

ENGINEERING
TOMORROW

Danfoss

Catalog

Optyma™ Semi-Hermetic

Cool down with high efficiency
for better food conservation

R22, R404A/R507 - 60Hz



www.danfoss.com

Optyma™
by Danfoss

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Built-in reliability

Quality driven to provide 100% factory tested units to our customers with Danfoss premium quality. Built with Bock compressor and the reliable micro-channel condenser, the Optyma™ **Semi-Hermetic** includes all high-end Danfoss components.



Medium back pressure units

Optyma™ **Semi-Hermetic** units are designed to operate reliably from 5°C to -25°C and are built tough to deliver great performance in harsh environments. The units provide stable running conditions to ensure efficient operation of the hermetic circuit, which is crucial for better food conservation.



Easy transport

Lightweight and compact units allows easy handling and transportation.



Increased business opportunities

Danfoss Optyma™ **Semi-Hermetic** can be installed up to 40m distance from the evaporator. Therefore it extends the possibilities of field application for low and medium temperatures. The cooling capacity application range has almost no limits.



Simple Maintenance

The easy maintenance design allows a quick repair on compressor, electrical box, fan motor and condenser since there is free access to these key components.



Robust design

The Danfoss Optyma™ **Semi-Hermetic** is designed using microchannel heat exchangers. The baseplate is galvanized, painted, treated and tested to ensure long life of the unit.



State-of-the-art design

The units are standard featured with micro-channel condenser, receiver, filter drier, sight glass, electrical box, suction and liquid line valves, pressure switch and anti-vibration piping structure, to avoid vibration being transmitted to the hermetic circuit.



Support and product availability

Local sales and technical support available. Access to a full set of tools for selection and installation. The products and spare parts are available in:

- Distribution channels;
- Website Danfoss, store.danfoss.com/br
- App Ref Tools available on Play Store, Apple Store and Web version.

Key product features

Robust Application



- Robust and resistant to corrosion
- Compact design
- Easy Maintenance

Micro channel heat exchanger



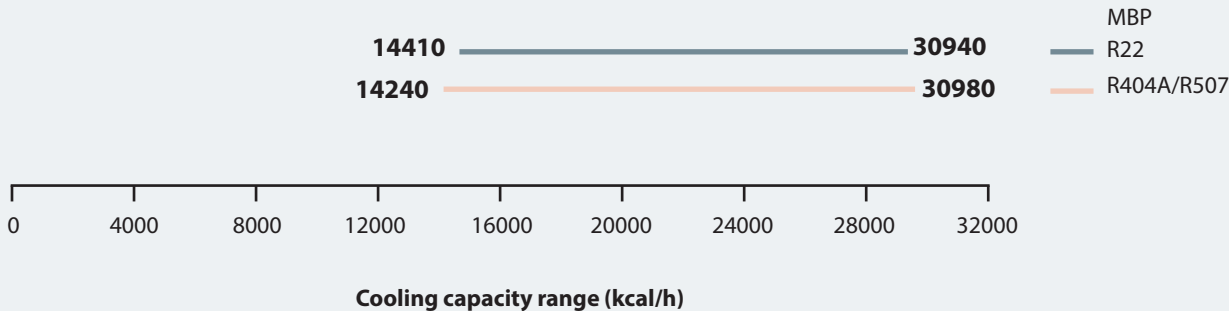
- Easy & fast cleaning
- Lower refrigerant charge
- Longer life cycle

Service ports outside



- Service valves for suction & liquid lines are also available for receiver.

Capacity & Operational range



MBP Rated conditions, Saturated suction temperature -10°C. Ambient temperature +32°C. Superheat 18K. Subcooling 3K

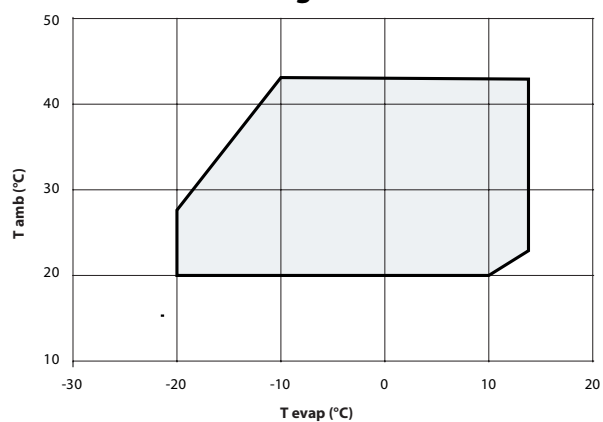
Condensing unit limits
Ambient temp [°C] Up to 43°C

