ACV
EXCELLENCE IN HOT WATER

EVO S

Grundfos UPMXXL 25-120 Pump Control

INSTRUCTIONS

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by ACV.

For the very latest copy of literature for specification and maintenance practices visit our website www/acv/com/gb where you can download the relevant information in PDF format.

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UIN 236075 A01

CONTENTS

1.1 INTRODUCTION

This kit is suitable for the following boilers:

Evo S range of boilers utilising the Grundfos UPMXXL 25-120 pump.

This manual explains how to wire the pump leads to the installer wiring connections and determine the pump settings within the boiler control.

The Pump is powered by a 230 V auxillary supply within the boiler, and controlled by a PWM signal.

Table 1 - Evo S from ACV

Evo S	Boiler Size
Evo S	40
Evo S	60
Evo S	70
Evo S	80
Evo S	100
Evo S	120

1.2 CONTENTS

This kit includes the following items:

Item	Description
1.	Grundfos UPMXXL 25-120 pump
2.	Fibre Washer Kit
3.	Instructions

2.1 PREPARATION

Install the Pump Control kit as follows:

⚠ WARNING: Be careful when you install electrical connections. Electric shock can cause serious injury or death and can cause damage to equipment.

1. Make sure that the electrical power supply to the boiler is set to OFF. For safe electrical isolation refer to Gas Safe technical bulletin 118. All work must be carried out by a competent person.
2. For access to the control box (refer to manual ACV Evo S INSTALLATION, COMMISSIONING AND SERVICING INSTRUCTIONS Frame 4.6.1).

Table 2 - Evo S no separation

Boiler model	Flow rate Q (m³/hr) Δt 20° C	Head (m)	Pump used
Evo S 40	1.72	4.58	Grundfos UPMXXL 25-120
Evo S 60	2.59	6.01	
Evo S 70	3.02	5.81	
Evo S 80	3.45	4.89	
Evo S 100	4.28	7.29	
Evo S 120	5.14	7.75	

2.2 INSTALLATION

Install the pump electrical connections as follows (refer to Figure 1).

1. Mains power connections 13 earth, 14 live and 15 neutral.
2. PWM connections 37 ground (Blue) and 38 PWM (Brown) signal, the remaining Black wire should be taped back or removed.

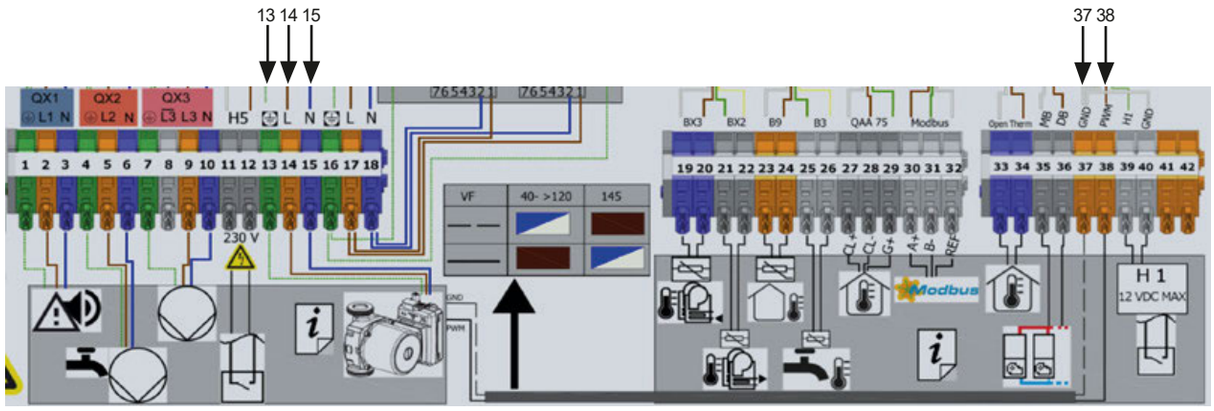

Figure 1 - Pump electrical connections

2.3 PUMP CONFIGURATION

The following parameters configure the PWM output to control a boiler pump.

Table 3 - Evo S PWM output

Line No.	Parameter	Settings
6085	Function output P1	Boiler pump Q1
6086	Signal logic output P1	Inverted

2.4 PUMP PERFORMANCE

For pump performance refer to Figure 2 below.

