ENGINEERING TOMORROW

Installation guide

Pressure regulating valve

KVP, KVL, KVR, KVD, KVC

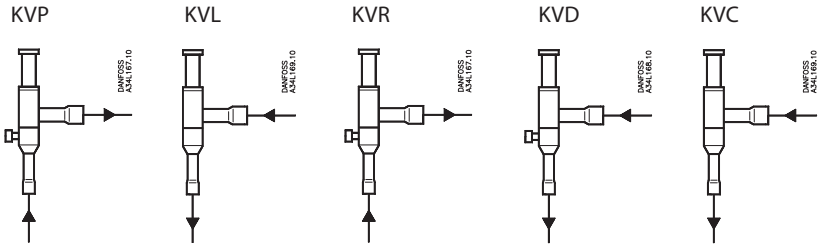
034R9506

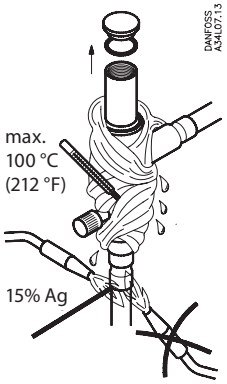
Refrigerants:

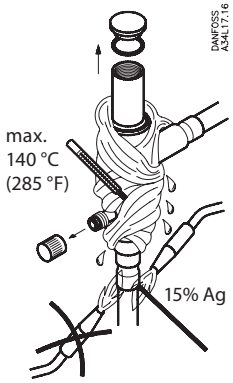
R22, R1270*, R134a, R290*, R404A, R407A, R407C, R407F, R448A, R449A, R450A, R452A, R507A, R513A, R600*, R600a*

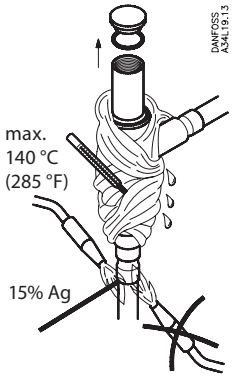
* Applicable for KVP 12 – KVP 22, KVL 12 – KVL 22, KVR 12 – KVR 22, KVD 12 – KVD 15, KVC 12 – KVC 22

For complete list of approved refrigerants, visit **www.products.danfoss.com** and search for individual code numbers, where refrigerants are listed as part of technical data.

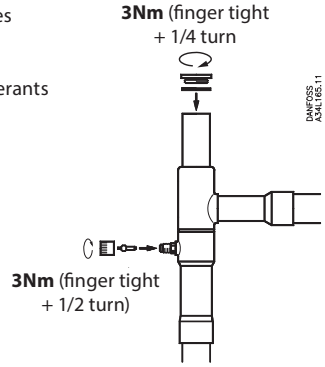






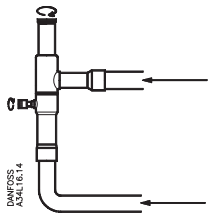


NB! Tightening torques must be respected especially when used with flammable refrigerants

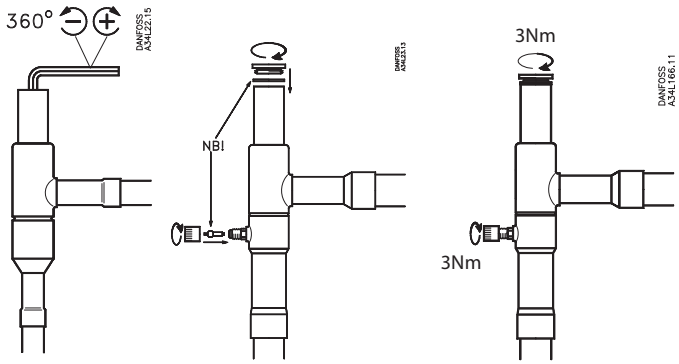


034R9506

KVP	KVP 12	360° ~ 0.45 bar (6 psi)	p_e = 2 bar
	KVP 15		
	KVP 22		
	KVP 28	360° ~ 0.30 bar (4 psi)	
	KVP 35		
KVL	KVL 12	360° ~ 0.45 bar (6 psi)	
	KVL 15		
	KVL 22		
	KVL 28	360° ~ 0.30 bar (4 psi)	
	KVL 35		
KVC	KVC 12	360° ~ 0.45 bar (6 psi)	
	KVC 15		
	KVC 22		
KVR	KVR 12	360° ~ 2.50 bar (36 psi)	p_e = 10 bar
	KVR 15		
	KVR 22		
	KVR 28	360° ~ 1.50 bar (22 psi)	
	KVR 35		
KVD	KVD 12	360° ~ 2.50 bar (36 psi)	
	KVD 15		
	KVD 22		



	t_{max}	t_{min}	PS/MWP
KVP	130 °C (265 °F)	-45 °C (-50 °F)	18 bar (260 psig)
KVL	130 °C (265 °F)	-60 °C (-75 °F)	18 bar (260 psig)
KVR, KVD, KVC	130 °C (265 °F)	-45 °C (-50 °F)	28 bar (406 psig)



Installation Guide

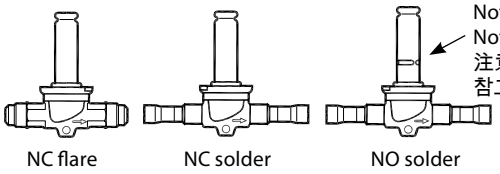
Service kit for solenoid valves
Type EVR 4 - EVR 8 (EVO 102 and EVO 202)

032R9555

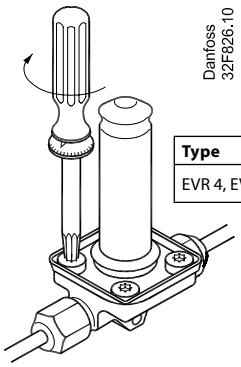
Refrigerants / Refrigerantes / 冷媒 / 냉매.

R22/R407C, R404A/R507, R410A, R134a, R407A, R23.

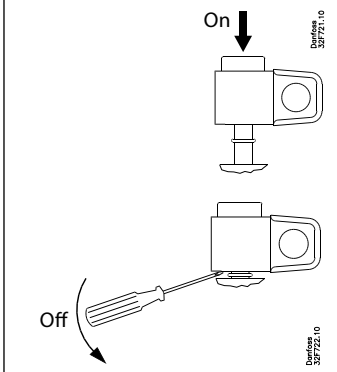
For other refrigerants, please contact Danfoss.
Para otros refrigerantes, por favor contacte con Danfoss
如需用于其它冷媒系统 , 请联系丹佛斯。
위의 이외 냉매에 대해서는 연락을 주십시오.

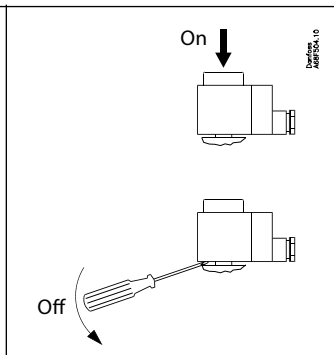


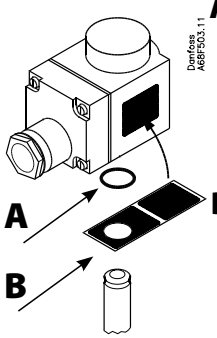
032R9555



Type	[Nm]	[kpm]	[ft-lbs]	Torx size
EVR 4, EVR 6, EVR 8	2.0	0.2	1.44	T15/T20



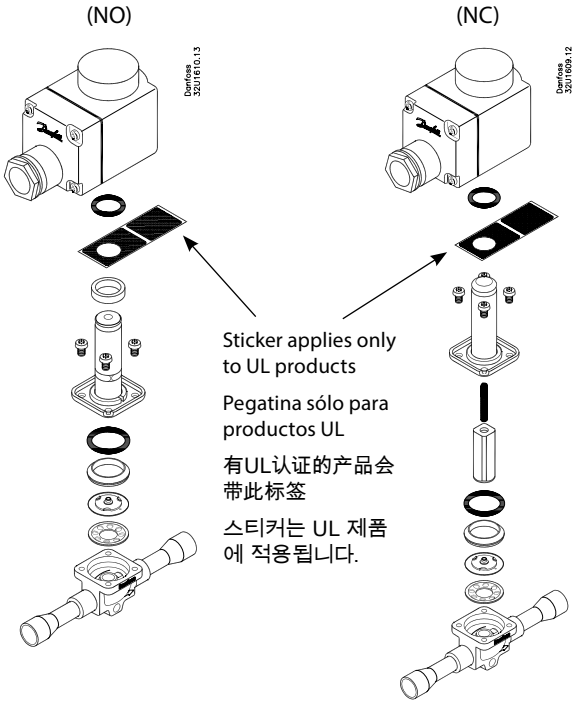




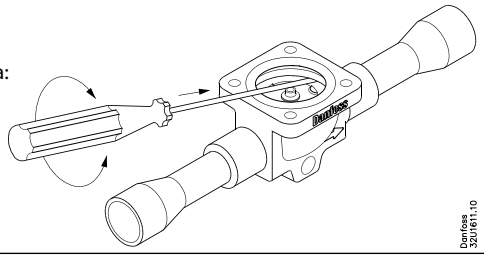
A: Be sure that the O-ring is in place
Asegúrese de que la junta esté en su lugar.
请确保O型圈安装在正确的位置
O-링이 제자리에 있는지 확인합니다.

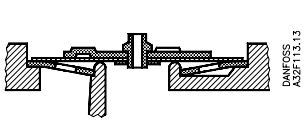
B: Sticker applies only to UL products
Pegatina sólo para productos UL
有UL认证的产品会带此标签
스티커는 UL제품에 적용됩니다.

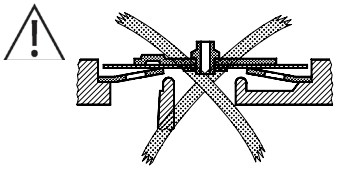
⚠	**Warning**	Never switch on power to the coil when the coil is dismounted from the valve. Otherwise the coil may be damaged and there is risk of injuries and burns.
	Advertencia	Nunca alimente la bobina cuando la bobina no esté montada en la válvula. De lo contrario la bobina podria dañarse y hay riesgo de lesiones y quemaduras.
	警告	当线圈没有安装在阀上时 , 请确保线圈断电。否则线圈会被损坏甚至烧毁。
	주의	밸브에서 분리 된 코일에 전원을 인가하지 마십시오. 그렇지 않으면 코일이 손상 되거나 부상과 화상의 위험이 있습니다.



