



Rapid News – product info

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Product Info - Applied – Introduction of new split FCU electronic controller

Date: 16/07/2015

From: Applied Strategic Marketing

Pages: 11

Subject:

Introduction of new split FCU electronic controller

Dear Madam, dear Sir,

we are pleased to announce you the introduction of FWECSA, new split FCU electronic controller.

FWECSA is made of two separate components:

- power control board FWECSAP
- control panel FWECSAC



Specifications are subject to change without notice

DAIKIN EUROPE N.V. - Zandvoordestraat 300 - 8400 Oostende

Tel. +32 59 55 81 11 - Fax +32 59 55 82 38



By means of this Rapid News, we would like to give you some information about the new split FCU electronic controller, concerning the following items:

1. Product line-up
2. Product specifications
3. Master & Slave networks and integration in supervision systems
4. Accessories
5. Product benefits
6. Sales launch

1. Product line-up

Electronic controller FWECSA is combinable with the following FCU ranges:

- FWV-D, floor standing units (AC fan motor)
- FWZ-A, floor standing units (BLDC fan motor)
- FWL-D, flexi units with cabinet (AC fan motor)
- FWR-A, flexi units with cabinet (BLDC fan motor)
- FWM-D, flexi units without cabinet (AC fan motor)
- FWS-A, flexi units without cabinet (BLDC fan motor)
- FWE-C, low ESP ducted units (AC fan motor)
- FWB-B, medium ESP ducted units (AC fan motor)
- FWP-A, medium ESP ducted units (BLDC fan motor)
- FWD-A, high ESP ducted units (AC fan motor)

FWECSA is made of the two separate components:

- power control board FWECSAP
- control panel FWECSAC

Power control board FWECSAP

Power control board FWECSAP has to be mounted on FCU casing and connected to fan and (on job site) to the electrical network.

Power control board FWECSAP can be:

1. separate accessory (mounted by installer on job site)
2. factory mounted

Note that, in case of FWE-C FCU range, power control board FWECSAP can be sold only as a separate accessory.

Power control board can be ordered as a separate accessory by “FWECSAP” code.



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Find below how to create Material / Product Name of FCU to be ordered, in case of factory mounted power control board FWEC3AP.

Note that, in case of factory mounted power control board FWEC3AP, digit number 14 of Material / Product Name is letter "S".

1.

- FWV-D, floor standing units (AC fan motor)
- FWL-D, flexi units with cabinet (AC fan motor)
- FWM-D, flexi units without cabinet (AC fan motor)

Material / Product Name digits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F	W	V	0	0	D	A	T	N	6	V	3	-	-	-
		L	1	1			R	V			S	E	1	L
		M	2	2			F	D					2	
			3	3				W					3	
				4				P					S	
				5				T						
				6				U						
				8				O						

Sizes

- 01
- 15
- 02
- 25
- 03
- 35
- 04
- 06
- 08
- 10

Coils

- N, 2-pipes (3-rows)
- R, 2-pipes (4-rows)
- F, 4-pipes

Valves

- N, without valve
- V, with 3-ways on/off 230V valve
- D, with 3-ways simplified on/off 230V valve
- W, with 3-ways on/off 24V valve
- P, with 3-ways proportional valves
- T, with 2-ways on 230V valves
- U, with 2-ways on/off 24V valves
- O, with 2-ways proportional valves

Number of speeds

- 3, 3-speeds
- S, 6-speeds

Electric heater

- -, no
- E, yes

Controller

- -, no
- 1, FWEC1A
- 2, FWEC2A
- 3, FWEC3A
- **S, FWEC3AP**

Water connection

- -, left
- R, right

2.

