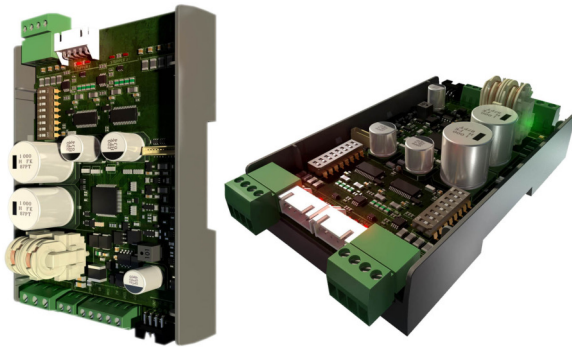


Data Sheet

Stepper Valve driver
Type **EKF 1A, EKF 2A**

Driver for stepper motor valves (SW V1.25)




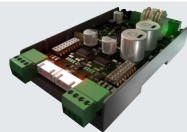
Stepper Valve Driver EKF series is for use where stepper valves must be accurately controlled typically in commercial air conditioning, heat pumps, commercial refrigeration and food retail applications

Features:

- Support both Bipolar and Unipolar stepper motor valves
- Driven by analog input signal
- Fast installation and setup
- Lost step prevention
- Open circuit detection
- LED indication for valve movement and alarm/warnings
- On board DIP switch for quick selection
- Plug and play
- 4 pole terminal block and JST-XHP 5 pin connections
- Phoenix connector terminals
- Digital output for alarm signal
- 1 and 2 valve driver version available

Portfolio overview

Table 1: Portfolio overview

Features	EKF 1A	EKF 2A
		
Code number	080G5030	080G5035
Power supply	24 V AC/DC	24 V AC/DC
Number of valves	1 stepper motor valve	2 stepper motor valves
Valve type	Unipolar/Bipolar	Unipolar/Bipolar
Analog inputs	1	2
Digital outputs	1	1
Dip switch	1	2
Battery backup support	Yes	Yes
Mounting	35 mm, 4 DIN	35 mm, 4 DIN
Dimension (H x W)(mm)	110 x 70	110 x 70

Applications

EKF series stepper valve drivers can be used in application where accurate control of stepper motor valves are needed using analog input signals (0-10V, 0-5V, 4-20 mA, 0-20 mA) from unit programmable controllers. The product can be used for both Bipolar and Unipolar type valves. General applications include use in commercial air conditioning, heat pumps, commercial refrigeration and food retail application

Figure 1: EKF 1A

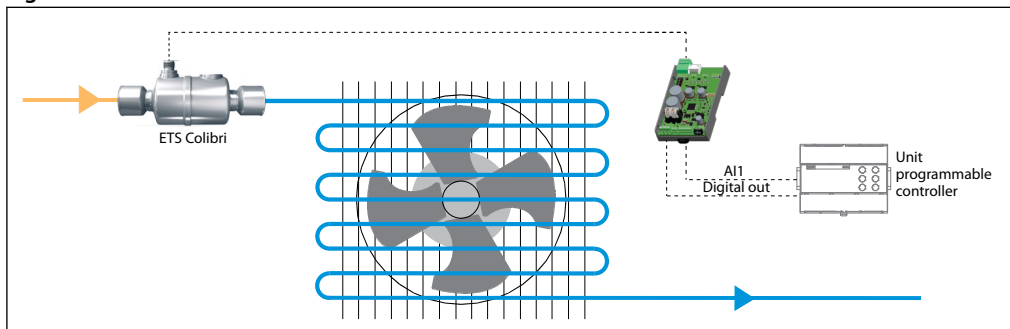
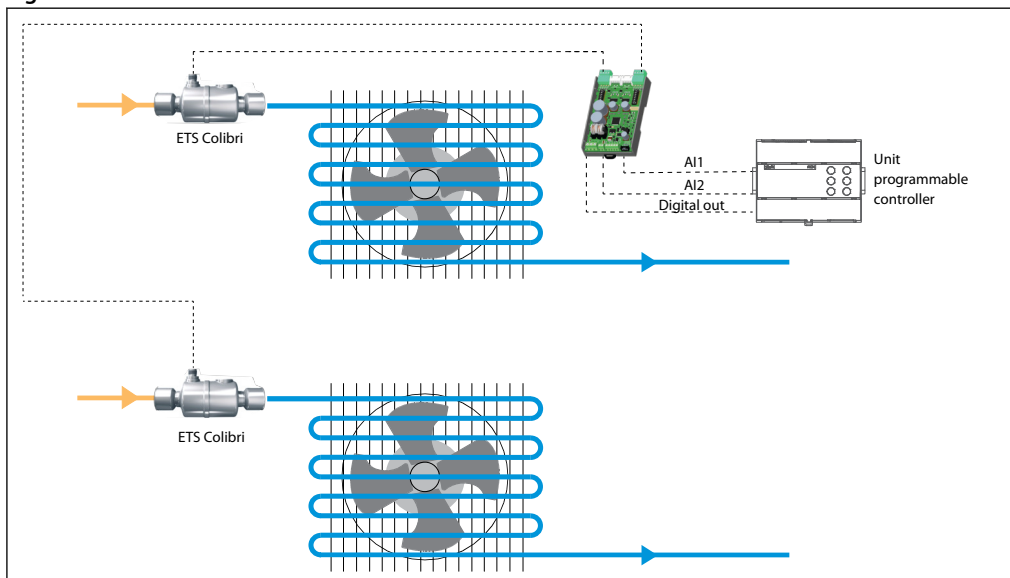