Dismounting gasket:
Press and twist
Desmontaje de la junta:
presione y gire
拆下垫圈 :
按压并旋转
가스켓 분리
누른 후 돌림







Warning
Valve with square O-ring: replace the square O-ring.
Valve with O-ring: replace both O-ring and support ring.
Advertencia
Válvula con junta tórica cuadrada: sustituir la junta tórica cuadrada
Válvula con junta tórica: sustituir la junta tórica y el anillo de soporte
警告
带有方形O圈的阀体 : 请替换方形的O圈
带有O圈的阀体 : 请同时替换O圈和支撑环
경고
사각 O-링 밸브 : 사각 O-링을 교체하십시오.
O-링 밸브 : O-링과 서포트 링을 함께 교체하십시오.

ENGINEERING TOMORROW

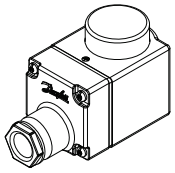
Installation guide

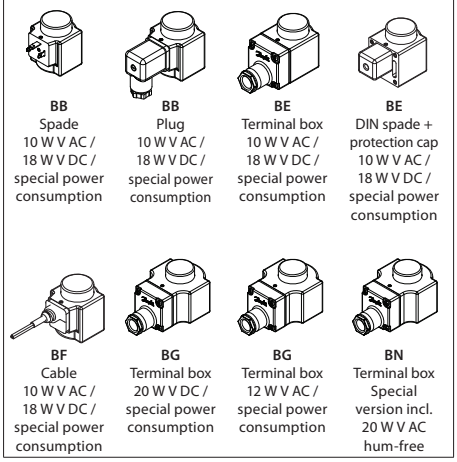
Solenoid coil

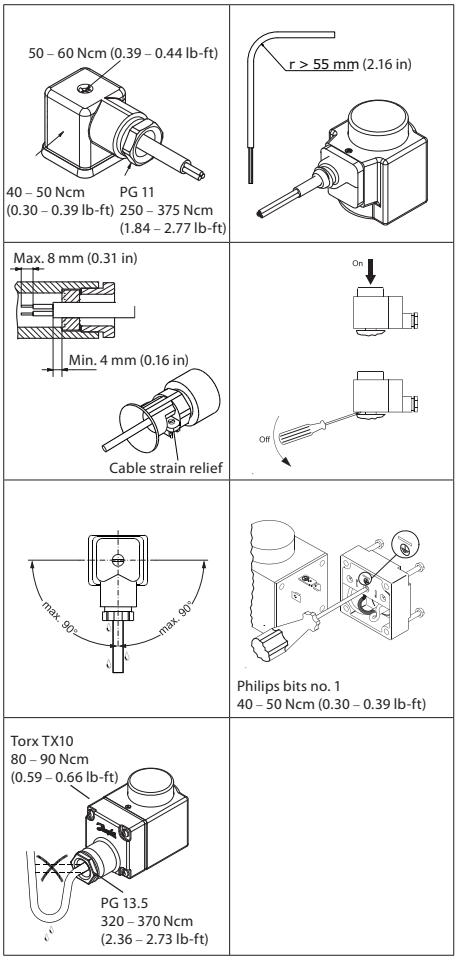
Types BB, BE, BF, BG, and BN

UK CA 089

018R9666







ENGLISH	
Type of control	1
Safety classification	Class I
Ambient temperature	10 – 12 W V AC NC valve -40 – 80 °C (-40 – 176 °F) 10 – 12 W V AC NO valve -40 – 55 °C (-40 – 131 °F) 10 W dual frequency -40 – 50 °C (-40 – 122 °F) 20 W V AC -40 – 50 °C (-40 – 122 °F) 18 – 20 W V DC -40 – 50 °C (-40 – 122 °F)
Humidity	0 – 100% R.H. (0 – 97% R.H. non-condensation condition if IP level is below IPX5/NEMA X4)
Voltage variation	10 – 12 W single frequency -15% – 10% 10 W dual frequency -10% – 10% 20 W V AC -15% – 10% 18 – 20 W V DC -10% – 10%
Ball pressure test	200 °C (392 °F)
Impulse withstand voltage	Terminal box 4.0 kV at altitude <4000 m (13123 ft) Cable 4.0 kV at altitude <4000 m (13123 ft) Spade 4.0 kV at altitude <4000 m (13123 ft) Plug 4.0 kV at altitude <2000 m (6561 ft) Plug 3.1 kV 2000 m<altitude<4000 m (6561<altitude<13123 ft)
Enclosure rate IPXX Pollution degree PDX	Terminal box IP67 PD4 Cable IP67 PD4 Plug IP65 PD3 Spade IP00 PD3 Protection cap IP20 PD3
Installation	Integrated control Incorporated control Independently mounted control (IP65 and IP67)
Suitable cable and conductor size for plug and terminal box	ø6.6 – ø11 mm (ø0.26 – ø0.43 in) 0.75 – 1.5 mm² (21 – 15 AWG flexible cord)
Number of mating for plug	10 times
Cable size Cable conductor size	ø6.6 mm (ø0.26 in) 3 x 0.75 mm² (3 x 0.001 in²) Installation and handling for cable: > 5 °C (41 °F)

⚠
- Only qualified personnel is allowed to install or maintain this product
- Disconnect the power when dismounting the coil
- Avoid direct exposure to alkaline conditions, use in neutral conditions is recommended
- Ensure that the O-ring is in place on the valve
- If the coil is used as independently mounted control, the end-user shall use a plastic cable gland with strain relief

Special note for R152A, R32, R290, R600, R600a, R1234yf, and R1234ze:
The 13,5 mm coil (IP65/67) is validated in accordance to ISO 5149, IEC 60335 (ref. IEC/EN 60079-15). Ignition risk is evaluated in accordance to ISO 5149 and IEC 60335 (ref. IEC/EN 60079-15). Please make sure that there is no spark, arc on the spade connection during the application.
Always Install a fuse ahead of the coil: rated current: two times of rated current, time lag: medium, to avoid short circuit.
The coil used in an area of not more than pollution degree 2.

Follow the installation guide to mount the coil correctly, and apply o-ring for sealing to prevent moisture penetrating inside the coil.

Safety note:
The 13.5 mm coil (IP65/67) can be applied on systems with R152A, R32, R290, R600, R600a, R1234yf, and R1234ze as the working fluid.
For countries where safety standards are not an indispensable part of the safety system Danfoss recommends the installer gets a third party approval of any system containing flammable refrigerant.
Please follow specific selection criteria stated in the datasheet for these particular refrigerants.
Note that 13.5 mm coil (IP65/67) has NOT been verified ATEX or IECEx or IEC 60079 series zone 2 compliant. The product is only validated for systems in compliance with ISO5149, IEC 60335 (ref. IEC/EN 60079-15). It is the responsibility of the user to verify such compliance.
Improper use can cause explosion, fire, leakage potentially causing death, personal injury, or damage to property.

Імпортер:ТОВ з ії "Данфосс ТОВ" 04080, Київ 80, п/с 168, Україна

Info for UK customers only: Danfoss Ltd., 22 Wycombe End, HP9 1NB, GB

DEUTSCH	
Art der Steuerung	1
Sicherheitsklassifizierung	Klasse I
Umgebungstemperatur	10 – 12 W V AC NC-Ventil -40 °C – +80 °C 10 – 12 W V AC NO-Ventil -40 °C – +55 °C 10 W Doppelfrequenz -40 °C – +50 °C 20 W V AC -40 °C – +50 °C 18 – 20 W V DC -40 °C – +50 °C
Luftfeuchtigkeit	0–100% rF (0–97%rF, nicht kondensierend bei IP Schutzgrad kleiner IPX5/NEMA X4)
Spannungsabweichung	10 – 12 W Einzelfrequenz -15 % – +10 % 10 W Doppelfrequenz -10 % – +10 % 20 W V AC -15 % – +10 % 18 – 20 W V DC -10 % – +10 %
Kugeldruckprüfung	200 °C
Stehstoßspannungs-festigkeit	Klemmdose 4,0 kV bei Höhen von <4000 m Kabel 4,0 kV bei Höhen von <4000 m Steckzunge 4,0 kV bei Höhen von <4000 m Stecker 4,0 kV bei Höhen von <2000 m Stecker 3,1 kV 2000 m<bei Höhen von <4000 m
Schutzart IPXX Verschmutzungsgrad PDX	Klemmdose IP67 PD4 Kabel IP67 PD4 Stecker IP65 PD3 Steckzunge IP00 PD3 Schutzkappe IP20 PD3
Installation	Integriertes RS Eingebautes RS Unabhängig montiertes RS (IP65 und IP67)
Kabel und Leitergröße, die für Stecker und Klemm-dose geeignet sind	ø6,6 – ø11 0,75 – 1,5 mm² flexibles Kabel
Anzahl der Steckzyklen	10
Kabelgröße Kabelleiterquerschnitt	ø6,6 3 x 0,75 mm² Installation und Handhabung der Kabel: > +5 °C

⚠
- Nur qualifiziertes Personal darf dieses Produkt installieren und/oder warten.
- Spule vor der Demontage von der Spannungsversorgung trennen.
- Die unmittelbare Einwirkung von alkalischen Bedingungen ist zu vermeiden. Stattdessen wird eine Verwendung unter neutralen Bedingungen empfohlen.
- Stellen Sie sicher, dass der O-Ring richtig am Ventil angebracht ist.
- Wenn die Spule in einem unabhängig montierten RS verwendet wird, hat der Endverbraucher eine Kunststoff-Kabelverschraubung mit Zugentlastung zu verwenden.

Besonderer Hinweis für R152A, R32, R290, R600, R600a, R1234yf und R1234ze:
Die 13,5-mm-Spule (IP 65/67) wurde gemäß den Normen ISO 5149 und IEC 60335 geprüft (Ref. IEC/EN 60079-15). Die Explosionsgefahr wurde in Übereinstimmung mit den Normen ISO 5149 und IEC 60335 beurteilt (Ref. IEC/EN 60079-15). Stellen Sie sicher, dass am Flachstecker während der Anwendung kein Funke/Lichtbogen entsteht.
Installieren Sie vor der Spule immer eine Sicherung: Nennstrom: doppelter Nennstrom, mittelträge, um einen Kurzschluss zu vermeiden.
Die Spule darf höchstens bei Verschmutzungsgrad 2 eingesetzt werden.

Um eine korrekte Montage der Spule sicherzustellen, befolgen Sie die Installationsanleitung. Verwenden Sie zur Abdichtung einen O-Ring, um das Eindringen von Feuchtigkeit in die Spule zu verhindern.

Sicherheitshinweis:
Die 13,5-mm-Spule (IP 65/67) kann in Anlagen mit R152A, R32, R290, R600, R600a, R1234yf und R1234ze als Arbeitsmedium eingesetzt werden.
In Ländern, in denen Sicherheitsnormen keinen unerlässlichen Bestandteil des Sicherheitssystems bilden, empfiehlt Danfoss Installateuren, Anlagen, die brennbares Kältemittel enthalten, von Dritten genehmigen zu lassen.
Bitte beachten Sie die im Datenblatt angegebenen spezifischen Auswahlkriterien für die jeweiligen Kältemittel.
Bitte beachten Sie, dass die Konformität der 13,5-mm-Spule (IP 65/67) mit Serien ATEX oder IECEx oder IEC 60079, Zone 2 NICHT geprüft wurde. Das Produkt ist nur für Anlagen in Übereinstimmung mit ISO 5149, IEC 60335 (Ref. IEC/EN 60079-15) zugelassen. Der Benutzer ist für die Überprüfung dieser Übereinstimmung verantwortlich.
Ein unsachgemäßer Gebrauch kann zu Explosionen, Brand oder Leckagen und potenziell zum Tod, Verletzungen oder Sachschäden führen.

