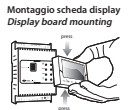


EVD*^T, EVDIS* - EVD evolution TWIN- Driver per 2 valvole di espansione elettronica e display grafico / 2 electronic expansion valves driver and graphic display



Montaggio scheda display / Display board mounting

Compatibilità refrigeranti / Refrigerant compatibility

R22, R134a, R404A, R407C, R410A, R502a, R509, R600, R600a, R123, R124, R128, R127, R417A, R422D, R413A, R424, R424A, R427A, R427A, R428F, R407F, R32, HTR01, HTR02, R23, R1234yf, R1234ze, R455A, R170, R442A, R447A, R448A, R448A, R450A, R450A, R450B, R452B, R513A, R454B, R454A

Tabella codici / Table of product codes

code	EVD evolution TWIN	display (accessory/optional)
EVD000000	EVD evolution twin universal (AN, 17-seg) basic	
EVD000011	EVD evolution twin universal (AN, 17-seg) basic	display (optional)
EVD000020	EVD evolution twin universal (AN, 17-seg) basic	display (optional)
EVD000030	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000040	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000050	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000060	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000070	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000080	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000090	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000100	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000110	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000120	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000130	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000140	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000150	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000160	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000170	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000180	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000190	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000200	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000210	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000220	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000230	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000240	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000250	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000260	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000270	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000280	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000290	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000300	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000310	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000320	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000330	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000340	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000350	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000360	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000370	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000380	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000390	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000400	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000410	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000420	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000430	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000440	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000450	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000460	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000470	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000480	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000490	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000500	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000510	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000520	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000530	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000540	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000550	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000560	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000570	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000580	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000590	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000600	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000610	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000620	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000630	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000640	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000650	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000660	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000670	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000680	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000690	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000700	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000710	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000720	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000730	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000740	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000750	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000760	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000770	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000780	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000790	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000800	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000810	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000820	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000830	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000840	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000850	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000860	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000870	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000880	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000890	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000900	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000910	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000920	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000930	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000940	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000950	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000960	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000970	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000980	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)
EVD000990	EVD evolution twin for CAREL valves (AN, 17-seg) basic	display (optional)

Tabella compatibilità valvole / Table of valve compatibility

Model	Valve
EVD000000	ALCO
EVD000011	ALCO
EVD000020	ALCO
EVD000030	ALCO
EVD000040	ALCO
EVD000050	ALCO
EVD000060	ALCO
EVD000070	ALCO
EVD000080	ALCO
EVD000090	ALCO
EVD000100	ALCO
EVD000110	ALCO
EVD000120	ALCO
EVD000130	ALCO
EVD000140	ALCO
EVD000150	ALCO
EVD000160	ALCO
EVD000170	ALCO
EVD000180	ALCO
EVD000190	ALCO
EVD000200	ALCO
EVD000210	ALCO
EVD000220	ALCO
EVD000230	ALCO
EVD000240	ALCO
EVD000250	ALCO
EVD000260	ALCO
EVD000270	ALCO
EVD000280	ALCO
EVD000290	ALCO
EVD000300	ALCO
EVD000310	ALCO
EVD000320	ALCO
EVD000330	ALCO
EVD000340	ALCO
EVD000350	ALCO
EVD000360	ALCO
EVD000370	ALCO
EVD000380	ALCO
EVD000390	ALCO
EVD000400	ALCO
EVD000410	ALCO
EVD000420	ALCO
EVD000430	ALCO
EVD000440	ALCO
EVD000450	ALCO
EVD000460	ALCO
EVD000470	ALCO
EVD000480	ALCO
EVD000490	ALCO
EVD000500	ALCO
EVD000510	ALCO
EVD000520	ALCO
EVD000530	ALCO
EVD000540	ALCO
EVD000550	ALCO
EVD000560	ALCO
EVD000570	ALCO
EVD000580	ALCO
EVD000590	ALCO
EVD000600	ALCO
EVD000610	ALCO
EVD000620	ALCO
EVD000630	ALCO
EVD000640	ALCO
EVD000650	ALCO
EVD000660	ALCO
EVD000670	ALCO
EVD000680	ALCO
EVD000690	ALCO
EVD000700	ALCO
EVD000710	ALCO
EVD000720	ALCO
EVD000730	ALCO
EVD000740	ALCO
EVD000750	ALCO
EVD000760	ALCO
EVD000770	ALCO
EVD000780	ALCO
EVD000790	ALCO
EVD000800	ALCO
EVD000810	ALCO
EVD000820	ALCO
EVD000830	ALCO
EVD000840	ALCO
EVD000850	ALCO
EVD000860	ALCO
EVD000870	ALCO
EVD000880	ALCO
EVD000890	ALCO
EVD000900	ALCO
EVD000910	ALCO
EVD000920	ALCO
EVD000930	ALCO
EVD000940	ALCO
EVD000950	ALCO
EVD000960	ALCO
EVD000970	ALCO
EVD000980	ALCO
EVD000990	ALCO

ITIA Per ulteriori informazioni, consultare la "Guida al sistema EVD" (codice +030200810) e il manuale d'uso (codice +03000067) disponibili sul sito www.carel.com/valve ("Documentation").