- FWZ-A, floor standing units (BLDC fan motor)
- FWR-A, flexi units with cabinet (BLDC fan motor)
- FWS-A, flexi units without cabinet (BLDC fan motor)

Material / Product Name digits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F	W	Z	0	2	A	A	T	N	6	V	3	-	-	-
		R		3			R	V				E	3	R
		S		6			F	D					S	
				8				W						
								T						
								U						

Sizes

- 02
- 03
- 06
- 08

Coils

- N, 2-pipes (3-rows)
- R, 2-pipes (4-rows)
- F, 4-pipes

Valves

- N, without valve
- V, with 3-ways on/off 230V valve
- D, with 3-ways simplified on/off 230V valve
- W, with 3-ways on/off 24V valve
- T, with 2-ways on 230V valves
- U, with 2-ways on/off 24V valves

Electric heater

- -, no
- E, yes

Controller

- -, no
- 3, FWEC3A
- **S, FWEC3AP**

Water connection

- -, left
- R, right

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3.

- FWB-B, medium ESP ducted units (AC fan motor)

Material / Product Name digits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F	W	B	0	2	B	A	T	N	6	V	3	-	-	-
			1	3				V				E	S	R
				4										
				5										
				6										
				7										
				8										
				9										

Sizes

- 02
- 03
- 04
- 05
- 06
- 07
- 08
- 09
- 10

Coils

- N, 2-pipes

Valves

- N, without valve
- V, with 3-ways on/off 230V valve

Number of speeds

- 3, 7-speeds

Electric heater

- -, no
- E, yes

Controller

- -, no
- S, FWEC SAP

Water connection

- -, left
- R, right

4.

- FWP-A, medium ESP ducted units (AC fan motor)

Material / Product Name digits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F	W	B	0	2	B	A	T	N	6	V	3	-	-	-
				3				V				E	S	R
				4										
				5										
				6										
				7										

Sizes

- 02
- 03
- 04
- 05
- 06
- 07

Coils

- N, 2-pipes

Valves

- N, without valve
- V, with 3-ways on/off 230V valve

Electric heater

- -, no
- E, yes

Controller

- -, no
- S, FWEC SAP

Water connection

- -, left
- R, right

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5.

- FWD-A, high ESP ducted units (AC fan motor)

Material / Product Name digits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F	W	B	0	2	B	A	T	N	6	V	3	-	-	-
				3				V				E	S	R
				4										
				5										
				6										
				7										

Sizes

- 02
- 03
- 04
- 05
- 06
- 07

Coils

- N, 2-pipes

Valves

- N, without valve
- V, with 3-ways on/off 230V valve

Electric heater

- -, no
- E, yes

Controller

- -, no
- S, FWEC SAP

Water connection

- -, left
- R, right

Control panel FWEC SAP

Control panel FWEC SAP can be only sold as a separate accessory; it is mounted on the wall and connected to power control board FWEC SAP by installer on job site.

Control panel can be ordered by "FWEC SAP" code.

Note that split electronic controller FWEC SA is introduced in addition to the electronic controllers FWEC(1,2,3)A, in order to increase DENV FCU controller portfolio and to have the best solution for any application.

As a consequence find below a summary about the current and new situation.

Electronic controllers current situation	Material Name	Description
	FWEC1A	Electronic controller ("STANDARD" version)
	FWEC2A	Electronic controller ("ADVANCED" version)
	FWEC3A	Electronic controller ("ADVANCED PLUS" version)
Electronic controllers new situation	FWEC1A	Electronic controller ("STANDARD" version)
	FWEC2A	Electronic controller ("ADVANCED" version)
	FWEC3A	Electronic controller ("ADVANCED PLUS" version)
	FWEC SA	Split electronic controller

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2. Product specifications

Find below the list of the main features of split electronic controller FWECSA in comparison with electronic controllers FWEC(1,2,3)A.



Feature	FWECSA	FWEC3A	FWEC2A	FWEC1A
Management of AC 3-speeds fan motor (on/off and automatic speed change)	●	●	●	●
Management of AC 4-speeds fan motor (on/off and automatic speed change)	●	●	●	
Management of BLDC fan motor	●	●		
Management of on/off valve	●	●	●	●
Management of proportional valve	●	●		
Management of electric heater	●	●	●	●
Air relative humidity control	●	●	●	
Cooling / heating mode switching based on air / water temperature	●	●	●	●
Clean contact for remote activation (e.g. window contact, remote on/off)	●	●	●	●
Weekly timer programmed operating mode	●	●		
Configurable digital outputs	●	●		
Master & Slave System on serial RS485	●	●	●	
Master & Slave System on Conveyed Waves (CW) NEW	●			