FRANÇAIS	
Type de commande	1
Classification de sécurité	Classe I
Température ambiante	10 – 12 W V c. a. Vanne NF -40 °C – +80 °C 10 – 12 W V c. a. Vanne NO -40 °C – +55 °C 10 W double fréquence -40 °C – +50 °C 20 W V c.a. -40 °C – +50 °C 18 – 20 W V c.c. -40 °C – +50 °C
Humidité	0-100% H.R (0-97% H.R dans des conditions de non-condensation si l'indice IP < IPX5/NEMA X4)
Variation de tension	10 – 12 W simple fréquence -15 % – +10 % 10 W double fréquence -10 % – +10 % 20 W V c.a. -15 % – +10 % 18 – 20 W V c.c. -10 % – +10 %
Essai de pression à la bille	200 °C
Tension de tenue aux chocs	Boîte à bornes 4,0 kV à une altitude <4 000 m Câble 4,0 kV à une altitude <4 000 m Cosse 4,0 kV à une altitude <4 000 m Connecteur 4,0 kV à une altitude <2 000 m Connecteur 3,1 kV 2000 m<à une altitude<4000 m
Indice de protection IPXX Degré de pollution PDX	Boîte à bornes IP67 PD4 Câble IP67 PD4 Connecteur IP65 PD3 Cosse IP00 PD3 Capuchon de protection IP20 PD3
Installation	Commande intégrée Commande incorporée Commande indépendante (IP65 et IP67)
Taille appropriée des conducteurs et câbles pour le connecteur et la boîte à bornes	Câble ø6,6 – ø11 Conducteur 0,75 – 1,5 mm²
Nombre de branchements du connecteur	10 fois
Taille du câble Taille du conducteur	ø6,6 3 X 0,75 mm² Installation et manipulation du câble : > +5 °C

⚠
- Seul un personnel qualifié est autorisé à installer ou à entretenir ce produit.
- Débranchez l'alimentation lors du démontage de la bobine.
- Évitez toute exposition directe avec des milieux alcalins, l'utilisation en milieux neutres est recommandée.
- Assurez-vous que le joint torique est en place sur la vanne.
- Si la bobine est utilisée comme commande indépendante, l'utilisateur final doit employer un presse-étoupe en plastique muni d'un dispositif anti-traction.

Remarque particulière pour R152A, R32, R290, R600, R600a, R1234yf et R1234ze :
La bobine de 13,5 mm (IP65/67) est validée conformément aux normes ISO 5149, CEI 60335 (réf. CEI/EN 60079-15). Le risque de combustion est évalué conformément aux normes ISO 5149 et CEI 60335 (réf. CEI/EN 60079-15). Vérifiez l'absence d'étincelles et d'arcs électriques sur le raccord en fourche pendant l'application.
Installez systématiquement un fusible en amont de la bobine : courant nominal : deux fois le courant nominal, temporisation : moyenne, pour éviter tout court-circuit.
La bobine doit être utilisée dans une zone caractérisée par un degré de pollution inférieur ou égal à 2.

Consultez le guide d'installation pour monter la bobine correctement et placez le joint torique pour garantir un haut degré d'étanchéité afin de prévenir toute entrée d'humidité dans la bobine.

Avis de sécurité :
La bobine 13,5 mm (IP65/67) peut être appliquée sur des systèmes utilisent les fluides R152A, R32, R290, R600, R600a, R1234yf, et R1234ze.
Pour les pays où les normes de sécurité ne constituent pas un point indispensable du système de sécurité, Danfoss recommande à l'installateur d'obtenir l'accord d'une tierce partie pour tout système contenant un fluide frigorigène inflammable.
Veuillez suivre les critères de sélection spécifiques indiqués dans la fiche technique pour ces fluides frigorigènes spécifiques.
Il convient de noter que la conformité avec les règlementations ATEX, la certification IECEx ou la norme CEI 60079 (zone 2) de la bobine 13,5 mm (IP65/67) n'a PAS été vérifiée. Le produit est seulement certifié pour des systèmes conformes aux normes ISO 5149, CEI 60335 (réf. CEI/EN 60079-15). Il incombe à l'utilisateur de vérifier les questions de conformité. Une mauvaise utilisation peut conduire à des risques d'explosion, d'incendie et de fuite, avec des conséquences telles que des décès, des blessures corporelles ou des dommages matériels.

ESPAÑOL	
Tipo de control	1
Clasificación de seguridad	Clase I
Temperatura ambiente	10 – 12 W; V c.a.; válvula NC -40 °C – +80 °C 10 – 12 W; V c.a.; válvula NA -40 °C – +55 °C 10 W; frecuencia dual -40 °C – +50 °C 20 W; V c.a. -40 °C – +50 °C 18 – 20W; V c.c. -40 °C – +50 °C
Humedad	H.R. 0 - 100% (con una H.R. 0 - 97% no hay condensación en el nivel IP por debajo IPX5/NEMA X4)
Variación de tensión	10 – 12 W; frecuencia sencilla -15 % – +10 % 10 W; frecuencia dual -10 % – +10 % 20 W; V c.a. -15 % – +10 % 18 – 20; V c.c. -10 % – +10 %
Prueba de presión de bola	200 °C
Resistencia a la tensión de impulso	Caja terminal 4,0 kV a < 4000 m de altitud Cable 4,0 kV a < 4000 m de altitud Pala 4,0 kV a < 4000 m de altitud Conector 4,0 kV a < 2000 m de altitud Conector 3,1 kV a < 2000 m<de altitud<4000 m
Grado de protección IPXX Grado de contaminación PDX	Caja terminal IP67 PD4 Cable IP67 PD4 Conector IP65 PD3 Pala IP00 PD3 Tapón de protección IP20 PD3
Instalación	Control integrado Control incorporado Control montado de forma independiente (IP65 e IP67)
Tamaño adecuado del cable y el conductor para el conector y la caja terminal	ø 6,6 – ø 11 0,75 – 1,5 mm², cable flexible
Número de desconexiones del conector	10 veces
Tamaño del cable Tamaño del conductor del cable	ø 6,6 3 x 0,75 mm² Instalación y manipulación del cable: > +5 °C

⚠
- La instalación y el mantenimiento de este producto deben ser llevados a cabo por personal técnico especializado.
- Desconecte la alimentación al desmontar la bobina.
- Evitar la exposición directa a condiciones alcalinas; se recomienda el uso en condiciones neutras
- Asegúrese de que la junta tórica se encuentre instalada en la válvula.
- Si la bobina se emplea como control montado de forma independiente, el usuario final deberá instalar un prensaestopas de plástico con funda protectora.

Nota especial acerca de los refrigerantes R-152A, R-32, R-290, R-600, R-600a, R-1234yf y R-1234ze:
La bobina de 13,5 mm (IP65/67) ha sido validada según las normas ISO 5149 e IEC 60335 (ref. IEC/EN 60079-15). El riesgo de ignición ha sido evaluado según las normas ISO 5149 e IEC 60335 (ref. IEC/EN 60079-15). Asegúrese de que no haya chispas ni arco en la conexión de horquilla durante la aplicación.
Instale siempre un fusible antes de la bobina; corriente nominal: dos veces la corriente nominal; intervalo de tiempo: medio, para evitar cortocircuitos.
La bobina se debe utilizar en una zona con una contaminación máxima de nivel 2.
Siga la guía de instalación para montar la bobina correctamente y aplique una junta tórica para sellarla y evitar la penetración de humedad en la bobina.

Nota de seguridad:
La bobina de 13,5 mm (IP65/67) puede aplicarse en sistemas con refrigerantes R-152A, R-32, R-290, R-600, R-600a, R-1234yf y R-1234ze como fluido de trabajo.
En el caso de los países donde las normas de seguridad no sean parte indispensable del sistema de seguridad, Danfoss recomienda que el instalador obtenga una aprobación externa para todo sistema que contenga refrigerante inflamable.
Siga los criterios de selección específicos indicados en el folleto técnico para estos refrigerantes concretos.
Tenga en cuenta que la bobina de 13,5 mm (IP65/67) NO dispone de homologación ATEX, IECEx ni la serie IEC 60079 de la zona 2. El producto solo ha sido validado para sistemas que cumplan con las normas ISO5149, IEC 60335 (ref. IEC/EN 60079-15). La verificación de este cumplimiento es responsabilidad del usuario. Su uso indebido puede provocar explosiones, incendios y fugas que comporten riesgo de muerte, lesiones personales o daños materiales.

SIGHT GLASS series SYJ

Applicable to fluids and refrigerants of GROUP 2 according to Directive 2014/68/EU (15 May 2014) or GROUP A1 according to ANSI-ASHRAE 34-2010.

EAC

Temperature allowed range: -50°C to +80°C (-58°F to +176°F)
Design Pressure (PS): 46 bar (667 psi)

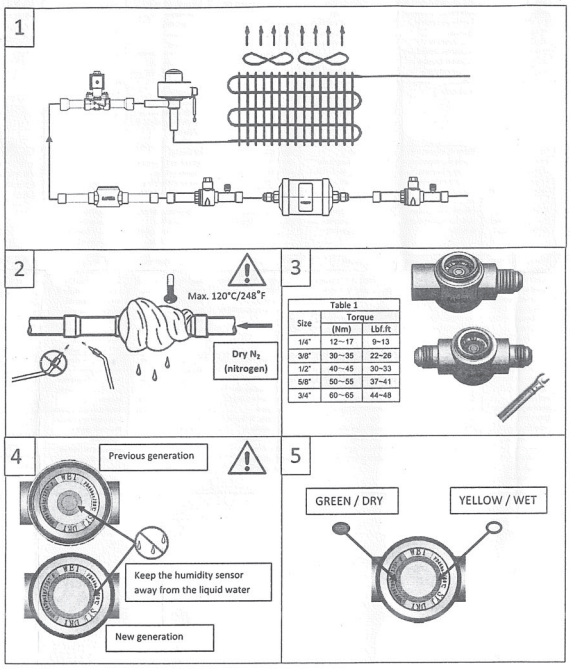


Table 1

Size	Torque (Nm)	Torque Lbf.ft
1/4"	12~17	9~13
3/8"	30~35	22~26
1/2"	40~45	30~33
5/8"	50~55	37~41
3/4"	60~65	44~48

