



OFFICINE MARIO DORIN SINCE 1918

DORIN[®]
INNOVATION



CD PRO+系列

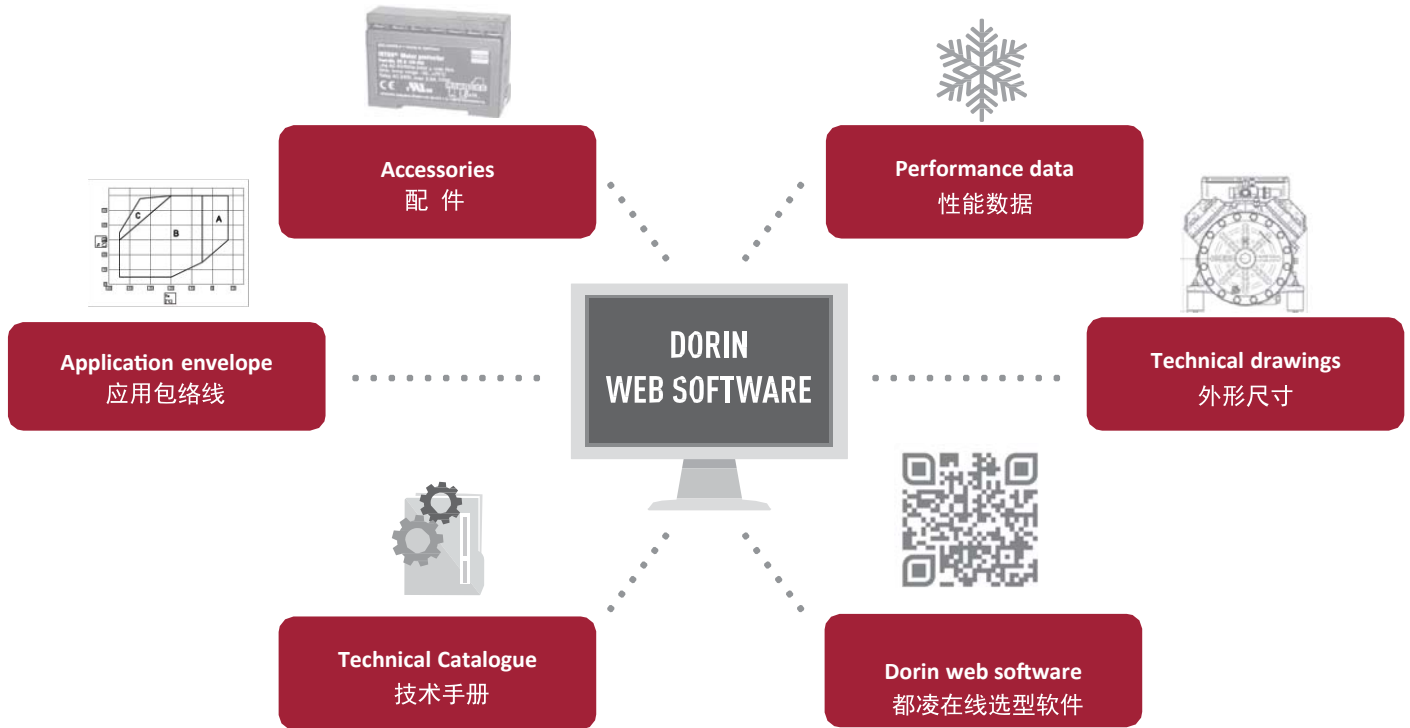
二氧化碳跨临界永磁电机压缩机系列

CD PRO+ SERIES LSPM MOTORS

SEMI-HERMETIC MOTOR COMPRESSORS TRANSCRITICAL

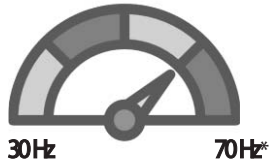


DORIN Web Software



Frequency Range

变频范围



* Maximum operating frequency to be checked in the dedicated technical bulletin

* 最大运行频率须参阅专门的技术手册

Compressor certifications

都凌压缩机认证



Factory certifications

都凌工厂认证

ISO 45001:2018

ISO 9001:2015

Compressor design pressure

压缩机设计压力

100 bar

Standstill pressure
静止压力

150 bar

Max discharge pressure
最大排气压力

CD PRO+ SERIES Features

CD PRO+系列产品特点



安全提示：磁场可能对心脏起搏器佩戴者有害。起搏器佩戴者请保持 30 厘米（12 英寸）以上的距离。



Silent operations and low vibrations

运行安静流畅，振动水平低

Crankshafts balanced individually and excellent fluid dynamics studies are our strengths

曲轴能够独立平衡运转，这得益于我们出色的流体动力学研究



All models VFD compatible

所有型号可变频运行

Bore / Stroke values and generous motor sizings allow wide frequency ranges

电机、缸径、行程的优化配比使之可以实现宽频运行



Highest levels of efficiency

优异的运行效率

Using latest coating technologies for reducing frictions and improving lubrication