● Available

Find below a sketch with explanation notes for the two separate components of split electronic controller FWECSA:

- power control board, FWECSAP
- control panel, FWECSAC



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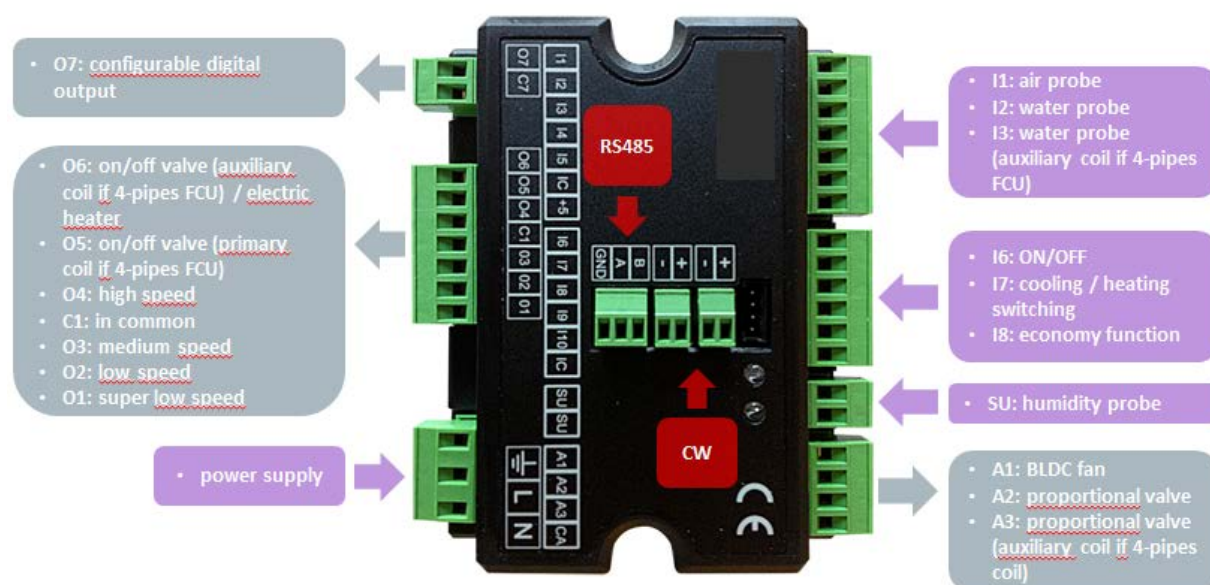
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Power control board, FWECSAP

Power control board is for on board installation and it is AC 230V 50-60Hz power supplied.
Find below a picture that reports input and output connection.

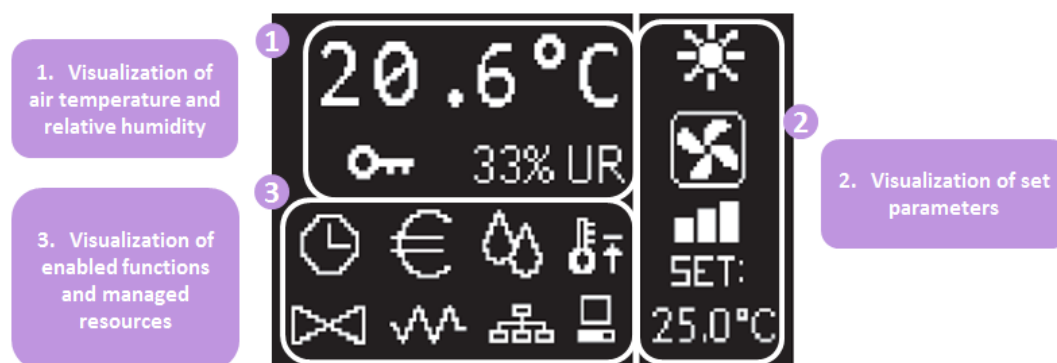


Control panel, FWECSAC

Control panel is for remote installation and it has the following basic features:

- IP class 30
- connection to power control board by a shielded twisted pair cable
- 12VDC low voltage power supply from power control board
- integrated air temperature probe

Find below a picture of control panel display.