ACTION	English	Français	Deutsch	Italiano	Español	Русский	Chinese
1	Sight glass must be installed in the liquid line before the expansion valve	Le voyant liquide doit être installé sur la ligne liquide avant le détendeur	Das Schauglas muss in der Flüssigkeitsleitung vor dem thermostatischen Expansionsventil montiert werden	La spia di liquido deve essere installata nella linea del liquido prima della valvola Termostatica	El visor de líquido debe instalarse en la línea de líquido antes de la válvula termostática	Смотровое стекло должно устанавливаться на линии жидкости перед ТРВ	请在膨胀阀前液体管路中安装视液镜。
2	Braze the sight glass using specific alloy (SilFos 15). Use a wet rag on sight glass during the brazing process. In order to avoid formation of oxidation products during soldering an inert gas (nitrogen N_2 or another inert gas) has to be blown throw the place of soldering	Braser les tubes de connections en utilisant un alliage spécifique (type SilFos 15). Placer un chiffon mouillé sur le voyant liquide pendant le brasage. Pour éviter la formation d'oxydation durant la brasure de l'azote doit être diffuser sur l'endroit de la brasure	Einlöten des Schauglases unter Verwendung spezieller Lötlegierung (SilFos 15). Während des Lötvorgangs das Schauglas mit nassem Lappen umwickeln. Um Zunderbildung während des Schweißens zu verhindern ist ein Durchströmen mit Schutzgas (z. B. Stickstoff N_2 oder ein anderes Inertgas) zu realisieren	Brasare la spia del liquido usando una lega specifica (SilFos 15). Usare uno straccio bagnato sulla spia del liquido durante il processo di brasatura. Per evitare l'ossidazione del materiale durante la brasatura utilizzare un gas inerte (azoto o similare)	Soldar el visor usando una aleación específica (SilFos 15). Poner un paño húmedo sobre el visor durante el proceso de soldadura. Para evitar formación de óxido en el proceso de soldadura, utilizar un gas inerte (Nitrógeno N2 u otro) soplando a través de la tubería donde se produce la soldadura	При пайке стекла пользуйтесь припоем (SilFos 15). Защитите стекло от перегрева мокрой ветошью. Для избежания образования продуктов окисления (окалины) во время пайки место пайки нужно продувать инертным газом (азотом N_2 или другим)	焊接用的焊料推荐使用 SilFos 15 合金. 焊接过程前请玩玩采用湿布保护, 另外保护气应从本焊接通入, 以防止高温气体烧伤视液镜内部元件.
3	Tighten the thread connection respecting the maximum torque values in the table 1. ATTENTION: use the two wrenches to fix both sides	Serrer la connections vissée en respectant le couple maximum recommandé sur la table 1. ATTENTION : utiliser 2 clés pour le serrage comme montré sur le schéma	Die Bördel-verschraubung unter Beachtung der in Tab.1 angegebenen Drehmomente anziehen. ACHTUNG : Zwei Schlüssel benutzen wie im Bild dargestellt	Serrare la connessione filettata rispettando i valori i valori massimi di coppia riportati nella tabella 1. ATTENZIONE: usare le due chiavi come mostrato in figura	Ajustar las conexiones roscadas respetando los valores máximos como se indican en la Tabla 1. ATENCION: usar dos llaves para fijar ambas partes, como se muestra en la figura	Затяните резьбовое соединение не превышая допустимого усилия затяжки (Табл.1). ВНИМАНИЕ: используйте два гаечных ключа для фиксации обеих концов	注意：请使用两个扳手扳手行紧螺纹接口，最大扭矩值参考表 1
4	During installation process penetration of liquid water into sensitive cavity of sight glass has to be avoided. It may cause failure of humidity sensor	Pendant le processus d'installation, la pénétration d'eau dans le voyant doit être évité pour ne pas provoquer la défaillance de sensibilité du capteur d'humidité	Während der Installation, jeden Kontakt des Schauglas-inneren mit Wasser vermeidenl Dies schädigt den Feuchte-indikator und führt zu falschen anzeigen	Durante la fase di installazione evitare il contatto dell'elemento sensibile con l'acqua. Può danneggiare l'indicatorle di umidità	Durante el proceso de instalación, El agua líquida no debe entra en la cavidad del visor, ya que puede causar el fallo permanente del sensor de humedad	В процессе установки не допускается попадание воды в жидкой фазе на влагочуствительный элемент стекла. Это может вызвать отказ датчика влажности	在视液镜的安装过程中，请注意防止液态水进入视镜中，以免湿度指示纸与液态水接触，导致湿度指示纸失效。
5	Check The color of humidity sensor placed inside the sight glass on its internal perimeter: if it is green the humidity level is acceptable. If it is yellow the humidity level is too high: filter dryer must be replaced	Vérifier la couleur de l'indicateur d'humidité au centre du voyant : S'il est vert, le degré d'humidité est acceptable. S'il est jaune, le degré d'humidité est trop haut, le filtre déshydrateur doit être remplacé	Die Färbung des Feuchtigkeitsindikators im Schauglas prüfen : Ist er grün, so ist der Feuchtegehalt akzeptabel. Ist er gelb, so ist der Feuchtegehalt zu hoch . Dann ist der Filtertrockner auszutauschen	Controllare il colore del sensore di umidità posto al centro della spia del liquido: se appare verde il livello di umidità è accettabile. Se appare giallo il livello di umidità è troppo elevato: il filtro deidratatore deve essere sostituito	Comprobar el color del indicador de humedad colocado en el centro del visor: si es verde, el nivel de humedad es aceptable. Si es amarillo el nivel de humedad es demasiado elevado: el filtro secador debe cambiarse	Проверьте цвет индикатора влажности внутри смотрового стекла: зеленый цвет означает влажность в пределах нормы. Желтый цвет – высокую влажность: нужна замена фильтра-осушителя	请检查视液镜内部湿度指示纸颜色：如果为绿色则表示系统里的水分含量在正常范围. 如果是黄色则表示系统中的水分含量太高, 过滤器需要更换了

HONGSEN

DFS DRY FILTER

Operating Instructions

Please read this instruction carefully before assembling filter driers, and pay attention to the cautions referred.

5. Installation diagram

Figure 1

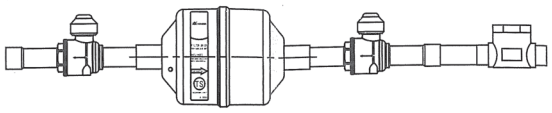
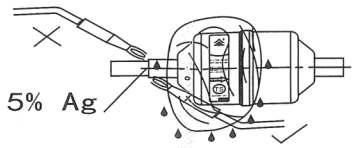


Figure 2



6.Filter drier needs to be efficiently protected during the welding operation, welding temperature and direction need to be controlled, cover the welding area with wet towel in case of wrong welding direction.

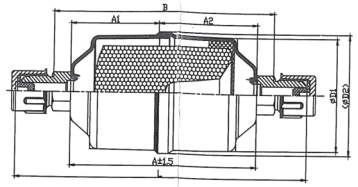
V、Product Model

Model selection table

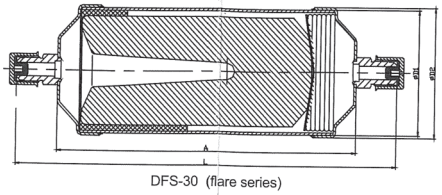
No.	Model No.	A	A1	A2	B	L	D1	D2
1	DFS-032	65	30	35		109.6	43	46
2	DFS-033	65	30	35		118.6	43	46
3	DFS-052	73.5	21.5	52		118	53.6	57.4
4	DFS-053	73.5	21.5	52		127	53.6	57.4
5	DFS-083	98.5	46.7	51.8		151.6	53.5	57.4
6	DFS-084	98.5	46.7	51.8		158.6	53.5	57.4
7	DFS-085	98.5	46.7	51.8		169.6	53.5	57.4
8	DFS-163	105	50	55		159	75	79.1
9	DFS-164	105	50	55		167.6	75	79.1
10	DFS-165	105	50	55		177	75	79.1
11	DFS-303	192				248.5	76	79
12	DFS-304	192				255.8	76	79
13	DFS-305	192				267.2	76	79
14	DFS-306	192				267.8	76	79
15	DFS-032S	65	30	35	81	99	43	46
16	DFS-033S	65	30	35	85	101	43	46
17	DFS-052S	73.5	21.5	52	89.5	107	53.6	57.4
18	DFS-053S	73.5	21.5	52	93	109	53.6	57.4
19	DFS-083S	98.5	46.7	51.8	118	134	53.5	57.4
20	DFS-084S	98.5	46.7	51.8	120	142	53.5	57.4
21	DFS-085S	98.5	46.7	51.8	120	142	53.5	57.4
22	DFS-163S	105	50	55	125.5	141.5	75	79.1
23	DFS-164S	105	50	55	127.5	149.5	75	79.1
24	DFS-165S	105	50	55	128	150	75	79.1
25	DFS-303S	192			215	231	76	79
26	DFS-304S	192			223	245	76	79
27	DFS-305S	192			223	245	76	79
28	DFS-306S	192			216	250	76	79
29	DFS-307S	192			226	256	76	79
30	DFS-309S	192			233	265	76	79

VI、Structure

Figure 3

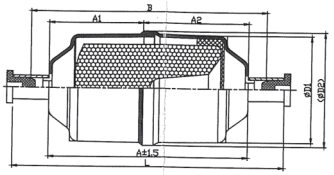


DFS-03/05/08/16 (flare series)

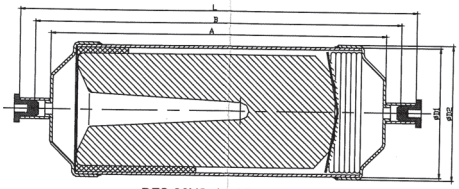


DFS-30 (flare series)

Figure 4



DFS-03XS/05XS/08XS/16XS (welding series)



DFS-30XS (welding series)

I、Function Instruction

1. Filter drier is a welded unit, made up of iron bowl, cylinder, filter net, filter cotton, solid molecular sieve, nozzle(threaded joint), spring.
2. Filter drier is mainly used in refrigeration, A/C unit, household(automotive)A/C.
3. The main parts of filter drier:
① Metal filter net: filter large solid particles (mainly used in small and medium-sized systems such as R22 or mineral oils that are not sensitive to moisture)
② Polyester filter: filter little particles
③ Filter cotton: filter little particles
④ Solid molecular sieve: Filter large solid particles, mainly to absorb the moisture, which is 3~4 time that of other substance, and can also absorb acidic substances.
⑤ Active aluminum: absorb moisture, mainly for acidic substance.
4. Filter performance
① Filter capacity: Filters harmful substances in the system to protect important components such as expansion valves and compressors
② Refrigerant flow rate: Large the pressure drop affects the system capacity, the smaller the pressure drop, the better system performance.
5.Installation method: ODS interface brazing and SAE US standard thread

II、Features

1.XH-9 solid molecular sieve support with strong drying ability
2.100 mesh filter net realizes efficient filtration with smallest pressure drop.
3.Corrosion-resistant powder-coated surface works for various environments
4.Standard screw and weld connection, can also be customized.