采用最新的涂层技术来减少摩擦和改善润滑



Peculiar oil containment system for extra low oil carry-over for models with oil pump

专利认证的油气分离系统，可显著降低带油泵型号的带油率

Higher system efficiency, less oil injections from the oil-separator for higher oil viscosity in the compressor sump

更高的系统效率，油分离器中的润滑油量大幅减少，压缩机中油的粘度得以提高



2 years standard warranty

两年标准质保



All compressors suitable for transcritical CO₂

所有压缩机适用于跨临界CO₂应用



Salt spray resistance test, certified for 1000 hours (NSS test in accordance with UNI EN ISO 4628, parts 2,3,8- Assesment method : UNI EN ISO 9227

盐雾耐受性测试，已通过1000小时认证（根据UNI EN ISO 4628第2、3、8部分的评估方法进行NSS测试）：UNI EN ISO 9227



Compact design and reduced gross weight

轻量化和紧凑地设计

Optimized displacement values for crankcase size

根据曲轴箱大小对应的最优排量

CD PRO+ Series LSPM Motors Technical Features

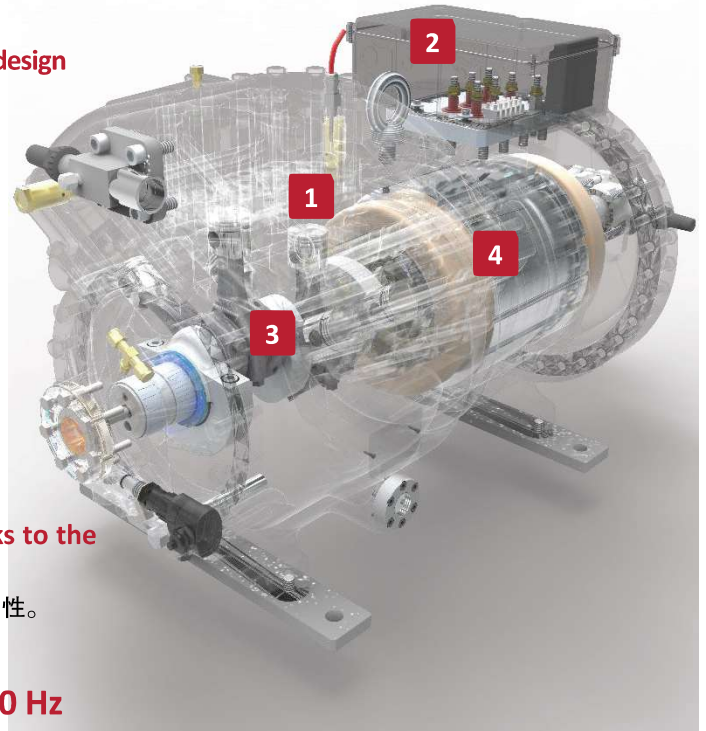
CD系列技术特点

1 Extra reliability and efficiency of optimized valve plate design
 最优化的阀板设计保证了可靠性和效率

2 IP65 junction box
 防护等级IP65的电气接线盒

