

FP715 & CP715 Programmers



7 day, 5 day/2 day and 24 hour Electronic Programmers for the control of Domestic Central Heating

INSTALLATION INSTRUCTIONS

Specification

Power Supply	: 220/240Vac, 50/60 Hz
Switching Action	: 2 x SPDT, type 1B
Switch Rating	: 220/240Vac, 50/60 Hz, 3(1)A
Timing Accuracy	: ± 1 min/month
Power Reserve	: Minimum 24 hours
Enclosure Rating	: IP30
Maximum Ambient Temp	: 45°C
Designed to meet BS EN60730-2-7	
Overall Dimensions	: Width: 135mm, Height: 88mm, Depth: 32mm
Control Pollution Situation	: Degree 2
Ball Pressure	: 75°C
Rated Impulse Charge	: 2.5Kv

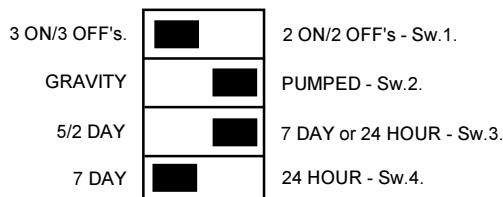
This product complies with the following EC Directives:
Electro-Magnetic Compatibility Directive.
 (EMC) (89\336\EEC), (92\31\EEC)
Low Voltage Directive.
 (LVD) (73\23\EEC), (93\68\EEC)



The unit must be installed by a competent electrician and the installation should conform to IEE Wiring Regulations. The supply to this unit should be wired through a full disconnect in accordance with BS EN60730-1, i.e. one which provides an air gap of at least 3mm in both poles of the mains, e.g. a 13amp plug and unswitched socket, or a switched, fused outlet with neon; either fitted with a 3amp (max.) fuse.

SETTING THE OPERATING MODE

Each model has four small switches on the rear of the case.



SELECTING 3 ON/OFF EVENTS OR 2 ON/OFF EVENTS PER DAY (Sw.1.)

- For 3 ON/OFF events : Set switch 1 to '3 ON/3 OFF's' position.
- For 2 ON/OFF events : Set switch 1 to '2 ON/2 OFF's' position.

SELECTING PUMPED OR GRAVITY OPERATION

- Fully Pumped Heating and Hot Water : Set switch 2 to 'PUMPED' position.
- Pumped Heating / Gravity Hot Water : Set switch 2 to 'GRAVITY' position.

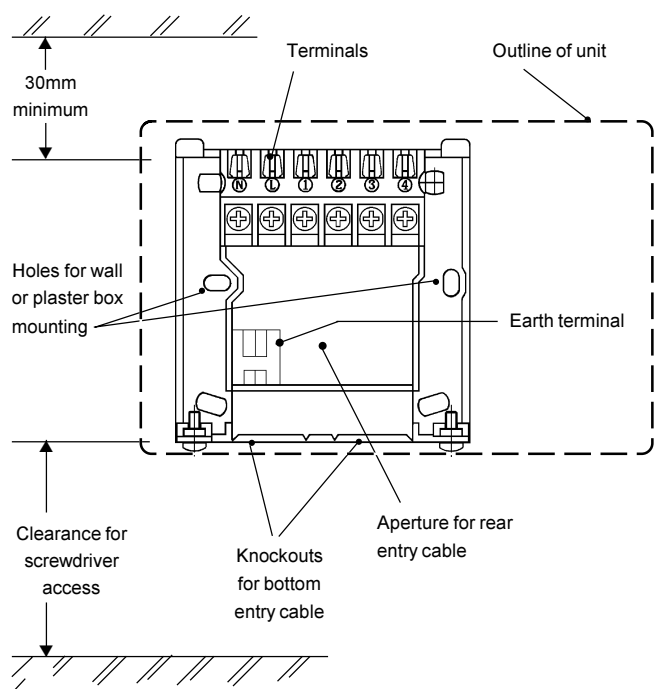
PUMPED OR GRAVITY SWITCHES.

Place switch 2 in PUMPED position if the system being controlled has fully pumped Heating and Hot Water circuits, or has pumped Heating and gravity Hot Water primaries with independent temperature control of Heating and Hot Water. Place the switch in the GRAVITY position if the system has gravity Hot Water primaries with no control valve and auxiliary switch. (See typical control circuits overleaf). If switch 2 is set to GRAVITY then whenever the Heating output is switched ON the Hot Water output will also be switched ON regardless of the current Hot Water programme.