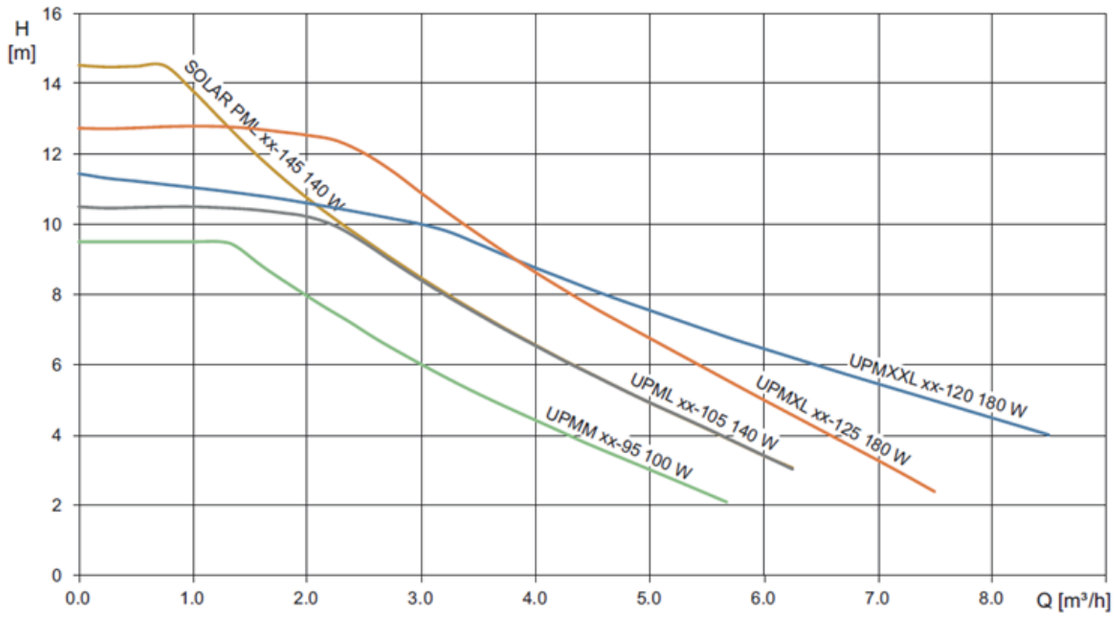

Figure 2 - UPMXXL pump performance curve (Blue line)

2.5 PUMP PARAMETER SETTINGS

The following parameters configure how the pump speed is to be controlled.

Table 4 - Evo S pump speed control

Line No.	Parameter	Settings
2320	Pump modulation	Burner output
2321	Starting speed	100%

The following parameters determine the PWM values to achieve the flow rates for each boiler model.

Table 5 - Cascade Boiler with LLH

Boiler Model	Line No.	Parameter	Setting	Flow Reading (8366) l/m
40	2322	Pump speed min	69	9.5
	2323	Pump speed max	95	28.7
	2505	Threshold flowDetect	8.3	
60	2322	Pump speed min	69	19.2
	2323	Pump speed max	95	39.3
	2505	Threshold flowDetect	16.7	
70	2322	Pump speed min	69	19.2
	2323	Pump speed max	95	50.0
	2505	Threshold flowDetect	16.7	
80	2322	Pump speed min	59	38.3
	2323	Pump speed max	95	69.3
	2505	Threshold flowDetect	35.0	
100	2322	Pump speed min	69	38.3
	2323	Pump speed max	95	71.7
	2505	Threshold flowDetect	35.0	
120	2322	Pump speed min	80	50.0
	2323	Pump speed max	95	86.0
	2505	Threshold flowDetect	45.8	

Table 6 - Cascade Boiler with PHEX

Boiler Model	Line No.	Parameter	Setting	Flow Reading (8366) l/m
40	2322	Pump speed min	69	9.5
	2323	Pump speed max	95	28.7
	2505	Threshold flowDetect	8.3	
60	2322	Pump speed min	69	19.2
	2323	Pump speed max	95	39.3
	2505	Threshold flowDetect	16.7	
70	2322	Pump speed min	80	19.2
	2323	Pump speed max	95	50.0
	2505	Threshold flowDetect	16.7	
80	2322	Pump speed min	69	38.3
	2323	Pump speed max	95	69.3
	2505	Threshold flowDetect	35.0	
100	2322	Pump speed min	80	38.3
	2323	Pump speed max	95	71.7
	2505	Threshold flowDetect	35.0	
120	2322	Pump speed min	85	50.0
	2323	Pump speed max	95	86.0
	2505	Threshold flowDetect	45.8	

Table 7 - Standalone Boiler

Boiler Model	Line No.	Parameter	Setting	Flow Reading (8366) l/m
40	2322	Pump speed min		9.5
	2323	Pump speed max		28.7
	2505	Threshold flowDetect	8.3	
60	2322	Pump speed min		19.2
	2323	Pump speed max		39.3
	2505	Threshold flowDetect	16.7	
70	2322	Pump speed min		19.2
	2323	Pump speed max		50.0
	2505	Threshold flowDetect	16.7	
80	2322	Pump speed min		38.3
	2323	Pump speed max		69.3
	2505	Threshold flowDetect	35.0	
100	2322	Pump speed min		38.3
	2323	Pump speed max		71.7
	2505	Threshold flowDetect	35.0	
120	2322	Pump speed min		50.0
	2323	Pump speed max		86.0
	2505	Threshold flowDetect	45.8	

The process to determine the settings for a modulating boiler pump is dependent upon the hydraulic properties of the installation. For setting of the minimum pump speed the worst-case flow rate of the system should be set, this must be above the minimum flow rate allowed by the boiler model. This will ensure that the minimum speed setting cannot result in a flow rate lower than the minimum flow rate for the boiler model.

The table above shows the initial settings, these can then be adjusted to ensure that the system flow meets the boiler model requirement. The actual value of the flow through the boiler can be read from the boiler HMI under ‘Diagnostics heat generation’ 8366, also by pressing the ‘I’ information button. The value is shown in l/m. So final adjustments can be made to ensure compliance.

Notes

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ACV U.K. Limited
St. David's Business Park,
Dalgety Bay
Fife, Scotland
KY11 9PF

Tel: 0044 (0)1383 820100

www.acv.com/gb