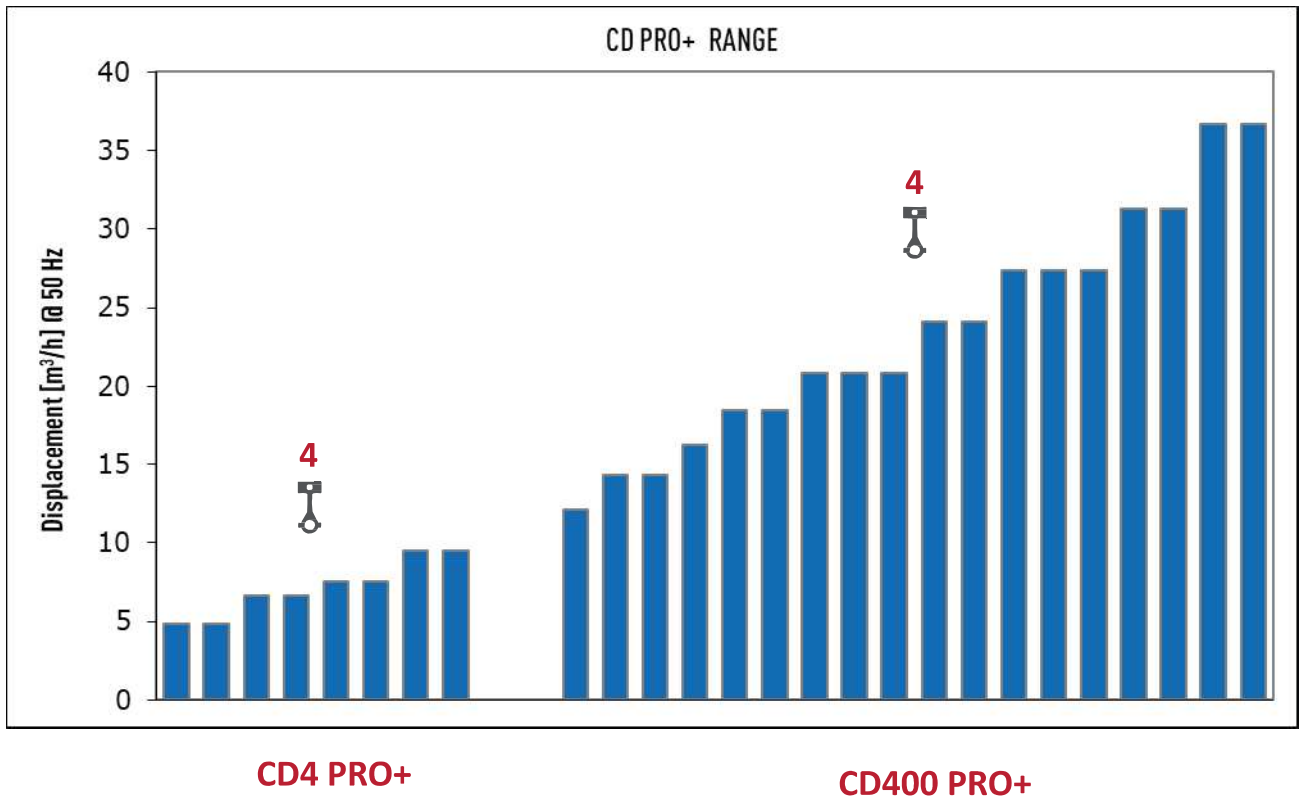
3 Enhanced lubrication secured by automotive design
 汽车工业设计，保证更好地润滑

4 Proven reliability of the LSPM electric motor thanks to the unique resistance to high temperatures
 凭借独特的高温耐受性，永磁电机展现出经证实的卓越可靠性。



CD PRO+ Series LSPM Motors – Displacement 50 Hz

CD PRO+系列-排量50Hz



CD PRO+ COMPRESSOR RANGE
 FROM 4,83 m³/h UP TO 36,70 m³/h @ 50 Hz
 CO₂ SINGLE STAGE TRANSCRITICAL COMPRESSORS
 跨临界CO₂ CD PRO+压缩机系列排量，从4.83m³/h-36.70m³/h@50Hz

Model name for CD4 PRO+ LSPM Motor range

CD4 PRO+ 型号命名

CD	4	120	9.5	PRO+	M
SERIES 系列	NUMBER OF CYLINDERS 缸数	HP (@ 50 Hz)* 100 匹数	DISPLACEMENT VOLUME 排量	LSPM MOTORS 永磁电机	H HIGH-MEDIUM EVAPORATING TEMPERATURE 高中蒸发温度
					M MEDIUM-LOW EVAPORATING TEMPERATURE 中低蒸发温度

Model name for CD400 PRO+ LSPM Motor range

CD	3501	PRO+	H
SERIES 系列	HP (@ 50 Hz)* 100 匹数	LSPM MOTORS 永磁电机	H HIGH-MEDIUM EVAPORATING TEMPERATURE 高中蒸发温度
			M MEDIUM-LOW EVAPORATING TEMPERATURE 中低蒸发温度
			B LOW EVAPORATING TEMPERATURE 低蒸发温度

