	PUMP	Bit4		On - Off
FUNCTION CODE 03 - READ HOLDING REGISTERS				
40003	Coils 16 - 01	16 bit		Bits 15 - 0
40004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
40005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
40006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
40007	ON-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
40008	OFF-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
41793	ON-TIME - OFF-TIME (2 Reg. long)	Timechannel		hh:mm hh:mm
FUNCTION CODE 04 - READ INPUT REGISTERS				
30002	Discrete Inputs 16 - 01	16 bit		Bits 15 - 0
30003	Coils 16 - 01	16 bit		Bits 15 - 0
30004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
30005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
30007	ON-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
30008	OFF-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
30009	Temperature TE1	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30010	Temperature TE2	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30011	Temperature TE3	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30012	Input Voltage AI4	Signed 16	0..100	0,0 ... 10,0 (V)
30013	Effective Setpoint	Signed 16	-500...1500	-50,0 ... 150,0 (C)
30014	SP / Remote SP	Signed 16	-500...1500	-50,0 ... 150,0 (C)

30015	Ouput	Signed 16	0..1000	0,0 ... 100,0 (%)
FUNCTION CODE 05 - WRITE SINGLE COIL				
2	CLOCK by Modbus	Bit0		On - Off
3	Optimizing by Modbus	Bit1		On - Off
4	Overdrive Enable	Bit2		On - Off
5	Modbus Setpoint Enable	Bit4		On - Off
6	Alarm	Bit5		(On -) Off
FUNCTION CODE 06 - WRITE SINGLE REGISTER				
40003	Coils 16-01	16 bit		(Bits 15 - 0)
40004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
40005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
40006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
40007	ON-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
40008	OFF-TIME in minutes	Signed 16	TIME OFF 65535	TIME SET 0 ... 1439
FUNCTION CODE 16 - WRITE MULTIPLE REGISTERS				
40003	Coils 16-01	16 bit		Bits 15 - 0
40004	Overdrive Value	Signed 16	0..1000	0,0 ... 100,0 (%)
40005	Setpoint by Modbus	Signed 16	-500...1500	-50,0 ... 150,0 (C)
40006	Modbus CLOCK Deviation	Signed 16	-250...250	-25,0 ... 25,0 (C)
41793	ON-TIME - OFF-TIME (2 Reg. long)	Timechannel		hh:mm hh:mm
FUNCTION CODE 22 - MASK WRITE REGISTER				
40003	Coils 16 - 01	16 bit		AND 0 ... 0xFFFF OR 0 ... 0xFFFF