Tabella LED EVD

LED	Accesso	Indirizzo	Impostazione
LED A/B	Indirizzo valvola A/B	Indirizzo valvola A/B	Indirizzo valvola A/B
LED B	Indirizzo valvola B	Indirizzo valvola B	Indirizzo valvola B
LED C	Indirizzo valvola C	Indirizzo valvola C	Indirizzo valvola C
LED D	Indirizzo valvola D	Indirizzo valvola D	Indirizzo valvola D
LED E	Indirizzo valvola E	Indirizzo valvola E	Indirizzo valvola E
LED F	Indirizzo valvola F	Indirizzo valvola F	Indirizzo valvola F
LED G	Indirizzo valvola G	Indirizzo valvola G	Indirizzo valvola G
LED H	Indirizzo valvola H	Indirizzo valvola H	Indirizzo valvola H
LED I	Indirizzo valvola I	Indirizzo valvola I	Indirizzo valvola I
LED J	Indirizzo valvola J	Indirizzo valvola J	Indirizzo valvola J
LED K	Indirizzo valvola K	Indirizzo valvola K	Indirizzo valvola K
LED L	Indirizzo valvola L	Indirizzo valvola L	Indirizzo valvola L
LED M	Indirizzo valvola M	Indirizzo valvola M	Indirizzo valvola M
LED N	Indirizzo valvola N	Indirizzo valvola N	Indirizzo valvola N
LED O	Indirizzo valvola O	Indirizzo valvola O	Indirizzo valvola O
LED P	Indirizzo valvola P	Indirizzo valvola P	Indirizzo valvola P
LED Q	Indirizzo valvola Q	Indirizzo valvola Q	Indirizzo valvola Q
LED R	Indirizzo valvola R	Indirizzo valvola R	Indirizzo valvola R
LED S	Indirizzo valvola S	Indirizzo valvola S	Indirizzo valvola S
LED T	Indirizzo valvola T	Indirizzo valvola T	Indirizzo valvola T
LED U	Indirizzo valvola U	Indirizzo valvola U	Indirizzo valvola U
LED V	Indirizzo valvola V	Indirizzo valvola V	Indirizzo valvola V
LED W	Indirizzo valvola W	Indirizzo valvola W	Indirizzo valvola W
LED X	Indirizzo valvola X	Indirizzo valvola X	Indirizzo valvola X
LED Y	Indirizzo valvola Y	Indirizzo valvola Y	Indirizzo valvola Y
LED Z	Indirizzo valvola Z	Indirizzo valvola Z	Indirizzo valvola Z

ITIA Note: se il LED open e close lampeggia contemporaneamente, deve essere erogata la prima messa in servizio.

ITIA Tastiera scheda display / Display board keypad

ITIA Per further information, see the "TEV system guide" (code +030200811) and the user manual (code +03000067) available at www.carel.com, under the "Literature" section.

Table of EVD LEDs

LED	Access	Address	Setting
LED A/B	Valve A/B address	Valve A/B address	Valve A/B address
LED B	Valve B address	Valve B address	Valve B address
LED C	Valve C address	Valve C address	Valve C address
LED D	Valve D address	Valve D address	Valve D address
LED E	Valve E address	Valve E address	Valve E address
LED F	Valve F address	Valve F address	Valve F address
LED G	Valve G address	Valve G address	Valve G address
LED H	Valve H address	Valve H address	Valve H address
LED I	Valve I address	Valve I address	Valve I address
LED J	Valve J address	Valve J address	Valve J address
LED K	Valve K address	Valve K address	Valve K address
LED L	Valve L address	Valve L address	Valve L address
LED M	Valve M address	Valve M address	Valve M address
LED N	Valve N address	Valve N address	Valve N address
LED O	Valve O address	Valve O address	Valve O address
LED P	Valve P address	Valve P address	Valve P address
LED Q	Valve Q address	Valve Q address	Valve Q address
LED R	Valve R address	Valve R address	Valve R address
LED S	Valve S address	Valve S address	Valve S address
LED T	Valve T address	Valve T address	Valve T address
LED U	Valve U address	Valve U address	Valve U address
LED V	Valve V address	Valve V address	Valve V address
LED W	Valve W address	Valve W address	Valve W address
LED X	Valve X address	Valve X address	Valve X address
LED Y	Valve Y address	Valve Y address	Valve Y address
LED Z	Valve Z address	Valve Z address	Valve Z address

ITIA Note: if open and close LEDs blink at the same time, the commissioning procedure has to be restarted.

ITIA Display keypad key function

ITIA Press directly to the screen for entering the password to access programming mode.

ITIA Press programming mode (Service, manufacturer) and display.

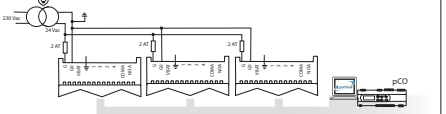
ITIA After setting a parameter, press without saving the change.

ITIA Press alarm display (Display the alarm status).