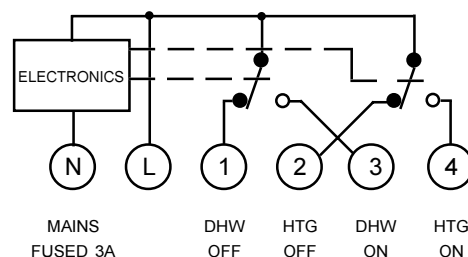
SELECTING 24 HOUR, 5 DAY/2 DAY OR 7 DAY OPERATION (Sw.3 & Sw.4.)

- 24 Hour operation; same programme repeated each day : Set switch 4 to '24 HOUR' position and switch 3 to '7 DAY or 24 HOUR'.
- 5 Day/2 Day operation; one set of programmes repeated Monday to Friday, with another set of programmes for Saturday and Sunday : Set switch 3 to '5 DAY/2 DAY' position.
- 7 Day operation; different programmes required each day : Set switch 4 to '7 DAY' position and switch 3 to '7 DAY or 24 HOUR'.



Wallplate features



Internal Wiring



NEW INSTALLATION

1. Select the desired fixing position.
2. When fixing the wallplate note that the terminals are at the top and the vertical centre line lies between terminals 4 & 5.
3. Fix the wallplate to the wall or plaster box as required.
4. Surface cables can only enter from below the unit. If mounted on a plaster box cables can enter from the rear through the aperture in the wallplate.
5. If the new unit is replacing an existing time control having an incompatible wiring configuration, then the wiring conversions (tables A & B) will be of assistance.
6. These models do not require an earth connection.
7. The diagrams below show typical wiring circuit's with which the units may be used. Terminal to terminal wiring information for complete control systems is supplied with the WB12 Wiring Box which is recommended for ease of installation.
8. Clear all dust and debris from the area.
9. Locate the slots in the top surface of the module over the lugs at the top of the wallplate, and hinge downwards until the module is pressed fully against the wallplate. Tighten the two screws from below to fix the module to the wallplate.
10. Before setting the programmes the unit and circuits should be checked. Ensure the mains power to the control circuit is switched on.
11. Use the  (Hot Water) **SELECT** button to get to the ON mode to switch the hot water output ON. Adjust the cylinder thermostat and check that the service operates correctly. Use the **SELECT** button to get to OFF mode and check that the service does not operate.
12. Use the  (Heating) **SELECT** button to get to the ON mode to switch the heating output ON. Adjust any remote thermostat(s) and check that the service operates correctly. Use the **SELECT** button to get to OFF mode and check that the service does not operate.

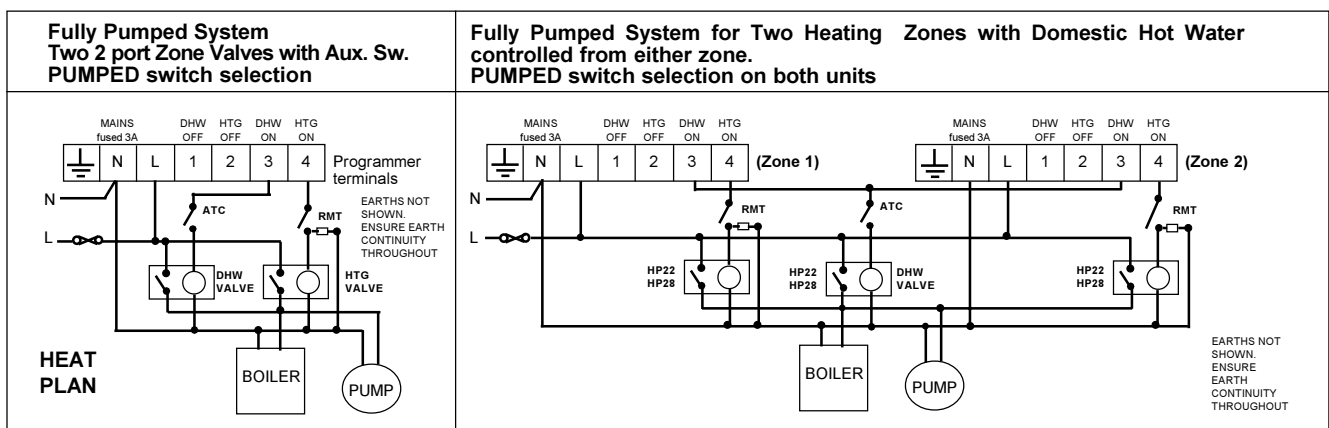
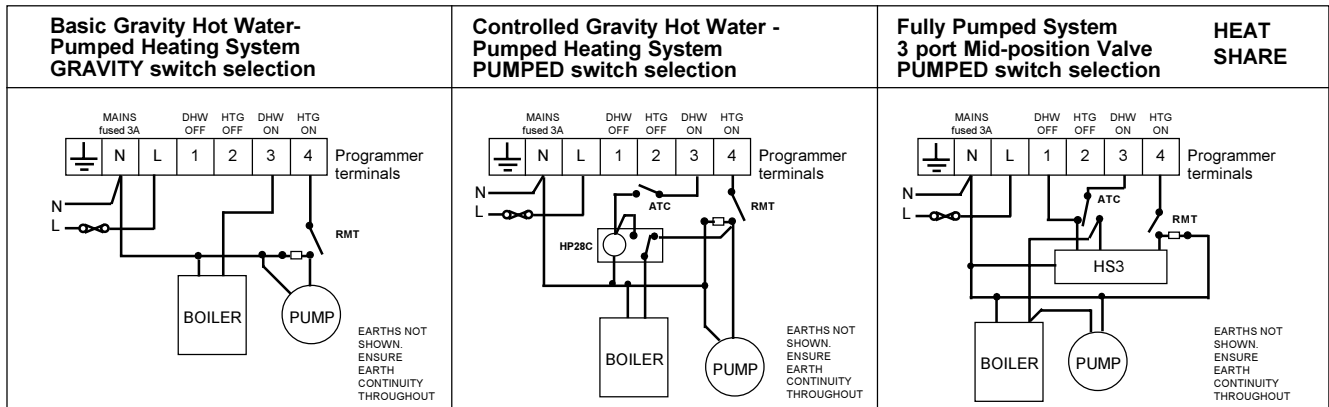
13. These models are supplied with the following factory pre-set programme which will be active after a RESET has been performed:

Days	3 ON/3 OFF Mode	2 ON/2 OFF Mode	Programme	Switching Times
Monday to Friday	1	1	ON	6:30 AM
	2	2	OFF	8:30 AM
	3	-	ON	12:00 PM
	4	-	OFF	12:00 PM
	5	3	ON	5:00 PM
	6	4	OFF	10:30 PM
Saturday & Sunday	1	1	ON	7:30 AM
	2	2	OFF	10:00 AM
	3	-	ON	12:00 PM
	4	-	OFF	12:00 PM
	5	3	ON	5:00 PM
	6	4	OFF	10:30 PM

The factory pre-set programme can be changed as required. When in 7 Day mode it is possible to programme different ON/OFF times every day. When in 24 Hour mode the Monday to Friday programme is used every day. Refer to the User Instructions supplied with the unit.

14. All incorporate time and programme memory backup for up to two days. In the event of a mains power failure, the outputs will switch to OFF and a battery symbol will blink in the display. During the period up to the second midnight following the power failure, power resumption will result in the programmer taking control according to the User's programme. After the second midnight, the display will become blank, and the memory will be lost. After the power is restored the unit should be manually reset using the R/S button behind the flap. The clock will be at 12:00 PM MO with both outputs OFF, the factory pre-set programme will be active, and any User programme requirements will have to be re-entered.

TYPICAL CONTROL CIRCUITS The use of Danfoss Randall Control Packs with WB12 wiring centre is recommended. The WB12 includes terminal to terminal wiring details for HEATSHARE (HSP) and HEATPLAN (HPP) PACKS.



DIRECT PLUG-IN UPGRADE FOR EXISTING PROGRAMMERS.

These models will directly replace the following electro-mechanical and electronic programmers, by plugging-in the new module to the old unit's wallplate. No re-wiring is necessary.

Manufacturer	Model	Programme Selector Position	Programme Selector Position
Danfoss Randall	FP715, CP715	PUMPED	GRAVITY
ACL	LP112 LS241 LS522 LS722 LP241 LP522 LP722	P	G
Drayton	Tempus 3 Tempus 4 Tempus 7	Plug fitted	Plug removed

Manufacturer	Model	Programme Selector Position	Programme Selector Position
Danfoss Randall	FP715, CP715	PUMPED	GRAVITY
Landis & Gyr (Microgyr) (Microgyr)	RWB2 RWB2.9 RWB102 RWB200 RWB252 RWB20 RWB40	16	10
Potterton	Mini-Minder	16	10
Glow-worm	Mastermind	16	10

WIRING CONVERSIONS to be used when replacing the following programmers with the FP715, CP715. Some time controls are connected differently depending on the type of system they are controlling. Consult the column headed "NOTE This conversion ..." to determine whether this table (A) or table (B) on page 4 should be used. If in any doubt, contact our Technical Services Department before proceeding with the replacement. *Any wires connected to switch COMMONS which are linked LIVE on existing wallplates must be transferred to the LIVE terminal on the new wallplate.