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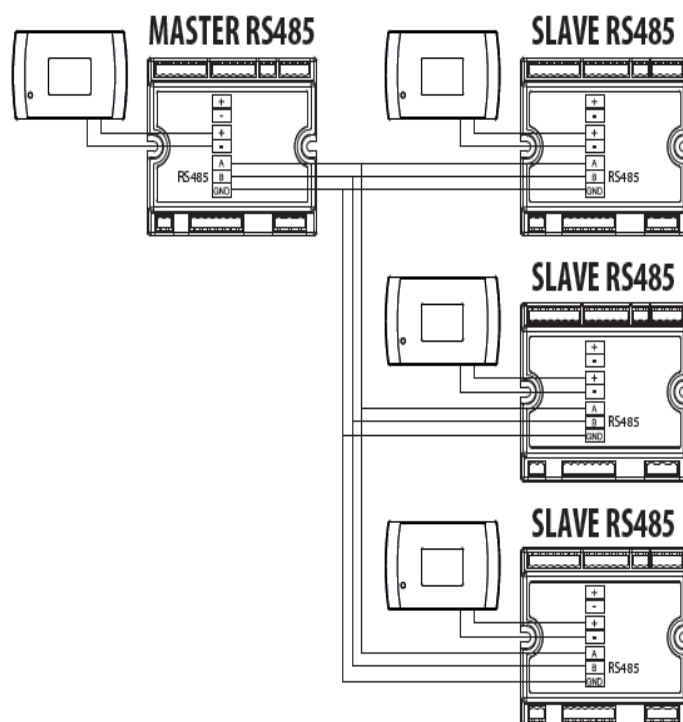
3. Master & Slave networks and integration in supervision systems

More split electronic controllers FWECSA can be connected in order to create one of the following Master & Slave networks or to be integrated in one of the following supervision systems:

- a. Master & Slave network on RS485 bus (Modbus communication protocol)
- b. supervision system on RS485 bus (Modbus communication protocol)
- c. Master & Slave network on Conveyed Waves (CW) bus **NEW**
- d. mixed network on RS485 / CW bus **NEW**

a. Master & Slave network on RS485 bus (Modbus communication protocol)

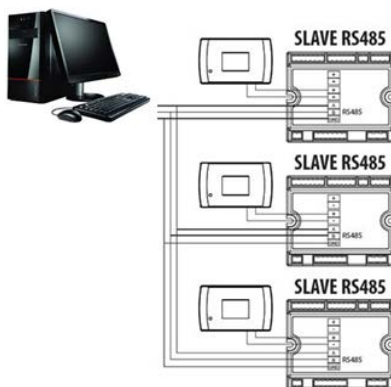
- 1 Master and up to 255 Slaves (1 Km maximum cable length).
- Each power control board has its own control panel.
- Master sends each Slave its own setting for on/off, cooling/heating mode and set point air temperature.
- Each Slave can set all the other parameters and adjust set point air temperature within $\pm 2^{\circ}\text{C}$ range.
- FCU can be different among them in terms of size, fan motor, number of pipes, mounted accessories, ...





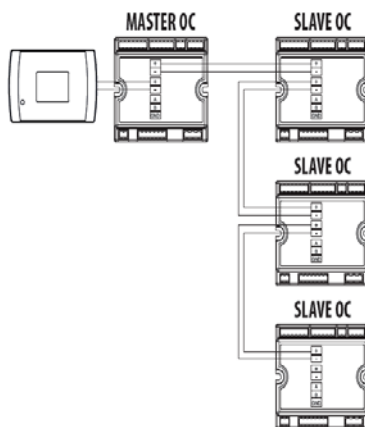
b. Integration in supervision system on RS485 bus (Modbus communication protocol)