T Evaporation [°C]	Min	Max
MBP R22	-10	12,5
MBP R404A/R507	-40	7,5

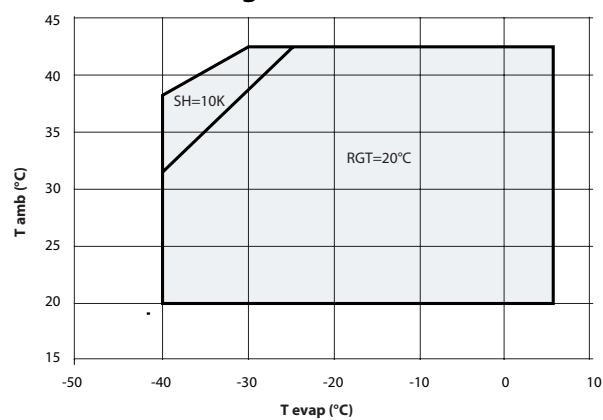
Limits depends on the selected unit

MBP

Refrigerant R22



Refrigerant R404A/R507



Legend:
 T_{amb} - Ambient Temperature
 T_{evap} - Evaporating Temperature

Designation system for the Optyma™ Semi-Hermetic with Micro channel

	OP-HBZ	315	D	49	Q
	1 2 3	4	5	6	7
1 Application	H = High and Medium evaporating back pressure (HBP/MBP)				
2 Design	B = Condensing Unit with semi-hermetic compressor				
3 Refrigerant/Oil	Z = R404A/R507/R22 polyester				
4 Compressor Size	Compressor displacement (cm³) 315 - 380 - 475 - 565 - 665				
5 Condenser Technology	D = Micro-channel				
6 Product Configuration	Table 1				
7 Electrical Code	Q = 220V/3F/60Hz V = 380V/3F/60Hz				

Label - Designation

OPTYMA™ Made in Brazil			
A	Modelo:	HBZ315D49Q	
B	Código:	115F0726	
C	Serial:	JF 18 0329144	
D	Compressor:	230V60Hz 3PH LRA:92,4A RLA: 18,3A	F
E	Ventilador:	230V60Hz 1PH FLA: 3,5A	G
		MCA: 30,7A	H
		Danfoss do Brasil Ind. E Com. Ltda	I
		CNPJ 62.1584800001-70	
	Teste:	LP(BP): 174psi HP(AP): 331psi	
		Refrigerante: R404A/R507	
		Óleo tipo: POLIESTER	
		Diagrama Elétr.: 191U036150	

- A: Model
- B: Code
- C: Serial number and bar code
- D: Compressor information
- E: Fan motor information
- F: LP & HP pressure test
- G: Refrigerant information
- H: Oil information
- I: Electrical diagram code

Tabela 1 - Product Configuration

Code	Application	Receiver	Oil Separator	Suction Accumulator	Filter	Sight Glass	Service Valve	
							Suction line	Liquid line
49	HBP	✓	✓	✓	✓	✓	✓	✓

Mechanical data

Model	Commercial reference	Compressor			Condenser		Fan motor			Receiver	Connection		Weight	
		Model	Displ. 60 Hz	Oil charge	Type	Internal volume	No.	Diameter	Airflow 60Hz		Suction line	Liquid line	Net	Gross
	(HP)		(m³/h)	(L)		(L)		(mm)	(m³/h)	(L)	(in)	(in)	(kg)	(kg)
MBP														
HBZ315	7,1/2	HGX34e/315-4S	27,3	1,10	N8	1,54	2	450	8820	18	1,1/8	5/8	202	208
HBZ380	10	HGX34e/380-4S	33,1	1,10	Q8	2,49	2	600	14900	24	1,1/8	3/4	202	208
HBZ475	12	HGX44e/475-4S	41,3	2,30	Q8	2,49	2	600	14900	24	1,3/8	3/4	310	316
HBZ565	15	HGX44e/565-4S	49,2	2,30	T8	5,45	2	600	16850	24	1,5/8	3/4	330	336
HBZ665	20	HGX44e/665-4S	57,7	2,30	T8	5,45	2	600	16850	24	1,5/8	3/4	330	336