Applications CD PRO+ SERIES LSPM Motors

CD PRO+系列的应用



Industrial Refrigeration

工业制冷



Railway HVAC

轨道交通



Logistic Warehouse

物流仓储



Heat Pumps

热泵应用



Commercial Refrigeration

商超制冷



Bus A/C

公交空调



Refrigerated Transport

冷链运输



Stationary HVAC

暖通空调




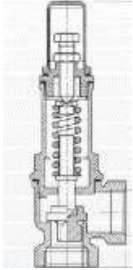
Standard And Optional Accessories

标配件和选配件

	● STANDARD 标配 ○ OPTIONAL 选配	CD4 PRO+	CD400 PRO+
 <p>Motor protection (MT) 电机保护</p> <p>Compressors are equipped with a PTC probe installed on every motor winding combined with electronic protection module (REL)</p> <p>压缩机的每个电机绕组都装有一个PTC探头，与电机保护模块合并。</p>		●	●
 <p>Motor protection electronic module (REL) 电子保护模块</p> <p>Keeping under constant control winding temperature and discharge temperature (BT007)</p> <p>确保电机绕组温度和压缩机排气温度在允许温度内。 (参考技术手册BT007)</p>		●	●
 <p>Crankcase heater (CH) 曲轴箱加热器</p> <p>The heater is 100 W for CD4 PRO+ and 200 W for CD 400 PRO+.</p> <p>CD4 PRO+系列使用100w曲轴箱加热器 CD400 PRO+使用200w曲轴箱加热器</p>		○	○
 <p>Self-regulating crankcase heater (TCH) 自适应曲轴箱加热器</p> <p>Increasing the energy efficiency and reducing the warm-up time. The thermal regulated crankcase heater reduces the output power once the set temperature is reached. Depending on the working conditions there is up to 30% energy saving compared to the standard heater (BT001)</p> <p>与传统加热器相比，自适应曲轴箱加热器可提高能效并减少预热时间。一旦达到设定温度，自适应曲轴箱加热器会降低输出功率。节能情况视不同工况而变，与传统的曲轴箱加热器相比，最多可节省30%的耗能。(参见技术手册BT001)</p>		○	○
 <p>Maximum discharge temperature sensor (TMAX) (TMAX)最大排气温度传感器</p> <p>A thermistor probe is monitoring the discharge temperature to be kept below 160°C (BT007)</p> <p>PTC探头监控压缩机排气温度，确保其保持在160°C以下 (参考技术手册BT007)</p>		—	○
 <p>Oil differential pressure switch (ODPS) 电子油压差开关 (ODPS)</p> <p>Compressors with oil pump are equipped with an oil differetnial pressure switch set to 0,85 bar which must be connected in series with all other compressors protection (BT007)</p> <p>带油泵的压缩机配备了一个油压差开关，设定在0.85bar的压差，油压差开关必须与所有其它保护装置串联连接 (BT007)</p>		—	○ ●

Standard And Optional Accessories

标配和选配件

	● STANDARD 标配 ○ OPTIONAL 选配	CD4 PRO+	CD400 PRO+
 <p>Oil charge 冷冻油充注</p> <p>All compressors are charged in the factory with POE or PAG oil before the mechanical and electrical running tests 标配POE或PAG冷冻油</p>		●	●
 <p>Oil pump forced lubrication (FL) 油泵润滑</p> <p>CD400 PRO+ range: optional for models: CD2000H PRO+/CD2000M PRO+/CD2500M PRO+/CD2400H PRO+/CD2500H PRO+ Standard for other models</p> <p>CD400 PRO+系列以下型号的油泵为选配件: CD2000H PRO+/CD2000M PRO+ /CD2500M PRO+/CD2400H PRO+/CD2500H PRO+, CD400 PRO+系列其它型号油泵标配。</p>		—	○ ●
 <p>Motor protection electronic module(REL I2) + Current transformer (INT 185 CT) 电机保护电子模块 (REL I2) + 电流互感器(INT 185 CT)</p> <p>The PTC protectors integrated in the stator may not be fast enough in the event of a rapid rapid increase in temper ature such as in the case of prolonged oper ation with locked rotor. Faster reacting devices are recommended to avoid damaging the magnets. INT6912 Diagnose allows motor protection by measuring the current performed by INT185. INT 185 allows measurement of maximum current up to 100A The INT69 12 Diagnose motor protection switch, connected to the INT185 current transformer allows monitoring of the current and therefore rapid reaction to its variation outside the permissible values.</p> <p>定子中集成的 PTC 保护器在温度急剧升高时（例如转子堵转长时间运行的情况），反应速度可能不够快。为避免损坏磁体，建议使用反应更快的保护装置。INT69 12 Diagnose 可通过 INT185 进行电流测量来实现电机保护。INT 185 允许测量高达 100 A 的最大电流。连接到 INT185 电流互感器的 INT69 12 Diagnose 电机保护开关，能够监测电流，从而在电流变化超出允许值时迅速做出反应。</p>		○	○
 <p>LP and HP valve (LPSV-HPSV) 高压和低压安全阀</p>		●	●