NOTE: FP715 is a plug-in compatible with earlier FP15, FP75, CP15, CP75, MP15 and MP75 models.

DANFOSS RANDALL FP715, CP715, (PUMPED)	MAINS			DHW OFF	HTG OFF	DHW ON	HTG ON	*Wires other than links in these terms. go to LIVE		NOTE This conversion applies only if....	An additional terminal block may be required where these disconnected leads (or pairs of leads) should be terminated			
	⏚	N	L					L	L		A	B	C	D
	⏚	N	L					1	2		3	4	5	6
DANFOSS RANDALL 922/972	⏚	N	L	1	4	3	6	2	5	Programme selectors UNLINKED				
DANFOSS RANDALL 4033	⏚	7	6	5	3	4	2	1	-					
DANFOSS RANDALL SET 5	⏚	N	L	3	6	1	4	2	5					
HORSTMANN 423 AMETHYST 7 & 10	⏚	2,3	1	4	6	5	7	-	-		8			
HORSTMANN 424 GEM	⏚	2,3	1,10	6	9	4	7	5	8	Terminals 5,8 & 10 are LINKED				
HORSTMANN LEUCITE 423 & 424	⏚	2	1	4	8	3	6	5	7	Terminals 5 & 7 are LINKED				
HORSTMANN 425 DIADEM	⏚	N	L	3	6	1	4	2	5	Programme selectors UNLINKED				
HORSTMANN 525 & 527	⏚	N	L	3	6	1	4	2	5	Programme selectors UNLINKED				
HONEYWELL ST699	⏚	N	L	7	4	6	3	8	5					
HONEYWELL ST6300 & ST6400	⏚	N	L	1	2	3	4	-	-					
PEGLER SUNVIC SP50/SP100	⏚	N	L	1	4	2	5	3	-		S	S		
POTTERTON EP2000, EP3000	⏚	N	L	1	2	3	4	-	5	Programme selectors UNLINKED	A	B	C	D
RANDALL TSR3+3	⏚	3,6	7	2	5	1	4	-	-					
RANDALL 3033	⏚	1,7	6	5	3	4	2	-	-					
RANDALL 702	⏚	N	L	4	2	3	1	6	5					
SANGAMO FORM 1 410 & 414	⏚	4,5	6	2	7	1	8	3	-					
SANGAMO S409/1	⏚	N,1,3	L	-	-	2	5	-	-		6,4			
SANGAMO S409/3	⏚	3,6	7	4	2	5	1	-	-					
SATCHWELL LIBRA & DHP 2201	⏚	1	2	8	5	6	3	7	4					
SATCHWELL ET 1401 & 1451	⏚	1	2	8	5	7	4	6	3					
SMITHS IND. CENTROLLER 90	⏚	1	2	-	-	5	4	-	-		3	6		
SMITHS IND. CENTROLLER 1000	⏚	N	L	1	2	3	4	-	-	Programme selectors UNLINKED				
SWITCHMASTER 800 & 805	⏚	N	L	4	2	3	1	-	-					
SWITCHMASTER 900 & 9000	⏚	N	L	4	2	3	1	-	-	Programme selectors UNLINKED	A	B	C	
SWITCHMASTER SONATA	⏚	N	L	3	6	1	4	-	-					
VENNER CHC/W2 (WITH STAT)	⏚	N,2,4	L	-	-	1	A/S	-	-	Used in a system having independent control of water and heating	A/S 3			
VENNER CHC/W2 (AIR STAT LINKED)	⏚	N,2,4	L	-	-	1	3	-	-					
VENNER VENOTROL 80M & 80PM (WITH AIR STAT)	⏚	N,3	L	1	4	2	A/S	-	-		A/S 5			
VENNER VENOTROL 80M & 80PM (AIR STAT LINKED)	⏚	N,3	L	1	4	2	5	-	-					