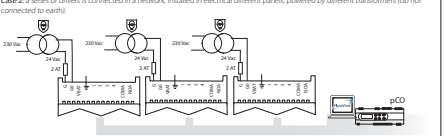
ITIA Press the "manufacturer" level when scrolling the parameters shows the help screens.

Modalità di connessione e alimentazione tLAN, pLAN e RS485 / tLAN, pLAN and RS485 connections and power supply

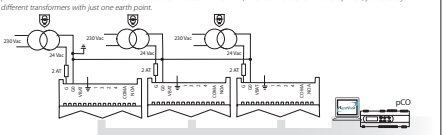
Caso 1: applicazione di più driver collegati in rete, all'interno dello stesso quadro elettrico, alimentati dallo stesso trasformatore. Case 1: a series of drivers is connected in a network, installed in the same electrical panel, powered by the same transformer.



Caso 2: applicazione di più driver collegati in rete, all'interno di quadri elettrici diversi, alimentati da trasformatori diversi (G0 non connesso a terra). Case 2: a series of drivers is connected in a network, installed in electrical different panels, powered by different transformers (G0 not connected to earth).



Caso 3: applicazione di più driver collegati in rete, all'interno di quadri elettrici diversi, alimentati da trasformatori diversi con un unico punto di messa a terra / Case 3: a series of drivers is connected in a network, installed in electrical different panels, powered by different transformers with just one earth point.



ITA Il driver "EVD evolution TWIN" è un controllore PID per la regolazione del surriscaldamento del refrigerante in un circuito frigorifero. Pilota in modo indipendente due valvole di espansione elettronica a motore passo-passo bipolare. Tramite il display (accessorio) è possibile eseguire la messa in servizio del driver, ma non è necessario per il funzionamento dello stesso. La configurazione del driver può essere effettuata anche tramite computer, utilizzando il software CAREL VPM (Visual Parameter Manager), disponibile sul sito http://ksa.carel.com. Il driver può essere collegato ad un controllore CAREL della serie pCO via seriale, oppure può essere connesso ad un supervisore CAREL PlantVisorPRO.

▲Avvertenze per l'installazione:
1. effettuare tutte le operazioni di installazione e manutenzione con driver non alimentato;
2. evitare cortocircuiti tra i pin G, G0 e Vbat.

- * EVD EVO è un controllo da incorporare nell'apparecchiatura finale, non usare per montaggio a muro.
- * DIN VDE 0100: Deve essere garantita la separazione protettiva tra i circuiti SELV e gli altri circuiti. Per prevenire la violazione della separazione di protezione (tra i circuiti SELV e gli altri circuiti) è necessario provvedere ad un fissaggio aggiuntivo vicino alle terminazioni. Questo fissaggio aggiuntivo deve serrare l'isolante e non i conduttori.

Ingressi e uscite

Si raccomanda di tenere separati i cavi degli ingressi/uscite e del relè dal cavo di alimentazione della valvola. Tutti gli ingressi analogici, gli I/O digitali e le seriali (non optoisolate) sono riferiti alla massa GND, quindi l'applicazione, anche temporanea, di tensioni superiori a ±5 Va a questi collegamenti può causare un danno ir-reversibile al driver. Essendo GND la massa comune per tutti gli ingressi è preferibile replicarla in morsetteria.

Prima messa in servizio

Alimentare il driver, il display si illuminerà e in caso di prima messa in servizio, il display guida l'installatore nell'immissione dei 4 parametri necessari all'avvio: tipo refrigerante, tipo valvola, tipo sonda di pressione tipo di regolazione principale (indirizzo di rete se necessario).

Nel caso in cui EVD evolution TWIN e display abbiano versioni firmware diverse, apparirà un messaggio di avvertimento. Per la procedura di aggiornamento firmware riferirsi al manuale d'uso.
Finché la procedura di configurazione non è terminata il driver non può funzionare.

Procedure di UPLOAD, DOWNLOAD e RESET parametri (display)

▲ Le procedure devono essere eseguite con il/i driver alimentati.

NON rimuovere il display dal driver durante le procedure di UPLOAD, DOWNLOAD, RESET.

- premere contemporaneamente i tasti Help e Enter per 5 s;
- si entra in un menu a scelta multipla, selezionare con UP/DOWN la procedura desiderata;
- confermare con ENTER.

UPLOAD: il display memorizza tutti i valori dei parametri del driver 1 (origine).

DOWNLOAD: il display copia tutti i valori dei parametri nel driver 2 (destinazione); è inibito il download dei parametri se il driver di origine e il driver di destinazione hanno firmware incompatibili.

RESET: tutti i parametri del driver sono riportati ai valori di fabbrica. Vedere la tabella parametri sul manuale d'uso del driver.