CD PRO+ SERIES LSPM MOTORS

Oil Charge / Service Valves / Net Weight

油量/阀门/净重

RANGE 系列	MODEL 型号	CYLINDERS 缸数	OIL CHARGE 油量	SUCTION 吸气阀		DISCHARGE 排气阀		NET WEIGHT 净重
		[-]	[LITERS]	Socket welding	Butt welding	Socket welding	Butt welding	[kg]
				[mm]	[mm]	[mm]	(mm)	
CD4 PRO+	CD4 55-4.8M PRO+	4	1,7	22	28	18	24	117
	CD4 75-4.8H PRO+	4	1,7	22	28	18	24	117
	CD4 75-6.6M PRO+	4	1,7	22	28	18	24	117
	CD4 90-6.6H PRO+	4	1,7	22	28	18	24	117
	CD4 75-7.5M PRO+	4	1,7	22	28	18	24	120
	CD4 90-7.5H PRO+	4	1,7	22	28	18	24	120
	CD4 90-9.5M PRO+	4	1,7	22	28	18	24	121
	CD4 120-9.5H PRO+	4	1,7	22	28	18	24	121
CD400 PRO+	CD2000H PRO+	4	2,5	22	28	22	28	164
	CD2000M PRO+	4	2,5	22	28	22	28	164
	CD2400H PRO+	4	2,5	22	28	22	28	168
	CD2500H PRO+	4	2,5	22	28	22	28	168
	CD2500M PRO+	4	2,5	22	28	22	28	172
	CD3000H PRO+	4	2,5	22	28	22	28	178
	CD2001B PRO+	4	2,5	22	28	22	28	168
	CD3001M PRO+	4	2,5	22	28	22	28	178
	CD3401H PRO+	4	2,5	22	28	22	28	187
	CD2501B PRO+	4	2,5	22	28	22	28	172
	CD3501H PRO+	4	2,5	22	28	22	28	187
	CD3001B PRO+	4	2,5	22	28	22	28	178
	CD3501M PRO+	4	2,5	22	28	22	28	187
	CD4501H PRO+	4	2,5	22	28	22	28	199
	CD3501B PRO+	4	2,5	28	35	22	28	199
	CD5001M PRO+	4	2,5	28	35	22	28	202
CD4001B PRO+	4	2,5	28	35	22	28	199	
CD5201M PRO+	4	2,5	28	35	22	28	202	

Electric Motor FLA (Full Load Ampere)

最大工作电流 (满载电流)

RANGE 系列	MODEL 型号	DISPLACEMENT 排量		MAX OPERATING CURRENT 最大工作电流 V / ph / Hz [A]		MAX ABSORBED POWER 最大输入功率	
		50 Hz	60 Hz	220-240/3/50 265-290/3/60 D	380-420/3/50 440-480/3/60 Y	50 Hz	60 Hz
		[m3/h]	[m3/h]			[kW]	[kW]
CD4 PRO+	CD4 55-4.8M PRO+	4,83	5,80	21,5	12,4	7,9	9,5
	CD4 75-4.8H PRO+	4,83	5,80	31,7	18,3	11,7	14,0
	CD4 75-6.6M PRO+	6,62	7,94	31,7	18,3	11,7	14,0
	CD4 90-6.6H PRO+	6,62	7,94	38,6	22,3	14,2	17,0
	CD4 75-7.5M PRO+	7,53	9,04	31,7	18,3	11,7	14,0
	CD4 90-7.5H PRO+	7,53	9,04	38,6	22,3	14,2	17,0
	CD4 90-9.5M PRO+	9,53	11,44	38,6	22,3	14,2	17,0
CD4 120-9.5H PRO+	9,53	11,44	39,1	22,6	14,4	17,3	
CD400 PRO+	CD2000H PRO+	12,09	14,51		35,0	21,8	26,2
	CD2000M PRO+	14,32	17,19		35,0	21,8	26,2
	CD2400H PRO+	14,32	17,19		42,0	26,2	31,4
	CD2500H PRO+	16,26	19,51		42,0	26,2	31,4
	CD2500M PRO+	18,45	22,14		42,0	26,2	31,4
	CD3000H PRO+	18,45	22,14		53,0	33,0	39,6
	CD2001B PRO+	20,85	25,02		35,0	21,8	26,2
	CD3001M PRO+	20,85	25,02		53,0	33,0	39,6
	CD3401H PRO+	20,85	25,02		68,0	42,4	50,9
	CD2501B PRO+	24,10	28,92		42,0	26,2	31,4
	CD3501H PRO+	24,10	28,92		68,0	42,4	50,9
	CD3001B PRO+	27,36	32,83		53,0	33,0	39,6
	CD3501M PRO+	27,36	32,83		68,0	42,4	50,9
	CD4501H PRO+	27,36	32,83		92,0	57,4	68,9
	CD3501B PRO+	31,27	37,52		68,0	42,4	50,9
	CD5001M PRO+	31,27	37,52		92,0	57,4	68,9
	CD4001B PRO+	36,70	44,04		75,0	46,8	56,2
CD5201M PRO+	36,70	44,04		92,0	57,4	68,9	

Standard version of the motor / contact our technical service for operating conditions not present in the catalog
表上黄色为标准电机。

Electric Motor LRA (Locked Rotor Ampere)