III、Working conditions

1.The nominal pressure of the dry filter is 30 bar (3.0 MPa) to 42 bar (4.2 MPa)
2.Applicable medium temperature is -40 °C ~ +120 °C. It is necessary to consider that the pressure is affected by temperature
3.This product is not for CO2 system
4.Dry filter is suitable for HCFC/HFC refrigerant

IV、Installation and precautions

1.The dry filter is usually located behind the accumulator on liquid pipe line, but in front of the sight glass, shut-off valve, and thermal expansion valve; there are two locations in suction pipe line:
① Between the gas-liquid separator and the compressor
② Between the four-way valve and the gas-liquid separator
2.Better to locate the filter drier between the four-way valve and the gas-liquid separator
① When impurities enter the suction pipe, it may block the oil return filter of the gas-liquid separator. While it can be avoided if a filter is assembled ahead.
② The gas-liquid separator is required to be installed as close as possible to the compressor
3.Due to the bidirectional request in liquid line of heat pump system, special installation is applied, here are some usual designs:
① Installation only on refrigeration cycle.
② Join the receiver, filter drier, expansion valve with 4 check valves in public line, so that either cold mode or heat mode can be applied.
③ Install one check valve and filter drier on both heat cycle and cold cycle.
④ Apply bidirectional filter drier
4.In addition to the dry filtration of the normal refrigeration system, the other important function of filter drier is to clean system after burning of compressor.

DUAL PRESSURE CONTROLS

Type DNS

SAGINOMIYA

GENERAL DESCRIPTION

- For use with fluorinated refrigerants as well as with air and water. (Allowable Fluid Temp.: −20 to 120°C)
- Various contact functions are available.
- Available drip proof enclosure for marine application or explosion proof enclosure for special application.
- Mounting bracket is supplied as standard.
- IP44 with upper lid (option).
- Ammonia models: Available upon request.

CE mark applicable (available upon request)

UL recognized (available upon request)

TYPE NUMBER SELECTION (SPECIFICATIONS)

Automatic Reset Type

Unit: MPa {kgf/cm²}

Catalog No.	Pressure Side	Range		Differential		Factory Setting		Max. Working Pressure	Contact Function	Wt. (kg)
		Min.	Max.	Min.	Max.	Off	On			
DNS–D304X	Low Side	−0.06 {−50cmHg}	0.4 {4}	0.04 {0.4}	0.2 {2}	0.1 {1}	0.2 {2}	1.5 {15}	Diagram 1	0.49
	High Side	0.8 {8}	3 {30}	Approx. 0.4 fixed {Approx. 4 fixed}		2 {20}	1.6 {16}	3.3 {33}		
DNS–D306X	Low Side	−0.06 {−50cmHg}	0.6 {6}	0.06 {0.6}	0.4 {4}	0.2 {2}	0.3 {3}	1.5 {15}		
	High Side	0.8 {8}	3 {30}	Approx. 0.4 fixed {Approx. 4 fixed}		2 {20}	1.6 {16}	3.3 {33}		
DNS–D604X	Low Side	−0.06 {−50cmHg}	0.4 {4}	0.04 {0.4}	0.2 {2}	0.1 {1}	0.2 {2}	1.5 {15}	Diagram 3	
	High Side	0.8 {8}	3 {30}	Approx. 0.4 fixed {Approx. 4 fixed}		2 {20}	1.6 {16}	3.3 {33}		
DNS–D606X	Low Side	−0.06 {−50cmHg}	0.6 {6}	0.06 {0.6}	0.4 {4}	0.2 {2}	0.3 {3}	1.5 {15}		
	High Side	0.8 {8}	3 {30}	Approx. 0.4 fixed {Approx. 4 fixed}		2 {20}	1.6 {16}	3.3 {33}		

Manual Reset Type

Unit: MPa {kgf/cm²}

Catalog No.	Pressure Side	Range		Differential		Factory Setting		Max. Working Pressure	Contact Function	Wt. (kg)
		Min.	Max.	Min.	Max.	Off	On			
DNS–D304XM	Low Side	−0.06 {−50cmHg}	0.4 {4}	0.04 {0.4}	0.2 {2}	0.1 {1}	0.2 {2}	1.5 {15}	Diagram 2	0.49
	High Side	0.8 {8}	3 {30}	Automatic operation on pressure rise, and manual reset.		2 {20}	manual reset	3.3 {33}		
DNS–D306XM	Low Side	−0.06 {−50cmHg}	0.6 {6}	0.06 {0.6}	0.4 {4}	0.2 {2}	0.3 {3}	1.5 {15}		
	High Side	0.8 {8}	3 {30}	Automatic operation on pressure rise, and manual reset.		2 {20}	manual reset	3.3 {33}		
DNS–D604XM	Low Side	−0.06 {−50cmHg}	0.4 {4}	0.04 {0.4}	0.2 {2}	0.1 {1}	0.2 {2}	1.5 {15}	Diagram 4	
	High Side	0.8 {8}	3 {30}	Automatic operation on pressure rise, and manual reset.		2 {20}	manual reset	3.3 {33}		
DNS–D606XM	Low Side	−0.06 {−50cmHg}	0.6 {6}	0.06 {0.6}	0.4 {4}	0.2 {2}	0.3 {3}	1.5 {15}		
	High Side	0.8 {8}	3 {30}	Automatic operation on pressure rise, and manual reset.		2 {20}	manual reset	3.3 {33}		
DNS–D606XMM	Low Side	−0.06 {−50cmHg}	0.6 {6}	Automatic operation on pressure decrease, and manual reset.		0.2 {2}		1.5 {15}	Diagram 5	
	High Side	0.8 {8}	3 {30}	Automatic operation on pressure rise, and manual reset.		2 {20}		3.3 {33}		

・Enclosure: IP20

・Drip Proof Models: Available upon request. (Refer to Pages 48, 49.)

ELECTRICAL RATINGS

Rated Amps. (A) \ Rated Voltage (V)		Power Factor ($\cos\phi$)	125/250V. AC
Non-Inductive Current		1	12
Inductive Current	Full Load	0.75	
	Locked Rotor	0.45	72

CONTACT FUNCTIONS

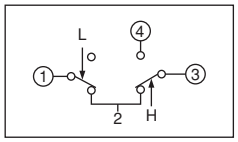


Diagram 1

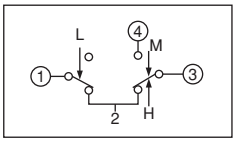


Diagram 2

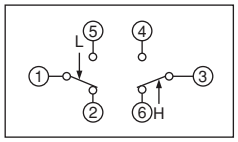


Diagram 3

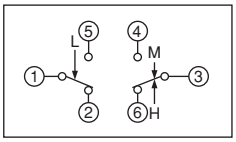


Diagram 4

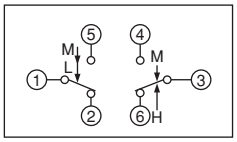
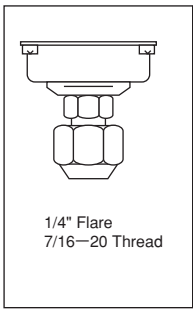


Diagram 5

↓ L: Operating direction on press. increase at Low Press. Side
↑ H: Operating direction on press. increase at High Press. Side
↓ M: Operating direction on manual reset

PRESSURE CONNECTIONS

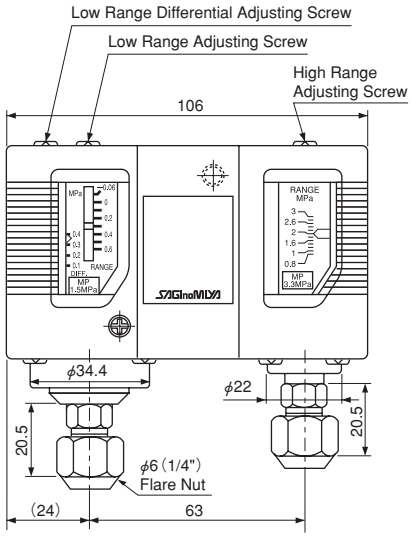


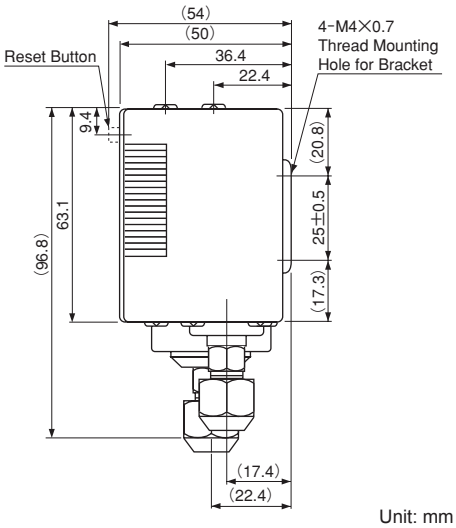
Standard

Refer to Pages 45, 46

DIMENSIONS

Standard Model





Unit: mm

ENGINEERING TOMORROW

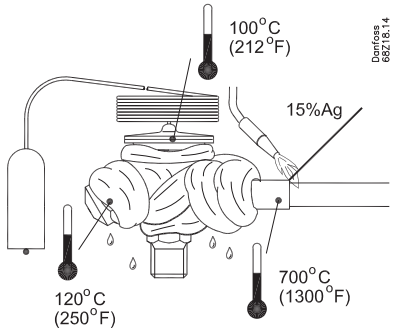
Installation guide

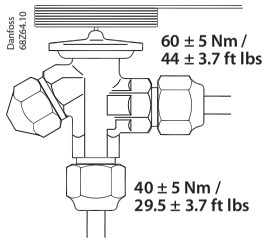
Thermostatic expansion valve

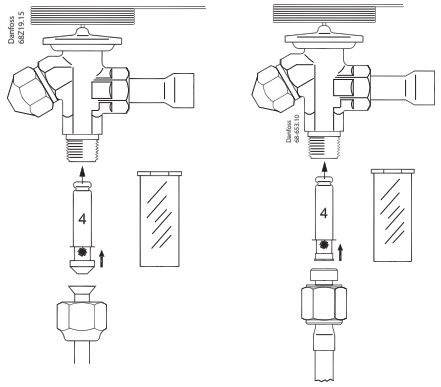
Type T 2 / TE 2

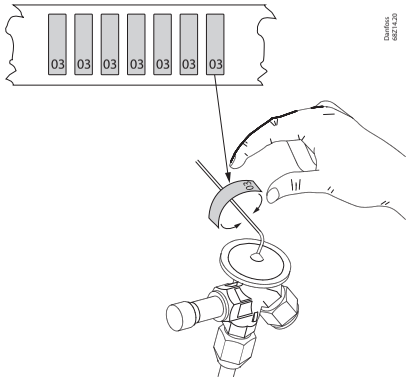
068R9536

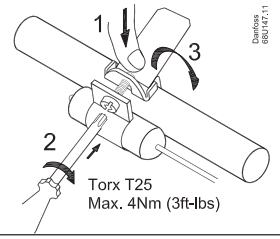
Refrigerant:	Max. working pressure:	Max. test pressure
See product label	PS / MWP: 34 bar / 500 psig	P_{test} = 37.5 bar / 544 psig