Caratteristiche tecniche	
Alimentazione (Lmax=5 m)	24 Vdc (+10/-15%) Hz da proteggere con fusibile esterno di tipo T da 2 A, 24 Vac (+10/-15%) 50/60 Hz da proteggere con fusibile esterno di tipo T da 2 A. Utilizzare un trasformatore dedicato (max 100 VA) in classe II.
Potenza di assorbimento	16,2 W <p>35 VA</p>
Alimentazione di emergenza	22Vdc+/-5%. (Se installato il modulo opzionale EVD0000UC0, Lmax= 5 m)
Isolamento tra uscita relè e altre uscite	rinforzato; 6 mm in aria, 8 superficiali; 3750 V isolamento
Collegamento motore	cavo schermato a 4 poli CAREL codice E2VCABS*00, oppure cavo schermato a 4 poli AWG22 Lmax =10 m, oppure cavo schermato a 4 poli AWG14 Lmax= 50 m
Collegamento ingressi digitali	Ingresso digitale da azionare con contatto pulito o transistor verso GND. Corrente di chiusura 5mA; Lmax< 30 m
Sonde (Lmax=10 m; inferiore a 30 m con cavo schermato)	51 sonda pressione raziometrica (0...5V): •risoluzione 0,1 % fs; • errore di misura: 2% fs massimo; 1% tipico <p>sonda pressione elettronica (4...20 mA): •risoluzione 0,5 % fs; • errore di misura: 8% fs massimo; 7% tipico</p> <p>sonda pressione raziometrica combinata (0...5V): •risoluzione 0,1 % fs; • errore di misura: 2 % fs massimo; 1 % tipico</p> <p>Ingresso 4...20 mA (max 24 mA): •risoluzione 0,5 % fs; • errore di misura: 8 % fs massimo; 7 % tipico</p> <p>52 NTC bassa temperatura: • 10 kΩ a 25 °C, -50T90 °C; • errore di misura: 1 °C nel range -50T50 °C; 3 °C nel range +50T90 °C</p> <p>NTC alta temperatura: • 50 kΩ a 25 °C, -40T150 °C; • errore di misura: 1,5 °C nel range -20T115 °C, 4 °C nel range esterno a -20T115 °C</p> <p>NTC combinata: • 10 kΩ a 25 °C, -40T120 °C; • errore di misura: 1 °C nel range -40T50 °C; 3 °C nel range +50T90 °C</p> <p>ingresso 0...10 V (max 12 V): •risoluzione 0,1% fs; • errore di misura: 9% fs massimo; 8% tipico</p> <p>53 sonda pressione raziometrica (0...5V): •risoluzione 0,1% fs; • errore di misura: 2% fs massimo; 1% tipico</p> <p>sonda pressione elettronica (4...20 mA): •risoluzione 0,5% fs; • errore di misura: 8% fs massimo; 7% tipico</p> <p>ingresso 4...20 mA (max 24 mA): •risoluzione 0,5% fs; • errore di misura: 8% fs massimo; 7% tipico</p> <p>sonda pressione raziometrica combinata (0...5V): •risoluzione 0,1 % fs; • errore di misura: 2 % fs massimo; 1 % tipico</p> <p>54 NTC bassa temperatura: • 10 kΩ a 25 °C, -50T105 °C; • errore di misura: 1 °C nel range -50T50 °C; 3 °C nel range 50T90 °C</p> <p>NTC alta temperatura: • 50 kΩ a 25 °C, -40T150 °C; • errore di misura: 1,5 °C nel range -20T115 °C; 4 °C nel range esterno a -20T115 °C</p> <p>NTC combinata: • 10 kΩ a 25 °C, -40T120 °C; • errore di misura 1 °C nel range -40T50 °C; 3 °C nel range +50T90 °C</p>
Uscita relè	contatto normalmente aperto; 5 A, 250 Vac carico resistivo; 2 A, 250 Vac carico induttivo (PF=0,4); Lmax=50 m; UL: 250 Vac, 5 A res., 1A FLA, 6 A LRA, D300 pilot duty, 30.000 cicli;VDE: 1(1)A PF=0.6
Alimentazione sonde attive (V _{ref})	uscita programmabile : +5 Vdc+/-2% o 12Vdc+/-10%
Collegamento seriale RS485	Lmax= 1000 m, cavo schermato
Collegamento tLAN	Lmax= 30 m, cavo schermato
Collegamento pLAN	Lmax= 500 m, cavo schermato
Montaggio	su guida DIN
Connettori	estrailibili, sezione cavi 0,5...2,5 mm ² (12...20 AWG)
Dimensioni	LxHxW= 70x110x60
Condizioni di funzionamento	-25T60°C (non usare EVDIS* sotto -20°C); <90% rH, non cond.
Condizioni di immagazzinamento	-35T60°C (non stoccare EVDIS* sotto -30°C), umidità 90% UR, non cond.
Grado di protezione	IP20
Inquinamento ambientale	2 (normale)
Resistenza al calore e al fuoco	Categoria D
Immunità contro le sovratensioni	Categoria I
Tensione impulsiva nominale	2500V
Tipo di azione relè	1C micro interruzione del funzionamento
Classe di isolamento	II
Classe e struttura del software	A
Conformità	Sicurezza elettrica: EN 60730-1, EN 61010-1, UL873, VDE 0631-1 <p>Compatibilità elettromagnetica: EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4; EN61000-3-2, EN55014-1, EN55014-2, EN61000-3-3.</p>

ENG EVD evolution TWIN* driver is a PID controller for managing superheat in refrigerant circuits. It can independently control two electronic expansion valves with two-pole stepper motors. The di-splay (accessory) can be used for setting up the driver, but is not required for operation. The driver can also be configured from a computer, using the CAREL VPM software (Visual Parameter Manager), available at http://ksa.carel.com. The driver can be connected to a CAREL pCO series controller via serial link, or can be connected to a CAREL PlantVisorPRO supervisor.