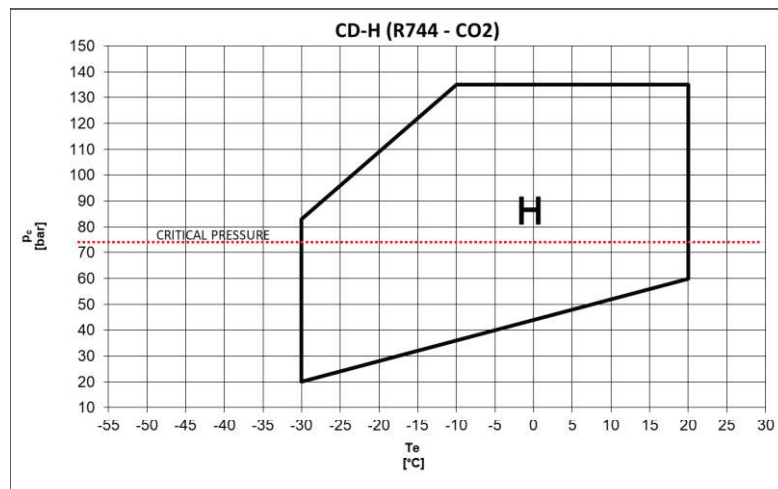
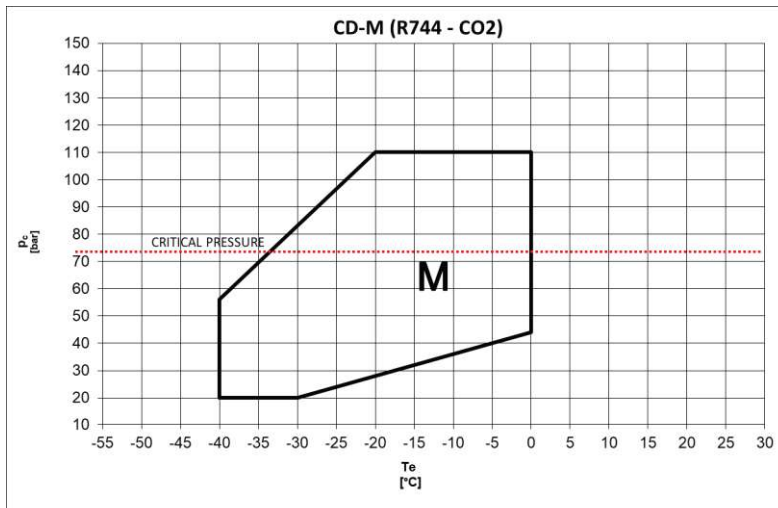
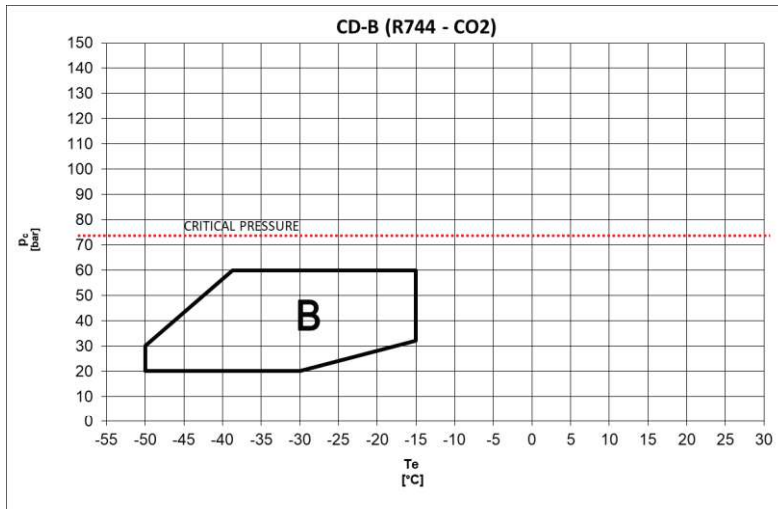
锁定转子电流 (堵转电流)

RANGE 系列	MODEL 型号	DISPLACEMENT 排量		LOCKED ROTOR CURRENT 锁定转子电流 V / ph / Hz [A]	
		50 Hz	60 Hz	220 -240 / 3 / 50 265 -290 / 3 / 60 D	380 -420 / 3 / 50 440 -480 / 3 / 60 Y
		[m3/h]	[m3/h]		
CD4 PRO+	CD4 55-4.8M PRO+	4,83	5,80	94,0	54,0
	CD4 75-4.8H PRO+	4,83	5,80	125,0	72,0
	CD4 75-6.6M PRO+	6,62	7,94	125,0	72,0
	CD4 90-6.6H PRO+	6,62	7,94	139,0	80,0
	CD4 75-7.5M PRO+	7,53	9,04	125,0	72,0
	CD4 90-7.5H PRO+	7,53	9,04	139,0	80,0
	CD4 90-9.5M PRO+	9,53	11,44	139,0	80,0
	CD4 120-9.5H PRO+	9,53	11,44	158,0	91,0
CD400 PRO+	CD2000H PRO+	12,09	14,51		168
	CD2000M PRO+	14,32	17,19		168
	CD2400H PRO+	14,32	17,19		168
	CD2500H PRO+	16,26	19,51		168
	CD2500M PRO+	18,45	22,14		168
	CD3000H PRO+	18,45	22,14		175
	CD2001B PRO+	20,85	25,02		168
	CD3001M PRO+	20,85	25,02		175
	CD3401H PRO+	20,85	25,02		222
	CD2501B PRO+	24,10	28,92		168
	CD3501H PRO+	24,10	28,92		222
	CD3001B PRO+	27,36	32,83		175
	CD3501M PRO+	27,36	32,83		222
	CD4501H PRO+	27,36	32,83		306
	CD3501B PRO+	31,27	37,52		222
	CD5001M PRO+	31,27	37,52		306
	CD4001B PRO+	36,70	44,04		245
	CD5201M PRO+	36,70	44,04		306