Figure 2: EKF 2A



AI1 Analog input signal 1

AI2 Analog input signal 2

Product specification

Table 2: Technical data

Supply voltage	EKF 1A: 24 V AC / DC 50 / 60 Hz EKF 2A: 24 V AC / DC, 50 / 60 Hz	
Power consumption	Idle operating: < 1 W (without valve) Data below shows power consumption for using 1 valve. When using two valves sum the power consumption of each valve.	
	CCMT 16 – CCMT 42	25 VA / 15 W
	ETS 5M, ETS 6	20 VA / 10 W
	ETS 12C – ETS 100C, KVS C	30 VA / 15 W
	ETS 12.5 – 400	10 VA / 5 W
	ETS 500P, 800P	28 VA / 20 W
	CCMT 2- CCMT 8	10 VA / 5 W
	CTR 20	14 VA / 10 W
	CCMT L	20 VA / 10 W
Analog inputs	EKF 1A: 1 input AI1	0-5 V, 0-10 V, 4-20 mA, 0-20 mA
	EKF 2A: 2 inputs AI1 and AI2	0-5 V, 0-10 V, 4-20 mA, 0-20 mA
	Max. 15 V Analog input voltage. Do not connect voltage sources to unpowered units without limiting the current to analog inputs (overall 40 mA per input). Input Impedance: >50 kΩ (Voltage Input) 120 Ω ± 2% (Current Input)	
Digital outputs	1 output for EKF1A / EKF 2A: D01 (open collector), sink current max 10 mA	
Valve support	EKF 1A: 1 stepper motor valve output, EKF 2A: 2 stepper motor valve output	
	STEPPER 1: A1, A2, B1, B2	
	STEPPER 2: A1, A2, B1, B2	
	Bipolar and unipolar stepper motor output: - Danfoss ETS / ETS L / KVS / ETS C / KVS C / CCMT 2 – CCMT 42 / CTR / CCM / CCMT L Valves - ETS 6 / ETS 5M (unipolar) / ETS 8M (Bipolar) / ETS 8M (Unipolar) Valves Open circuit HW diagnostics is present. This function is not available when using Unipolar valves..	
Battery backup	1 input for EKF 1A / EKF2A: Vbat BAT, GND: Nominal 18 – 24 V DC, Min 16 V DC - Max 28 V DC (EKE 2U recommended) Max. battery current: 2 A at 18 V (valve depended) Battery alarm/warning will be activated below 16 V DC.	
Enviroment	Storage	-30 – 80 °C / -22 – 176 °F
	Operating	-20 – 60 °C / -4 – 140 °F
	Humidity	< 90% RH, non-condensing
DIN Mounting	4 DIN, 35mm	

Identification

Product label is positioned behind the product.

Figure 3: Product label


Above product label is an example.