- BMS (Building Management System) as Master and up to 255 Slaves.
- Each power control board has its own control panel.
- Depending on the existing BMS, one of the following configurations is possible:
 - Master can set and display parameters of each Slave
 - Master can only display parameters of each Slave (because each Slave sets its own parameters)
 - Master can display parameters of each Slave and set a few of them.
- FCU can be different among them in terms of size, fan motor, number of pipes, mounted accessories, ...



c. Master & Slave network on Conveyed Waves (CW) bus **NEW**

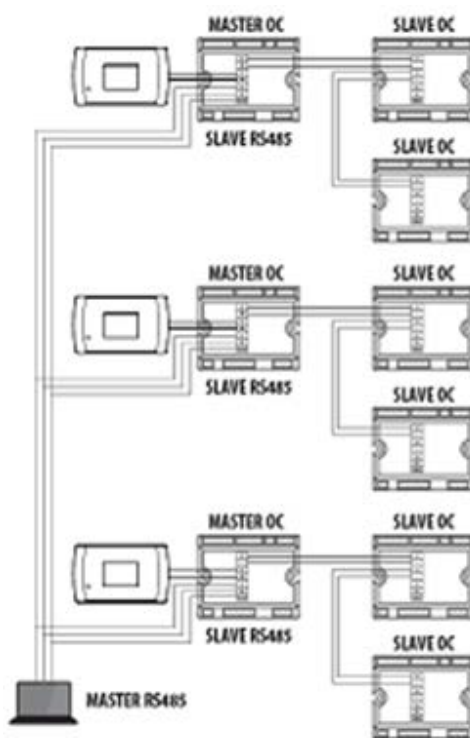
- 1 Master and up to 32 Slaves.
- Control panel only for Master.
- Master settings are repeated on each Slave.
- All FCU have to be identical in terms of size, fan motor, number of pipes, mounted accessories, ...





d. Mixed network on RS485 / CW bus **NEW**

- 1 RS485 Master (controller or BMS); up to 255 Slaves RS485 / Masters CW and up to 32 Slaves CW for each Master CW.
- Control panel only for each Slave RS485 / Master CW.
- For each Slave RS485 / Master CW settings are repeated on each Slave CW that is connected.
- All FCU, that refer to the same Slave RS485 / Master CW, have to be identical in terms of size, fan motor, number of pipes, mounted accessories, ...



4. Accessories

Find below the list of accessories for split electronic controller FWECSA.

Material Name	Description
EPIB6	Power board, to be used if split electronic controller FWECSA manages FWD-A units, in which current consumption is higher than 5A
FWTSKA	Water or remote air temperature probe
FWHska	Air relative humidity probe

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Note that:

- FWTSKA and FWHSKA probes have to be connected to power control board FWECSAP
- there is no difference between water temperature probe and remote air temperature probe; water / remote air temperature probe is FWTSKA
- if remote air temperature probe is connected to power control board FWECSAP, air temperature probe, that is installed on control panel FWECSAC, is automatically excluded.

5. Product benefits

Find below the list of key benefits due to the new split FCU electronic controller FWECSA.

End user

- High level of safety → Due to the split system, user is in contact only with control panel that is low voltage powered.
- Easy use → Control panel is «user friendly», because of simplicity in set up and use.

Installer

- Easy and cheap installation → Due to the split system, only one connection cable is needed between power control board and control panel and only one control panel is needed in case of network system on CW (Conveyed Waves) bus.

Consultant

- Design of a high comfort level system → Possibility to manage BLDC (BrushLess Direct Current) fan and two proportional valves at the same time, by getting an accurate air temperature control, and possibility to set up air relative humidity.
- High flexibility in designing control network of more FCU.

6. Sales launch

Start of sales is scheduled from the 20th of July 2015 onwards.

Note that product presentation is available on Daikin Extranet (Document Library section) and that webinar trainings will be arranged in a short time to further explain features and benefits of FWECSA controller.

For details about availability, kindly contact directly Supply Department.

In case you have any question or remark, please do not hesitate to contact us at:
g.mignogna@daikinapplied.eu of Strategic Marketing.