Standard version of the motor / contact our technical service for operating conditions not present in the catalog
表上黄色为标准电机。

Application Envelope

应用包络线



CD4 PRO+
CD400 PRO+

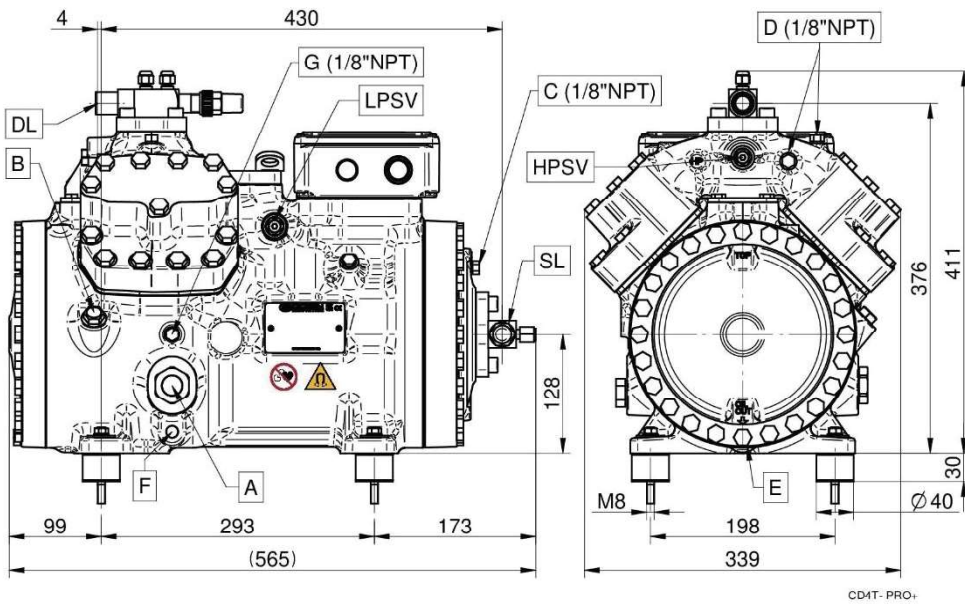
The application envelope changes with the compressor model and is available for every model in the DORIN web software
应用包络线随压缩机型号变化并且可以在都凌选型软件查到

Compressors application envelopes valid for superheat values lower than 10K / For evaporating temperatures > 10°C use PAG68 oil
应用包络线内过热度低于10K

Technical Drawings

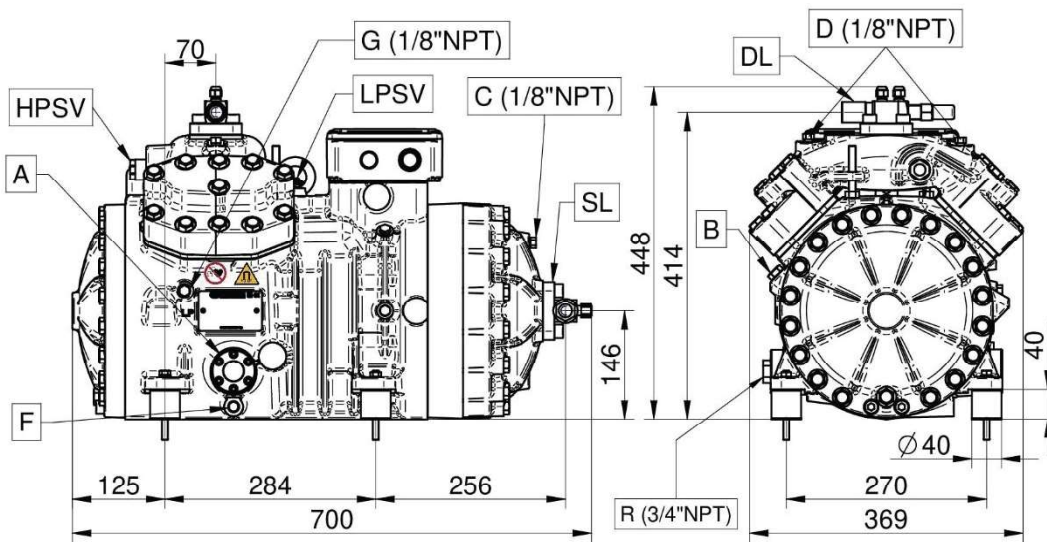
外形尺寸

CD4 PRO+



MODEL 型号
CD4 55-4.8M PRO+
CD4 75-4.8H PRO+
CD4 75-6.6M PRO+
CD4 90-6.6H PRO+
CD4 75-7.5M PRO+
CD4 90-7.5H PRO+
CD4 90-9.5M PRO+
CD4 120-9.5H PRO+