▲ Installation warnings:
1. all installation and maintenance operations must be performed with the driver powered down;
2. avoid short-circuits between pins G, G0 & Vbat.

- * EVD EVO is a control to be incorporated in the end equipment, do not use for flush mount.
- * DIN VDE 0100: Protective separation between SELV circuit and other circuits must be guaranteed. To prevent infringement of the protective separation (between SELV circuit to other circuits) an additional fixing has to be provided near to the terminals. This additional fixing shall clamp the insulation and not the conductor"

Inputs and outputs

It is recommended to keep the input/output and relay cables separate from the valve power cable. All the analogue inputs, the digital I/Os and the serial ports (not optically isolated) refer to GND, and consequen-ly applying, even temporarily, voltages greater than ±5 V to these connections may cause a irreversible damage to the driver. As GND is the common earth for all the inputs, this should be replicated on the terminal block.

Commissioning

Power up the driver, the display will come on and when starting for the first time, will guide the installer through the entry of the 4 parameters required to start operation: type of refrigerant, type of valve, type of pressure sensor, type of main control (and network address if necessary).

If the EVD evolution TWIN and display have different firmware versions, a warning message will be displa-yed. To update the firmware see the user manual.

The driver cannot operate until the configuration procedure has been completed.

UPLOAD, DOWNLOAD and RESET parameters procedure (display)

▲ The procedure must be caried out with the driver/drivers connected to the power supply.

DO NOT unplug the display from the driver during UPLOAD, DOWNLOAD or RESET procedures.

- press the Help and Enter buttons together for 5 seconds;
- this accesses a multiple choice menu, use UP/DOWN to select the required procedure;
- confirm by pressing ENTER.

UPLOAD: the display saves all the values of the parameters from driver 1 (source).

DOWNLOAD: the display copies all the values of the parameters to driver 2 (destination); the parameters cannot be downloaded if the firmware on the source and destination drivers is incompatible.

RESET: all the driver parameters are returned to the default values. See the table of parameters in the driver user manual.

Technical specifications	
Power supply (Lmax=5 m)	24 Vdc (+10/-15%) to be protected by 2 A external type T fuse. <p>24 Vac (+10/-15%) 50/60 Hz to be protected by 2 A external type T fuse. Use a dedicated class 2 transformer (max 100 VA).</p>
Power input	16,2 W <p>35 VA</p>
Emergency power supply	22Vdc+/-5%. (If optional module EVD0000UC0 is installed, Lmax= 5 m)
Insulation between relay output and other outputs	reinforced; 6 mm in air, 8 mm on surface; 3750 V insulation
Motor connection	CAREL 4-wire shielded cable code E2VCABS*00, or 4-wire shielded cable AWG22 Lmax 10 m, or 4-wire shielded cable AWG14 Lmax 50 m
Digital input connection	Digital input to be activated from free contact or transistor to GND. Closing current 5mA; Lmax< 30 m
Sensors (Lmax=10 m; less than 30 m with shielded cable)	51 ratiometric pressure sensor (0 to 5 V): • resolution 0.1 % FS; • measurement error: 2% FS maximum; 1% typical <p>electronic pressure sensor (4 to 20 mA): • resolution 0.5 % FS; • measurement error: 8% FS maximum; 7% typical</p> <p>combined ratiometric pressure sensor (0 to 5 V): • resolution 0.1 % FS; • measurement error: 2 % FS maximum; 1 % typical</p> <p>52 low temperature NTC: • 10kΩ at 25°C, -50T90°C; • measurement error: 1°C in range -50T50°C; 3°C in range +50T90°C</p> <p>high temperature NTC: • 50kΩ at 25°C, -40T150°C; • measurement error: 1.5°C in the range -20T115°C, 4°C in range outside of -20T115°C</p> <p>combined NTC: • 10kΩ at 25°C, -40T120°C; • measurement error: 1°C in range -40T50°C; 3°C in range +50T90°C</p> <p>0 to 10 V input (max 12 V): • resolution 0.1 % FS; • measurement error: 9% FS maximum; 8% typical</p> <p>53 ratiometric pressure sensor (0 to 5 V): • resolution 0.1 % FS; • measurement error: 2% FS maximum; 1% typical</p> <p>electronic pressure sensor (4 to 20 mA): • resolution 0.5 % FS; • measurement error: 8% FS maximum; 7% typical</p> <p>4 to 20 mA input (max 24 mA): • resolution 0.5 % FS; • measurement error: 8% FS maximum; 7% typical</p> <p>ratiometric pressure sensor combined (0 to 5 V): • resolution 0.1 % FS, • measurement error: 2 % FS maximum; 1 % typical</p> <p>54 low temperature NTC: • 10kΩ at 25°C, -50T105°C; • measurement error: 1°C in range -50T50 °C; 3°C in range 50T90°C</p> <p>high temperature NTC: • 50kΩ at 25°C, -40T150°C; • measurement error: 1.5°C in range -20T115°C 4°C in range outside of -20T115°C</p> <p>combined NTC: • 10kΩ at 25°C, -40T120°C; • measurement error: 1°C in range -40T50°C; 3°C in range +50T90°C</p>
Relay output	normally open contact; 5 A, 250 Vac resistive load; 2 A, 250 Vac inductive load (PF=0.4); Lmax=50 m; UL: 250 Vac, 5 A res., 1A FLA, 6 A LRA, D300 pilot duty, 30.000 cycles;VDE: 1(1)A PF=0.6
Power to active sensors (V _{ref})	programmable output: +5Vdc+/-2% or 12Vdc+/-10%
RS485 serial connection	Lmax=1000 m, shielded cable
tLAN connection	Lmax=30 m, shielded cable
pLAN connection	Lmax=500 m, shielded cable
Assembly	DIN rail
Connectors	plug-in, cable size 0.5 to 2.5 mm2 (12 to 20 AWG)
Dimensions	LxHxW= 70x110x60
Operating conditions	-25T60°C (don't use EVDIS* under -20°C); <90% rH non-condensing
Storage conditions	-35T60°C (don't store EVDIS* under -30°C), humidity 90% rH non-condensing
Index of protection	IP20
Environmental pollution	2 (normal)
Resistance to heat and fire	Category D
Immunity against voltage surges	Category I
Rated impulse voltage	2500V
Type of relay action	1C microswitching
Class of insulation	2
Software class and structure	A
Conformity	Electrical safety: EN 60730-1, EN 61010-1, UL873, VDE 0631-1 <p>Electromagnetic compatibility: EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4; EN61000-3-2, EN55014-1, EN55014-2, EN61000-3-3.</p>