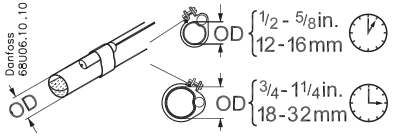


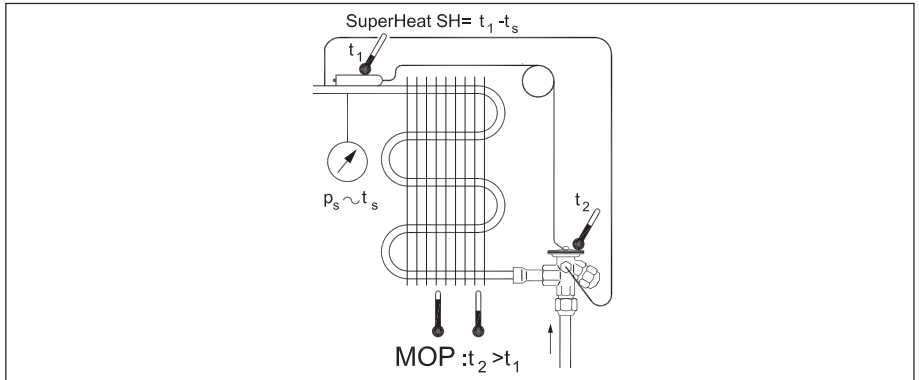


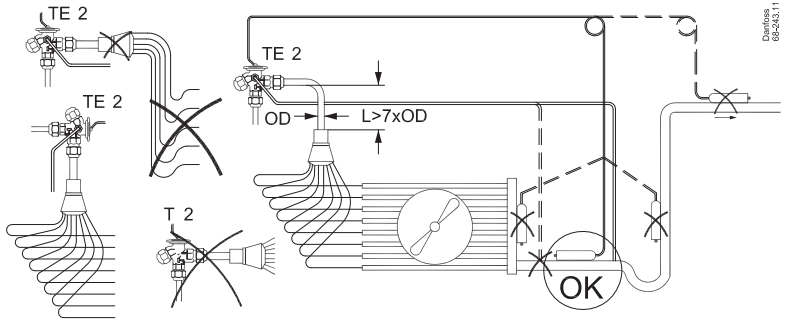






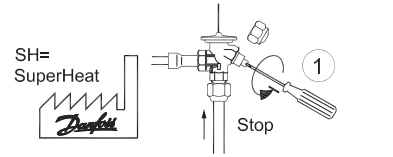




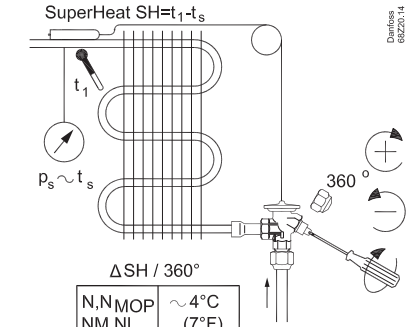


SH= SuperHeat =

N,B	N_{MOP}, B_{MOP} NM,NL
4°C (7°F)	4°C (7°F)



N,B	N_{MOP}, B_{MOP} NM,NL
~ 2-3 x 360°	~ 1,5 - 2 x 360°



N,N_{MOP} NM,NL	~ 4°C (7°F)
B,B_{MOP}	~ 8°C (14°F)

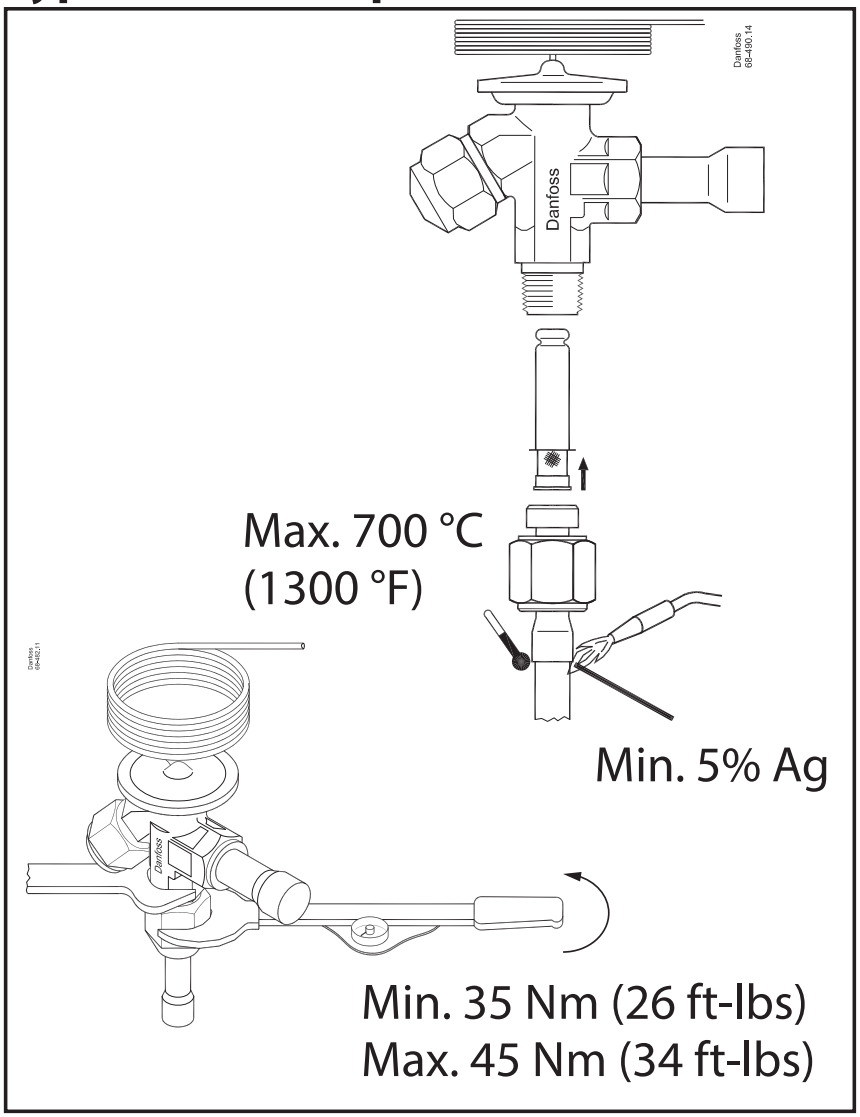
Temperature ranges:

N = -40 – 10 °C / -40 – 60 °F
NM = -40 – -5 °C / -40 – 25 °F
NL = -40 – -15 °C / -40 – 5 °F
B = -60 – -25 °C / -75 – -15 °F

Installation Guide

Accessory for T2 / TE 2
Type Solder adaptor

068R9519



068R9519

DKRCC.PI.AA0.D1.00 / 520H8198

ENGINEERING TOMORROW

Installation Guide

Check valve

Type NRV and NRVH

089 0879

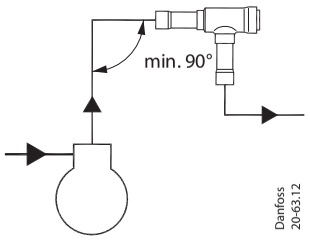
020R9506

Refrigerants:
For a complete list of approved refrigerants, visit http://store.danfoss.com/ and search for individual code numbers, where refrigerants are listed as part of product details.
Note: Flare/face seal connections are only approved for A1 and A2L refrigerants.

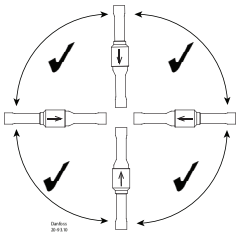
Applicable to A1, A2, A2L and A3 refrigerants as accepted by Danfoss, excluding R717 and to non-corrosive gases/liquids dependent on sealing material compatibility. The design pressure shall not be less than the value outlined in section 9.2 of ANSI/ ASHRAE 15 for the refrigerant used in the system.

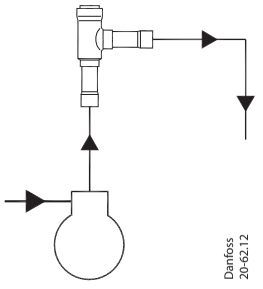
Valve type	Connection type	Media temperature range	Max. working pressure (PS/MWP)
NRV/NRVH 6s-19s	Straight-way - solder	-50 °C - 155 °C / -58 °F - 311 °F	49 bar/ 710 psig
NRV 6-19	Straight-way - flare	-50 °C -140 °C / -58 °F - 285 °F	46 bar/ 667 psig
NRV/NRVH 22s-35s	Angle-way - solder	-50 °C -140 °C / -58 °F - 285 °F	46 bar/ 667 psig
NRV/NRVH 22s E-35s E	Angle-way - solder	-50 °C -155 °C / -58 °F - 311 °F	49 bar/ 710 psig
NRV 10s H (CO2)	Straight-way - solder	-50 °C -140 °C / -58 °F - 285 °F	90 bar / 1305 psig

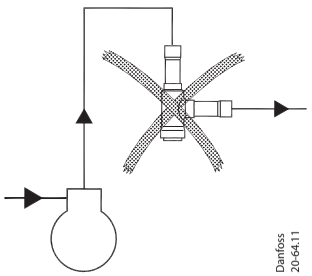
Position angleway

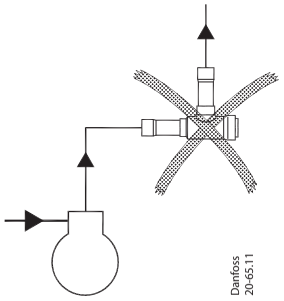


Position straightway





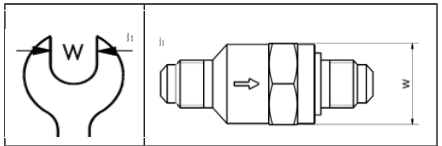




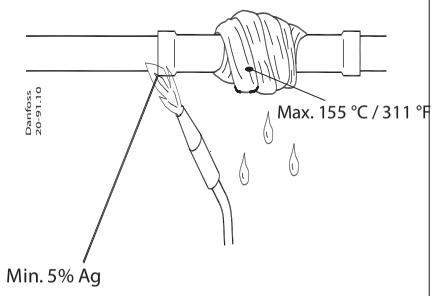
020R9506

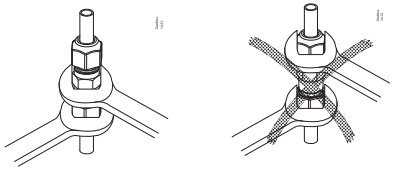
Імпортер:ТОВ з ii "Данфосс ТОВ" 04080, Київ 80, п/с 168, Україна