Table 3: Description

Stepper valve driver	Product description
EKF 2A	Product type designation
080G5035	Product code number
24V AC/DC 50/60 Hz	Input power rating
PV01	Product version
SW1v00	Software version
QR code	Danfoss product information website
Made in Denmark	Country of origin
Danfoss A/S, 6430 Nordborg, Denmark	Company address

Connection diagrams

Figure 4: EKF 1A

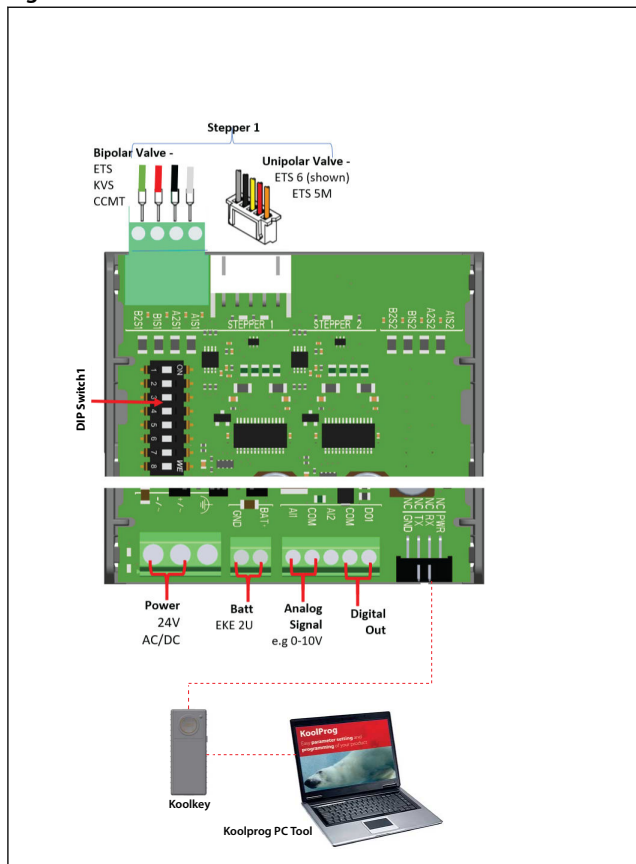
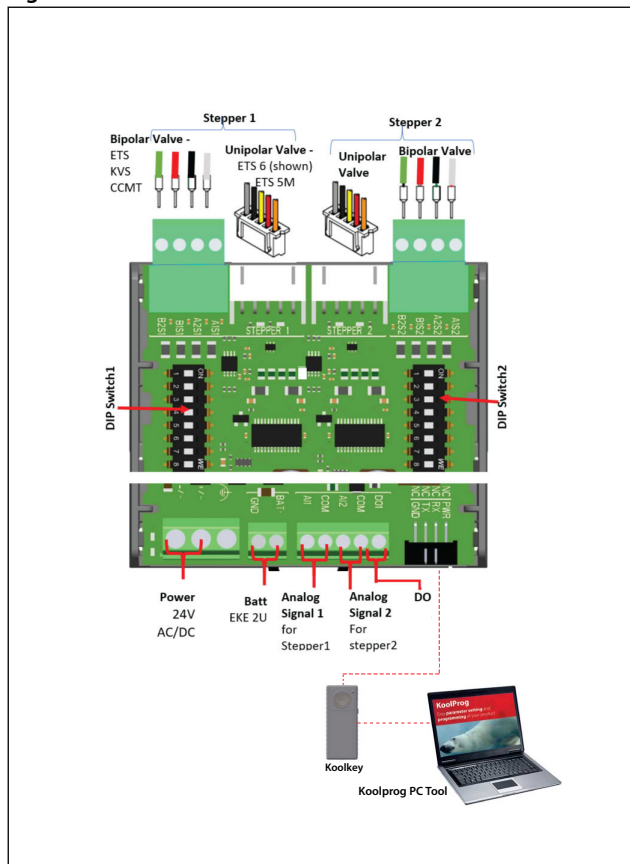


Figure 5: EKF 2A



NOTE:

There is both 4 pin terminal and JST 5 pin terminal available on the board per stepper drive output.

Only one of the terminals should be used per valve.

Do not connect valves to both 4 pin terminal and JST terminal of the same stepper driver output.

Ordering

Table 4: Product part numbers

Description	Code No.
Stepper Valve Driver EKF 1A	080G5030
Stepper Valve Driver EKF 2A	080G5035

Table 5: Accessories and related products



Description	Code No.
Backup power module EKE 2U	080G5555
Koolkey EKA 200	080N0020
Koolkey cable EET	080N0324
Power supply AK-PS 063 STEP 3	080Z0057
Power supply AK-PS 130 STEP	080Z0058
Power supply AK-PS 250 STEP 3	080Z0059

Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Table 6: Approvals

	RoHS		
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