CHI EVD evolution TWIN* 驱动器是一个PID功能的控制器，用于管理制冷剂回路中的过热程度。它能用双对极步进电机独立地控制两个电子膨胀阀。显示屏（配件）能被用来安装在驱动器上，不是运行所必须的。使用 CAREL VPM（图像参数管理器）软件，驱动器还能通过一台计算机来设置，该软件可从卡乐网站获取，http://ksa.carel.com. 通过串行连接，驱动器还能与 CAREL pCO 系列控制器连接，或连接到 CAREL PlantVisorPRO 监视器。

▲ 安装警告：
1. 所有安装和维护工作必须在驱动器未通电时进行；
2. 避免G, G0 & Vbat之间短路。

- * EVD EVO 是一个要并入终端装置的控制器，请勿用于嵌入式安装。
- * DIN VDE 0100: 必须保证SELV回路与其它回路之间的保护隔离。为防止对保护隔离的破坏 (SELV 回路与其它回路之间)，在连接端附近必须采用附加的固定措施。这种附加的固定措施需要夹紧绝缘而不是导线。

输入和输出

建议将输入、输出和继电器电缆与阀电源线分开。所有的模拟量输入，开关量输入/输出和串行端口（非光学隔离）参考GND。如果在这些端子上施加的电压远超过可能导致对驱动器不可恢复的损坏。因为GND是所有输入的共同接地端，因此必须使用螺栓端子排。