A/S = Air 'stat

(B) GRAVITY DHW, PUMPED HEATING SYSTEMS

DANFOSS RANDALL FP715, CP715, (PUMPED)	MAINS			DHW OFF	HTG OFF	DHW ON	HTG ON	*Wires other than links in these terms. go to LIVE		NOTE This conversion applies only if....	An additional terminal block may be required where these disconnected leads (or pairs of leads) should be terminated			
	⏚	N	L					L	L		A	B	C	D
	⏚	N	L					1	2		3	4	L	L
DANFOSS RANDALL 922/972	⏚	N	L	1	4	3	6	2	5	Programme selectors UNLINKED				
DANFOSS RANDALL 102/102E/102E5/102E7	⏚	5	3,6	-	-	1	2	-	-					
HORSTMANN 423 DIAMOND POTTERTON 423	⏚	N	L,1,3	-	-	2	4	-	-		5	6		
HORSTMANN 424 DIAMOND	⏚	N	L,1,3	-	-	2	4	-	-		5			
HORSTMANN CORAL 423 & 424	⏚	2,3	1	-	-	BOILER (8)	AIR STAT (8)	-	-		4,7	5	6	
HORSTMANN 425 DIADEM	⏚	N	L	3	6	1	4	2	5	Programme selectors UNLINKED				
HORSTMANN 525 & 527	⏚	N	L	3	6	1	4	2	5	Programme selectors UNLINKED				
HONEYWELL ST699	⏚	N	L	-	-	8	7,3	6	5	...set for gravity H.W.				
POTTERTON EP2000, EP3000	⏚	N	L	1	2	3	4	-	5	Programme selectors UNLINKED	A	B	C	D
RANDALL TSR2P	⏚	3	1,2	-	-	5,6	7	-	-	1 & 2 are LINKED 5 & 6 are LINKED	4			
RANDALL MK11 R6	⏚	3	1,2	-	-	4	5	-	-		6	7		
DANFOSS RANDALL 3060 & 3020P	⏚	1,7	6	-	-	4	2	-	-		3	5		
RANDALL 701	⏚	N	L	4	2	3	1	6	5					
DANFOSS RANDALL SET 2	⏚	N	L	3	6	1,5	4	2	-	WITH LINKS L-2 & 1-5				
SANGAMO M5 410 FORM 4	⏚	4,5	3	2	7	1,6	8	-	-	1 & 6 are LINKED				
SANGAMO S409 FORMS 1 & 4	⏚	N,1,3	L	-	-	2	5	-	-		6,4			
SANGAMO (EARLY MODEL) S410 FORM 4	⏚	N,2	L	-	-	1,3	4	-	-	1 & 3 are LINKED				
SATCHWELL LIBRA	⏚	1	2	8	5	6	3	7	4					
SMITHS IND. CENTROLLER 1000	⏚	N	L	-	-	3	2	-	-		1	4		
SMITHS IND. CENTROLLER 60	⏚	1	2	-	-	5	4	-	-		3			
SMITHS IND. CENTROLLER 10	⏚	N	L	-	-	3	2	-	-		1,4			
SMITHS IND. CENTROLLER 70	⏚	1	2	-	-	5	4	-	-		3	6		
SMITHS IND. CENTROLLER 1000	⏚	N	L	1	2	3	4	-	-	Programme selectors UNLINKED				
SWITCHMASTER 320 & 350	⏚	N	4,L	-	-	3	1	-	-	L & 4 are LINKED	2			
SWITCHMASTER 400	⏚	N	L	-	4	3	1	-	-		2			
SWITCHMASTER 600	⏚	N	L	-	-	3	1	-	-		2	4		
SWITCHMASTER 900 & 9000	⏚	N	L	4	2	3	1	-	-	Programme selectors UNLINKED	A	B	C	
VENNER VENTROL	⏚	N,A,M	L,L1	-	-	V	S,F	-	-		T,P	O		
VENNER VENOTROL 80 (AIR STAT)	⏚	N,1, 3,4	L	-	-	2	A/S	-	-		A/S 5			
VENNER VENOTROL 80 (AIR STAT LINKED)	⏚	N,1, 3,4	L	-	-	2	5	-	-					
VENNER CHC/W2 (WITH STAT)	⏚	N,2,4	L	-	-	1	A/S	-	-	Used in a system having control of WATER ONLY or WATER and HEATING TOGETHER	A/S 3			
VENNER CHC/W2 (AIR STAT LINKED)	⏚	N,2,4	L	-	-	1	3	-	-					
VENNER VENOTROL 80P (WITH AIR STAT)	⏚	N,1,3	L	-	4	2	A/S	-	-		A/S 5			
VENNER VENOTROL 80P (AIR STAT LINKED)	⏚	N,1,3	L	-	4	2	5	-	-					

A/S = Air 'stat



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