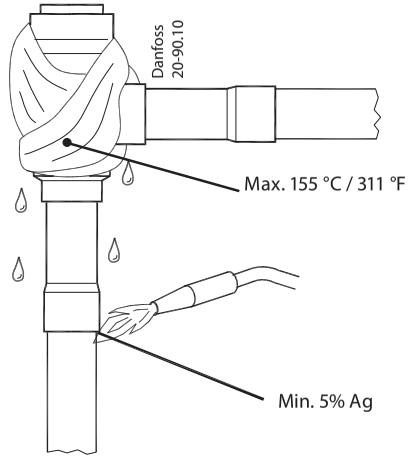
Info for UK customers only: Danfoss Ltd., 22 Wycombe End, HP9 1NB, GB



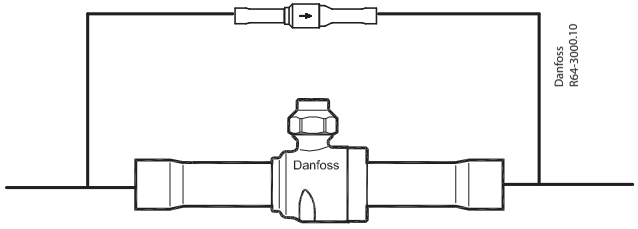
Type	W	
	mm	in.
NRV flare 6	19	3/4
NRV flare 10	19	3/4
NRV flare 12	24	15/16
NRV flare 16	28	1 1/8
NRV flare 19	34	1 3/8





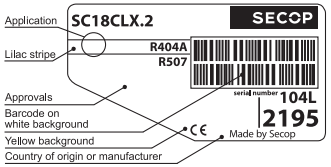


Max. torque		
Size	Nm	ft-lbs
1/4 in.	20	15
3/8 in.	30	22
1/2 in.	60	44
5/8 in.	100	74
3/4 in.	200	148



For NRV CO2 valve(90bar), when the NRV is used together with GBC in parallel as a pressure relief valve, it is recommended to install the NRV above the GBC.
For the application use with R744 as part of a secondary loop or cascade system should refer to the datasheet for more attentions.

SC18CLX.2
LBP Compressor
R404A/R507
208-230V 60Hz



Approval mark

General

Code number	104L2195
Approvals	UL984
Compressors on pallet	80

Application

Application		LBP	
Frequency	Hz	50	60
Evaporating temperature	°C	–	-45 to -10
Voltage range	V	–	187 - 254
Max. condensing temperature continuous (short)	°C	–	55 (60)
Max. winding temperature continuous (short)	°C	–	125 (135)

Cooling requirements

Frequency	Hz	50			60		
Application		LBP	MBP	HBP	LBP	MBP	HBP
32°C		–	–	–	F_2	–	–
38°C		–	–	–	F_2	–	–
43°C		–	–	–	F_2	–	–
Remarks on application:							

S = Static cooling normally sufficient
O = Oil cooling
F_1 = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
F_2 = Fan cooling 3.0 m/s necessary
SG = Suction gas cooling normally sufficent
– = not applicable in this area

Motor

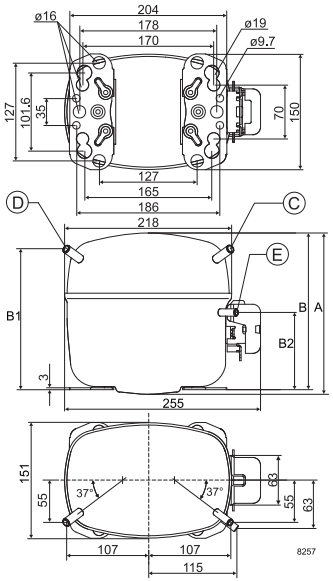
Motor type		CSR	
LRA (rated after 4 sec. UL984), HST | LST	A	27.3	–
Cut in Current, HST | LST	A	27.3	–
Resistance, main | start winding (25°C)	Ω	2.6	9.5

Design

Displacement	cm^3	17.68
Oil quantity (type)	cm^3	600 (polyolester)
Maximum refrigerant charge	g	1300
Free gas volume in compressor	cm^3	1460
Weight without electrical equipment	kg	13.9

Dimensions

Height	mm	A	219
		B	213
		B1	193
		B2	110
Suction connector	location/I.D. mm | angle	C	9.7 | 37°
	material | comment		Copper | Rubber plug
Process connector	location/I.D. mm | angle	D	6.5 | 37°
	material | comment		Copper | Rubber plug
Discharge connector	location/I.D. mm | angle	E	6.5 | 37°
	material | comment		Copper | Rubber plug
Oil cooler connector	location/I.D. mm | angle	F	–
	material | comment		–
Connector tolerance	I.D. mm		±0.09
Remarks:			



EN 12900 Household (CECOMAF)* 230V, 60Hz, fan cooling F_2

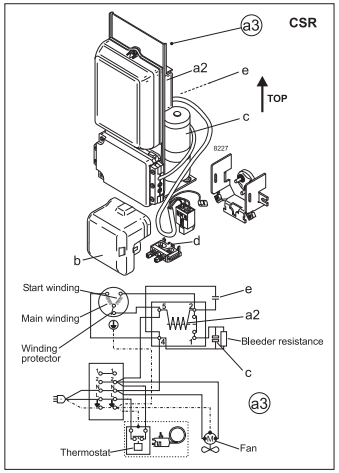
Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	20
Capacity in W	113	338	542	737	938	1010	1157	1410	1708								
Power cons. in W	312	447	563	663	752	780	833	911	990								
Current cons. in A	2.20	2.56	2.92	3.28	3.63	3.75	3.98	4.33	4.67								
COP in W/W	0.36	0.76	0.96	1.11	1.25	1.29	1.39	1.55	1.73								

ASHRAE LBP 230V, 60Hz, fan cooling F_2

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	20
Capacity in W		225	520	782	1029	1113	1280	1553	1867								
Power cons. in W		398	537	658	765	799	861	951	1038								
Current cons. in A		2.45	2.86	3.27	3.68	3.82	4.09	4.49	4.89								
COP in W/W		0.56	0.97	1.19	1.34	1.39	1.48	1.63	1.80								

ASHRAE LBP* 230V, 60Hz, fan cooling F_2

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	20
Capacity in W	167	416	644	866	1097	1181	1355	1653	2008								
Power cons. in W	325	455	567	663	749	776	828	904	981								
Current cons. in A	2.23	2.58	2.93	3.28	3.62	3.73	3.96	4.29	4.63								
COP in W/W	0.51	0.91	1.14	1.31	1.47	1.52	1.64	1.83	2.05								



Accessories for SC18CLX.2 (60 Hz)		Figure	Code number
Sarting device	585 mm cable length	a3	117-7066
Cover		b	103N2008
Starting relay	6.3 mm spade connectors	a2	Components of starting device
Start. capacitor 80 µF	6.3 mm spade connectors	c	
Run capacitor 10 µF	6.3 mm spade connectors	e	
Cord relief		d	103N1004

Test conditions	EN 12900/ CECOMAF*	ASHRAE LBP	ASHRAE LBP*
Condensing temperature	45°C	54.4°C	43.3°C
Ambient temperature	32°C	32°C	32°C
Suction gas temperature	32°C	32°C	32°C
Liquid temperature	no subcooling	32°C	32°C

Mounting accessories		Code number
Bolt joint for one comp.	Ø: 16 mm	118-1917
Bolt joint in quantities	Ø: 16 mm	118-1918
Snap-on in quantities	Ø: 16 mm	118-1919

ENGINEERING TOMORROW

Quick Start Guide
ERC 213

Overview

The ERC 213 is designed to be an easy, universal replacement control. We encourage users to employ one of five predefined applications that meet the needs of most systems. If users need to modify specific parameters, it should be done after installing the predefined application that most closely meets system needs.

For more information, including detailed instructions, error codes, parameters, and more, visit www.danfoss.com/erc or download the Koolcode app from iTunes or Google Play.

For a video guide of the quick set-up, visit http://bit.ly/ERC213 or use the QR code located to the right.

Quick Set-up

STEP	Action	Screen Display
STEP 1	**Wire control, to include power and sensors**	
STEP 2	**Power up control**	
	Energize control	Control turns on, goes through start up, then shows the current temperature reading
STEP 3	**Enter Quick Configuration Menu and Select app**	
	Press "<" for more than three seconds within one minute of power up to enter Quick Configuration Menu.	o61 appears on screen
	Press "set" while o61 is on screen	AP0 flashes on screen
	Select appropriate app using App Selection section below by pressing "∧" or "∨", then press "set".	o06 appears on screen
STEP 4	**Select Sensor**	
	Press "set" while o06 is on screen	n10 flashes on screen
	If using included sensor, leave default value "n10". If using another sensor, select using Sensor Resistance section on opposing page or cycle through steps 2 – 4 changing the sensor type until the temperature reading on the main screen is accurate. As above, cycle between options by pressing "∧" or "∨" and press "set" to save.	o06 appears on screen, then control resets
STEP 5	**Set Temperature**	
	From main screen, quickly press "set" (1 second).	Current temp. setting appears on screen
	Cycle to intended temperature by pressing "∧" or "∨" and press "set" to save.	Screen returns to main screen

App Selection

Select application based on application and wiring configuration (i.e., refrigeration vs. freezing, and number of temperature sensors). The Typical Wiring Configurations diagram on the reverse side of this document may be used to assist with selection. All parameters can be modified using the full menu. Some parameters have min and max set points which may need to be changed for less common configurations.

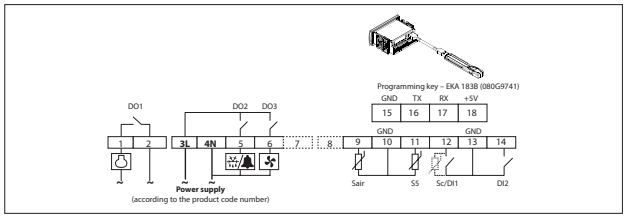
Control Application Code	Application	Defrost Type*	Defrost Termination	Sensors	Default Temp. [°F] [r00]	Temp. Range min./max. [°F] [r02/r03]	Default Dif. [°F] [r01]	Defrost Interval [hrs] [d03]	Max. Defrost Time [mins] [d04]	Defrost Termination Temp. [°F] [d02]
AP0 (Default)	No preset application - full menu			2	36	-31/22	4	6	30	43
AP1	Refrigeration	Natural	Time	1	39	36/43	4	4	30	–
AP2	Refrigeration	Electric	Time	1	36	32/39	4	6	15	–
AP3	Freezing	Electric	Time	1	-11	-15/-4	4	6	15	–
AP4	Refrigeration	Electric	Temp.	2	36	32/39	4	6	30	43
AP5	Freezing	Electric	Temp.	2	-11	-15/-4	4	6	30	43
AP6	No preset application - simplified menu			2	36	-31 – 122	4	6	30	43

* Hot gas defrost is an option available in full menu (d01).