指令

驱动器通电，显示屏将开始显示，并且当第一次启动时，将指导安装商进入启动运行的4个参数：制冷剂类型，阀类型，压力传感器类型，控制主要类型（网络地址如有必要）。

EVD evolution TWIN 和显示屏有不同的硬件版本，将显示一个报警信息。要更新硬件，参考用户手册。
驱动器不能运行直到设置程序已经完成。

上载，下载和复位参数的程序（显示器）

▲ 这项操作必须在驱动器带电的情况下才能进行。

不要在上载，下载或复位的过程中将显示器从驱动器上拿下。

- 同时按下Help和Enter键保持5秒;
- 进入到一个多选项单，使用UP/DOWN键来选择所需的程序;
- 按下ENTER键确认。

上载: 显示器保存驱动器 1（源头）上的所有的参数值。

下载: 显示器将所有的参数值复制到驱动器2（终点）；源驱动器与目标驱动器硬件不兼容，参数不能下载。

复位: 所有驱动器参数能返回到默认值。参考驱动器中的参数表。

技术规范	
电源 (最大长度为 5 m)	24 Vdc (+10/-15%)，由 2 A T 型保险丝保护。 <p>24 Vac (+10/-15%) 50/60 Hz，由 2 A T 型保险丝保护。使用一个专用的 2 类变压器（最大为 100 VA）。</p>
输入功率	16,2 W <p>35 VA</p>
备用电池	22 Vdc+/-5%。(如果安装了可选的EVD0000UC0模块，最大长度为 = 5 m)
继电器输出和其它输出之间的绝缘	绝缘：空间传导，6 mm，爬行距离，8 mm
电机连接	CAREL 4芯屏蔽电缆 产品代码 E2VCABS*00, 或者 4芯屏蔽电缆 AWG22 最大长度17uy0 m, 或者 4芯屏蔽电缆AWG14 最大长度50m
开关量输入连接	通过将无源触点或晶体管接至GND 激活开关量输入；最大长度< 30 m
传感器 (最大长度=10 m; 使用屏蔽线小于 30 m)	51 公制比率压力传感器 (0 - 5 V)；精度 0.1 % FS；测量误差：最大为2% FS；通常是1% <p>电子压力传感器 (4 - 20 mA)；精度0.5 % FS；测量误差：最大为8% FS；通常是7% <p>组合式公制比率压力传感器 (0 - 5 V)；精度0.1 % FS；测量误差：最大为2 % FS；通常是1% <p>4-20 mA V 输入（最大为24 mA）；精度0.5 % FS；测量误差：最大为 8 % FS；通常是7 % <p>52 低温NTC传感器：在25°C 时是10kΩ，-50到90°C；测量误差：在-50到 50°C 之间是1°C；在+50T到90°C之间是3°C <p>高温NTC传感器：在25°C 时是50kΩ，-40到150°C；测量误差：在-20到115°C 之间是1.5°C；-20到115°C以外是 4°C <p>组合式NTC传感器：在25°C 时是10kΩ，-40到120°C；测量误差：在-40到50°C之间是1°C；在+50到115°C之间是3°C <p>0 - 10 V 输入（最大为12 V）；精度0.1 % FS；测量误差：最大为9% FS；通常是8% typical <p>53 公制比率压力传感器 (0 - 5 V)；精度 0.1 % FS；测量误差：最大为2% FS；通常是1% <p>电子压力传感器 (4 - 20 mA)；精度0.5 % FS；测量误差：最大为8% FS；通常是7% <p>4–20 mA V 输入（最大为24 mA）；精度0.5 % FS；测量误差：最大为 8% FS；通常是7% <p>组合式公制比率压力传感器 (0 - 5 V)；精度0.1 % FS；测量误差：最大为2% FS；通常是1% <p>54 低温NTC传感器：在25°C 时是10kΩ，-50到105°C；测量误差：在-50到 50 °C之间是1°C；在50到90°C之间是3°C <p>高温NTC传感器：在25°C 时是50kΩ，-40到150°C；测量误差：在-20到115°C 之间是1.5°C；在-20到115°C以外是 4°C <p>组合式NTC传感器：在25°C 时是10kΩ，-40到120°C；测量误差：在-40到50°C之间是1°C；在+50到90°C之间是3°C <p>常开触点，5 A，250 Vac阻性负载，2 A，250 Vac；感性负载 (PF=0.4)；最大长度=50 m; UL: 250 Vac, 5 A 阻性负载, 1A FLA, 6 A LRA, D300 抗电强度 30,000 次；VDE: 1(1)A PF=0.6 <p>可编辑输出: +5Vdc+/-2% 或 12Vdc+/-10% <p>最大长度=1000 m, 屏蔽电缆 <p>最大长度=30 m, 屏蔽电缆 <p>最大长度=500 m, 屏蔽电缆 <p>安装 <p>DIN 导轨 <p>端子 <p>插拔式，电缆尺寸0.5 - 2.5 mm² (12 - 20 AWG) <p>尺寸 <p>LxHxW= 70x110x60 <p>运行条件 <p>-25–60°C (在低于-20°C时，请勿使用EVDIS*)；<90% rH，无冷凝 <p>存储条件 <p>-35–60°C (在低于-30°C时，请勿使用EVDIS*)，湿度90% rH，无冷凝 <p>防护等级 <p>IP20 <p>环境污染 <p>隔热及阻燃类别 <p>D类 <p>抗浪涌 <p>1类 <p>Rated impulse voltage <p>2500V <p>继电器动作类型 <p>1C 微型开关 <p>绝缘类型 <p>2 <p>软件分类和结构 <p>A <p>规范 <p>电气安全：EN 60730-1, EN 61010-1, UL873, VDE 0631-1 <p>电磁兼容：EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4; EN61000-3-2, EN55014-1, EN55014-2, EN61000-3-3</p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p></p>
继电器输出	normally open contact; 5 A, 250 Vac resistive load; 2 A, 250 Vac inductive load (PF=0.4); Lmax=50 m; UL: 250 Vac, 5 A res., 1A FLA, 6 A LRA, D300 pilot duty, 30.000 cycles;VDE: 1(1)A PF=0.6
有源传感电源 (V _{ref})	programmable output: +5Vdc+/-2% or 12Vdc+/-10%
RS485串行连接	Lmax=1000 m, shielded cable
tLAN串行连接	Lmax=30 m, 屏蔽电缆
pLAN串行连接	Lmax=500 m, 屏蔽电缆
安装	DIN 导轨
端子	插拔式，电缆尺寸0.5 - 2.5 mm ² (12 - 20 AWG)
尺寸	LxHxW= 70x110x60
运行条件	-25–60°C (在低于-20°C时，请勿使用EVDIS*)；<90% rH，无冷凝
存储条件	-35–60°C (在低于-30°C时，请勿使用EVDIS*)，湿度90% rH，无冷凝
防护等级	IP20
环境污染	2 (正常)
隔热及阻燃类别	D类
抗浪涌	1类
Rated impulse voltage	2500V
继电器动作类型	1C 微型开关
绝缘类型	2
软件分类和结构	A
规范	电气安全：EN 60730-1, EN 61010-1, UL873, VDE 0631-1 <p>电磁兼容：EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4; EN61000-3-2, EN55014-1, EN55014-2, EN61000-3-3</p>