CD400 PRO+



MODEL 型号	Fig.
CD 2000H PRO+*	1-2*
CD 2000M PRO+*	1-2*
CD 2400H PRO+*	1-2*
CD 2500H PRO+*	1-2*

Figure/Figura 1

For the models with *, if equipped with oil pump (accessory on request) see for dimensions figure 2 (with L = 738 mm / KS = 256)

A - Oil sight - 油视镜

B - Oil charge plug - 注油塞

C - Low pressure tap - 低压旋塞

D - High pressure tap - 高压旋塞

E - Oil drain plug/Oil filter - 排油塞/滤油器

F - Crankcase heater - 曲轴箱加热器

G - Oil return - 回油

DL - Discharge service valve - 排气阀

SL - Suction service valve - 吸气阀

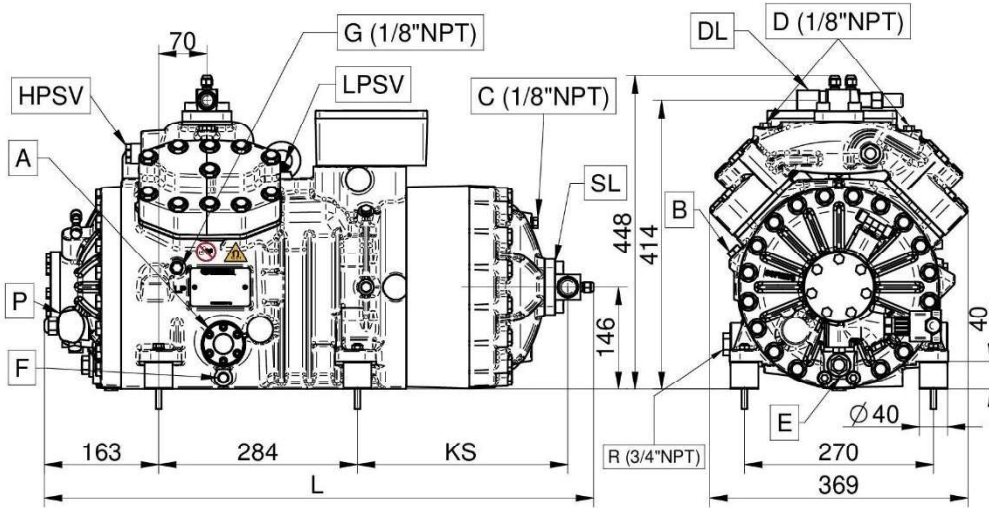
LPSV - Low pressure safety valve - 低压安全阀

HPSV - High pressure safety valve - 高压安全阀

Technical Drawings

外形尺寸

CD400 PRO+



MODEL MODELLO	Fig.	L [mm]	KS [mm]
CD 2500M PRO+	2	738	256
CD 3000H PRO+	2	738	256
CD 2001B PRO+	2	738	256
CD 3001M PRO+	2	738	256
CD 3401H PRO+	2	780	298
CD 2501B PRO+	2	738	256
CD 3501H PRO+	2	780	298
CD 3001B PRO+	2	738	256
CD 3501M PRO+	2	780	298
CD 4501H PRO+	2	780	298
CD 3501B PRO+	2	785	301
CD 5001M PRO+	2	785	301
CD 4001B PRO+	2	785	301
CD 5201M PRO+	2	785	301

Figure/型 2

A-Oil sight - 油视镜

B-Oil charge plug - 注油塞

C-Low pressure tap - 低压旋塞

D-High pressure tap - 高压旋塞

E-Oil drain plug - 排油塞

F-Crankcase heater - 曲轴箱加热器

G-Oil return - 回油口

R-Oil level connection - 油平衡连接

DL-Discharge service valve - 排气阀

SL-Suction service valve - 吸气阀

LPSV-Low pressure safety valve - 低压安全阀

HPSV-High pressure safety valve - 高压安全阀



DORIN WEB SOFTWARE

Open the camera app on your device and point it at the QR code to scan it. Make sure that all the four corners of the QR code are in view. A pop-up notification will appear on your screen, tap the notifications to launch the code.

Dorin都凌在线选型软件
扫描二维码，即可在线选型。



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