Key Functions and Display Icons

Key Functions			
∧ ⏻ ❄ ∨	Press and hold at power up: FACTORY RESET ("FAC" is displayed)	∧ ⏻	Press for one second: UP Press and hold: ON/OFF
		❄ ∨	Press for one second: DOWN Press and hold: DEFROST
< ❄	Press for one second: BACK Press and hold: PULL-DOWN	⚙ SET	Press for one second: TEMP. SETPOINT/OK Press and hold: MENU
Display Icons			
☾	Night mode (Energy saving)	✣	Fan running
❄	Compressor running (Flashes in pull-down mode)	🔔	Active alarm
❄	Defrost	°C	Unit (°C or °F)

Connection Diagram



- **Sair** Control sensor
- **S5** Defrost (evaporator) sensor
- **SC** Condenser sensor
- **DI1** Digital input – configurable to the functions listed under menu code o02
- **DI2** Digital input – configurable to the functions listed under menu code o37

Sensor Resistance: Using an ohmmeter, you can measure resistance of a sensor to identify sensor type or to troubleshoot a potentially faulty sensor.

Sensor Type	Code	Resistance [ohm] at Temperature [°F]			
		0	20	32	75
PTC	Ptc	690	761	807	980
PTC 1000	Pt1	931	974	1000	1093
NTC 10000 *	n10	70317	40411	29481	10459
NTC 5000	n5	42664	23110	16325	5251

* Included in kit

Common Functions

Adjust Temperature Set Point

From main screen, quickly press "set" (one second). The current temperature setting will appear on screen. Cycle to intended temperature by pressing "∧" or "∨" and press "set" to save. The display will return to the main screen.

Adjust Differential

From main screen, press "set" for more than three seconds. Cycle to "r--" submenu by pressing "∧" or "∨" and press "set." Cycle to "r01" and press "set." Cycle to preferred differential setting, and press "set" to save. "r01" will appear on screen. Press "<" twice to return to main screen.

Manual Defrost

From main screen, press defrost for more than three seconds to initiate defrost. The DEFROST icon is shown during defrost. Press defrost key for at least three seconds to stop manual defrost.

Factory Reset

Press and hold "∧" and "∨" simultaneously at power up.

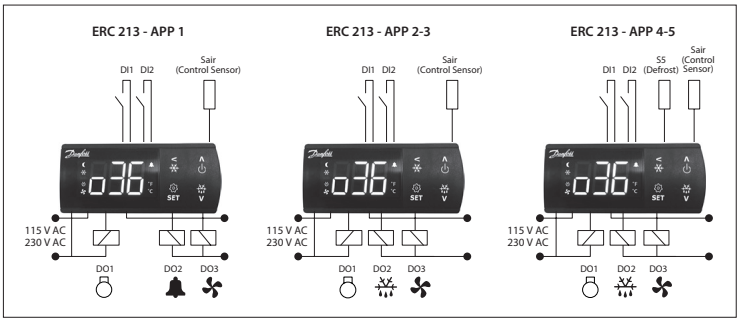
Unlock Keypad

After 5 minutes of no activity, the keypad will lock if P76 = yes (by default it is set to no). When the keypad is locked any key press shows "LoC" in the display. Press "∧" and "∨" simultaneously for three seconds to unlock the keyboard. "unl" is displayed for three seconds.

Technical Specifications

Power Supply	080G3411 115V AC 50/60 HZ; 080G3412 230V AC 50/60 Hz
Inputs	4 total; 2 analog, 1 analog/digital, 1 digital
Sensor Included in Kit	NTC 10000
Output	D01 Compressor Relay
	115 V (080G3268): 16 FLA/72 LRA 230 V (080G3269): 10 FLA/60 LRA
	D02 Defrost Relay and/D03 Fan Relay
	8A, 2 FLA, 12 LRA
Operating Conditions	14 – 131 °F
Storage Conditions	-40 – 158 °F
Approvals	UL Recognized/NSF

Typical Wiring Configurations



Troubleshooting

Power Supply	Code	Description	Remedy (applicable parameter code in parenthesis)
Common Alarm/ Error Codes	**A01**	High temperature alarm	Bring down temperature or increase high limit alarm limit (A13)
	A02	Low temperature alarm	Increase temperature or low temperature alarm limit (A14)
	E27	Defrost sensor error	Verify that defrost sensor is wired into terminals 10 and 11
			Verify that correct sensor type is selected (o06)
	E29	Air temperature sensor error	Verify that control sensor is wired into terminals 9 and 10 – 8 is not used
			Verify that correct sensor type is selected

	Problem	Likely Cause	Remedy (applicable parameter number in parenthesis)
Common Problems/ Resolution	Compressor does not start	Waiting for compressor delay timer	Check compressor minimum off time (CO_2)
		Defrost in progress	Check defrost interval (d03)
			Check defrost on demand (temp. initiated defrost) (d19)
	Defrost does not start	Controller in pull down mode	Check pull-down duration (r96)
	Wrong temperature is displayed	Wrong type of sensor selected	Verify that correct sensor type is selected (o06)
		Sensor installed into incorrect terminals	Verify that control sensor is wired into terminals 9 and 10 – 8 is not used
	Evaporator icing	Defrost interval too long	Reduce defrost interval (d03)
		Defrost time too short	Increase max. defrost time (d04)

Need additional help with programming, parameters, or error codes? Download Danfoss' Koolcode app.

Parameter sheet

Parameter Name	Menu Code	Unit	Min. Value	Max. Value	Default Value	Value
Predefined applications	o61	–	–	–	App0	App0
Sensor type	o06	–	–	–	n10	n10
Temperature Setpoint	r00	°C	-100	200	2	2
Differential	r01	K	0.1	20	2	2.7
Min. set point limit	r02	°C	-100	200	-35	-35
Max. set point limit	r03	°C	-100	200	50	50
Display offset	r04	K	-10	10	0	0
Display Unit	r05	–	–	–	°C	°F
Calibration of Sair	r09	K	-20	20	0	0
Night Set back	r13	K	-50	50	0	0
Offset reference displacement	r40	°C	-50	20	0	0
Pull down duration	r96	min..	0	960	0	0
Pull down temp limit	r97	°C	-100	200	0	0
Alarm delay - Normal conditions	A03	min.	0	240	30	30
Alarm delay - pulldown / startup / def	A12	min.	0	240	60	60
High temp alarm	A13	°C	-100	200	8	8
Low temp alarm	A14	°C	-100	200	-30	-30
DI1 delay	A27	min.	0	240	30	30
DI2 delay	A28	min.	0	240	30	30
Condenser High temp alarm	A37	°C	0	200	80	80
Condenser High block limit	A54	°C	0	200	85	85
Voltage protection	A72	–	–	–	No	No
Min. cut-in voltage	A73	V	0	270	0	0
Min. cut-out voltage	A74	V	0	270	0	0
Max. voltage	A75	V	0	270	270	270
Defrost Method	d01	–	–	–	Electric	Electric
Defrost stop temperature	d02	°C	0	50	6	6.5
Defrost Interval	d03	hour	0	240	8	6
Max. defrost Time	d04	min.	0	480	30	30
Defrost delay at power up	d05	min.	0	240	0	0
Drip delay	d06	min.	0	60	0	0
Fan delay after defrost	d07	min.	0	60	0	0
Fan start temp after defrost	d08	°C	-50	0	-5	-5
Fan ON during defrost	d09	–	–	–	On	On
Defrost stop sensor	d10	–	–	–	None	None
Comp accumulated runtime	d18	hour	0	96	0	0
Defrost on demand	d19	K	0	20	20	20
Defrost delay after pulldown	d30	min.	0	960	0	0
Fan at compressor cutout	F01	–	–	–	FFC	FAo
Fan stop evaporator temp	F04	°C	-50	50	50	50
Fan ON time	F07	min.	0	15	2	2
Fan OFF time	F08	min.	0	15	2	2

Parameter Name	Menu Code	Unit	Min. Value	Max. Value	Default Value	Value
Compressor min. ON time	C01	min.	0	30	0	0
Compressor min. OFF time	C02	min.	0	30	2	2
Comp OFF delay at open door	C04	min.	0	15	0	0
Zero crossing	C70	–	–	–	yes	yes
Delay of outputs at startup	o01	sec	0	600	5	5
DI1 configuration	o02	–	–	–	Off	Off
Serial address	o03	–	0	247	0	0
Password	o05	–	0	999	0	0
Display Resolution	o15	–	–	–	0.1	1
Relay 1 counter	o23	–	–	–	–	0
Relay 2 counter	o24	–	–	–	–	0
Relay 3 counter	o25	–	–	–	–	0
DI2 configuration	o37	–	–	–	Off	Off
Display during defrost	o91	–	–	–	-d-	-d-
DO2 Config	o71	–	–	–	def	def
DI1 polarity	P73	–	–	–	no	no
DI2 polarity	P74	–	–	–	no	no
Invert alarm relay	P75	–	–	–	Normal	Normal
Keyboard lock	P76	–	–	–	No	No
Main switch	r12	–	–	–	Off	On
Controller status	u00	–	–	–	S25	S20
Air temperature (Sair)	u01	°C	–	–	–	321
Present regulation reference	u02		–	–	–	0
Evaporator temperature (S5)	u09	°C	–	–	–	0
DI1 status	u10	–	–	–	Off	Off
Night mode	u13	–	–	–	Off	Off
DI2 status	u37	–	–	–	Off	Off
Condenser temperature (Sc)	U09	–	–	–		0
Compressor relay status	u58	–	–	–	Off	Off
Fan relay status	u59	–	–	–	Off	On
Defrost relay status	u60	–	–	–	Off	Off
Firmware version	u80	–	–	–	–	4.16
Database version	–	–	–	–	–	4.02
Order No Low	–	–	–	–	–	3502
Air temperature sensor(Sair) error	E29	–	–	–	Off	On
Defrost sensor (S5) error	E27	–	–	–	Off	Off
Condensor sensor(Sc) error	E30	–	–	–	Off	Off
High temperature alarm	A01	–	–	–	Off	Off
Low temperature alarm	A02	–	–	–	Off	Off
High voltage alarm	A99	–	–	–	Off	Off
Low voltage alarm	AA1	–	–	–	Off	Off
High condenser temperature alarm	A61	0	–	–	Off	Off
Door alarm	A04	0	–	–	Off	Off
DI external alarm	A15	0	–	–	Off	Off