RUS EVD evolution TWIN драйвер является PID контроллером, управляющим перегревом в холодильном контуре. Он может независимо управлять двумя электронными расширительными вентилями с двумя шаговыми моторами. Дисплей может использоваться для установки параметров драйвера, но не является обязательным в процессе работы. Драйвер можно конфигурировать с компьютера с помощью программного обеспечения (ПО) CAREL VPM (Visual Parameter Manager); программу можно загрузить с http://ksa.carel.com. Драйвер подключается к контроллеру CAREL серии pCO через последовательное соединение, а также может быть подключен к системе мониторинга CAREL PlantVisorPRO.

▲ Особенности монтажа:
1. установка и монтаж должны осуществляться при выключенном драйвере;
2. не допускать короткого замыкания контактов G, G0 и Vbat.

- * EVD EVO является драйвером, встроенным в оконечное оборудование, не используется для скрытого монтажа.
- * DIN VDE 0100: Должно быть предусмотрено защитное разделение между контурами SELV и другими контурами. Для предотвращения повреждения защитного разделения (между контуром SELV и другими контурами) необходимо предусмотреть рядом с выводами защитный крепеж. Данный дополнительный крепеж фиксирует изоляцию, а не проводник".

Входы и выходы: Рекомендуется отделить кабели вход/выход и реле от кабеля питания клапана. Не допускается подача напряжения, даже временно, более ±5 В на все аналоговые входы, цифровые входы/выходы и последовательные порты (без оптической изоляции); это может вызвать необратимое повреждение драйвера. GND - общее заземление для всех входов, аналогичо должно быть и на терминальном блоке.

Включение: При первом включении драйвера, на дисплее появятся подсказки как ввести 4 параметра, необходимых для начала работы: тип хладогента, тип клапана, тип датчика давления, способ управления (а также сетевой адрес устройства при необходимости). Если EVD evolution TWIN и дисплей имеют разные версии встроенного программного обеспечения (ПО), на экране появится предупреждение. Для обновления программного обеспечения см. руководство пользователя, код Драйвер не будет работать пока не закончена процедура конфигурирования.

Процедура загрузки, выгрузки и восстановления параметров (дисплей)

▲ Процедура должна выполняться при включенном драйвере/драйверах.

НЕ ОТКЛЮЧАЙТЕ дисплей от драйвера во время процедуры ЗАГРУЗКИ, ВЫГРУЗКИ или ВОССТАНОВЛЕНИЯ параметров.

- нажмите и удерживайте в течение 5 секунд вместе кнопки Help и Enter;
- это дает доступ в меню множественного выбора, используйте кнопки UP/DOWN для выбора необходимой процедуры;
- подтвердите, нажав кнопку ENTER.

ВЫГРУЗКА: дисплей сохраняет все параметры драйвера 1 (источника).

ЗАГРУЗКА: дисплей копирует все значения параметров в драйвер 2 (получатель); параметры не могут быть загружены, если встроенные ПО источника и получателя несовместимы.

ВОССТАНОВЛЕНИЕ: все параметры длрайвера принимают значения по умолчанию. См. таблицу параметров в руководстве пользователя драйвера.

Техническая спецификация	
Электроспитание (Lmax=5 m)	24 Vdc (+10/-15%) Hz da proteggere con fusibile esterno di tipo T da 2 A, 24 Vac (+10/-15%) 50/60 Hz, защита внешним предохранителем 2 A. <p>Использовать трансформатор 2 класса (max 100 VA).</p>
Входная мощность	16,2 W <p>35 VA</p>
Аварийная мощность	22Vdc+/-5%. (если установлен дополнительный модуль EVD0000UC0, Lmax= 5 m)
Изоляция между выходными реле и другими выходами	усиленная; 6 mт воздушная, 8 mтп на поверхности; изоляция 3750 V
Подключение двигателя	4-х жильный экранированный кабель E2VCABS*00, или 4-х жильный экранированный кабель AWG 22, макс. длина 10 м, или 4-х жильный экранированный кабель AWG 14 макс. длина 50 м
Подключение цифрового входа	Цифровой вход активируется свободным контактом или транзистором на GND. Ток закрытия 5mA; Lmax< 30 m
Датчики (Lmax=10 м; < 30 м экранированный кабель)	51 ратиометрический датчик давления (0-5 В); разрешение 0.1 % FS; погрешность измерения: макс. 2% FS; обычно 1% <p>электронный датчик давления (4-20 mA); разрешение 0.5% FS; погрешность измерения: макс. 8% FS; обычно 7%</p> <p>комбинированный ратиометрический датчик давления (0-5 В); разрешение 0.1% FS; погрешность измерения: макс. 2% FS; обычно 1%</p> <p>вход 4-20 mA (макс. 24 mA); разрешение 0.5% FS; макс. погрешность измерения 8% FS; обычно 7%</p> <p>52 низкотемпературный NTC: 10 кΩм при 25 °C, от -50 до </p>