Note: Gross weight includes pallet and packaging

Electrical data

Condensing unit							Compressor						Fan motor		
60Hz	220V/3F/60Hz (Q)			380V/3F/60Hz (V)			220V/3F/60Hz			380V/3F/60Hz			No.	FLA (A)	Power (W)
Model	LRA (A)	RLA (A)	MCA (A)	LRA (A)	RLA (A)	MCA (A)	LRA (A)	RLA (A)	MCC (A)	LRA (A)	RLA (A)	MCC (A)		230V/60Hz	60 Hz
MBP															
HBZ315	162,9	26,7	34,5	95,9	17,0	21,6	159,0	22,8	30,6	92,0	13,1	17,7	2	3,94	2x 450
HBZ380	164,6	33,0	43,1	97,6	21,4	27,2	159,0	27,4	37,5	92,0	15,8	21,6	2	5,6	2x 600
HBZ475	319,6	42,1	53,6	185,6	26,6	33,2	314,0	36,5	48,0	180,0	21,0	27,6	2	5,6	2x 600
HBZ565	362,6	47,5	59,9	211,6	29,7	36,8	357,0	41,9	54,3	206,0	24,1	31,2	2	5,6	2x600
HBZ665	362,6	52,8	68,3	211,6	32,7	41,6	357,0	47,2	62,7	206,0	27,1	36,0	2	5,6	2x 600

According Norm ANSI 540 (MBP: Te= - 6,7°C; Tc= +43,3°C)

Superheat: 18K

Subcooling: 3K

LRA: (Locked Rotor Amperage)

RLA: (Rated Load Amperage)

MCC: (Maximum Continuous Current)

FLA: (Full Load Amperage)

MCA: (Minimum Circuit Ampacity)

Model	Code number	Electrical code	Compressor model	Ambient temperature (°C)	Cooling Capacity (Kcal/h) and Power Consumption (W) at Evaporating Temperature (°C)											
					-15°C		-10°C		-5°C		0°C		5°C		10°C	
					CC	PC	CC	PC	CC	PC	CC	PC	CC	PC	CC	PC
HBZ315D49	115F0726 115F0727	Q V	HGX34e/315-4S	32	11870	7272	14410	7936	17250	8626	20380	9341	23800	10080	27500	10860
				35	11370	7421	13820	8125	16550	8859	19570	9625	22870	10420	26440	11250
				38	***	***	13220	8304	15860	9085	18770	9901	21950	10750	25390	11640
				43	***	***	12240	8582	14720	9441	17450	10340	20440	11290	23680	12280
HBZ380D49	115F0728 115F0729	Q V	HGX34e/380-4S	32	14990	8284	18310	8995	22080	9705	26290	10410	30970	11100	36110	11770
				35	14390	8478	17590	9241	21210	10010	25280	10780	29790	11530	34750	12280
				38	***	***	16860	9476	20350	10300	24270	11130	28610	11960	33400	12780
				43	***	***	15650	9841	18920	10770	22600	11710	26680	12660	31180	13610
HBZ475D49	115F0730 115F0731	Q V	HGX44e/475-4S	32	18700	10040	22920	10950	27660	11850	32970	12750	38860	13640	45350	14530
				35	17950	10270	22050	11230	26680	12200	31850	13160	37600	14120	43940	15070
				38	***	***	21190	11510	25690	12530	30730	13560	36340	14580	42520	15600
				43	***	***	19750	11930	24050	13060	28870	14190	34230	15320	40170	16450
HBZ565D49	115F0732 115F0733	Q V	HGX44e/565-4S	32	22380	11670	27370	12770	32970	13870	39220	14970	46150	16060	53780	17160
				35	21500	11940	26350	13100	31810	14280	37910	15450	44680	16620	52130	17800
				38	***	***	25340	13420	30660	14670	36600	15920	43200	17170	50470	18420
				43	***	***	23650	13920	28730	15290	34420	16660	40740	18040	47710	19420
HBZ665D49	115F0734 115F0735	Q V	HGX44e/665-4S	32	25300	13520	30940	14890	37240	16290	44250	17710	51980	19150	60430	20630
				35	24260	13820	29740	15270	35880	16750	42710	18260	50240	19790	58490	21360
				38	***	***	28550	15640	34520	17200	41170	18790	48510	20410	56550	22070
				43	***	***	26560	16210	32250	17910	38590	19640	45610	21410	53310	23210

LEGEND

CC: Cooling Capacity (Kcal/h)
PC: Power Consumption (W)

NOMINAL CONDITIONS:

Superheating: 18K
Subcooling: 3K

*** Consult Danfoss for indicated temperature conditions

Note:

Only POE SE55 oil is released for application with R22. Any other POE oil can not be used.



For additional information, please refer to Coolselector® at coolselector.danfoss.com or contact Danfoss

Model	Code	Electrical code	Compressor model	Ambient Temperature (°C)	Cooling Capacity (Kcal/h) and Power Consumption (W) at Evaporating Temperature (°C)																	
					-35		-30		-25		-20		-15		-10		-5		0		+5	
					C.C.	P.C.	C.C.	P.C.	C.C.	P.C.	C.C.	P.C.	C.C.	P.C.	C.C.	P.C.	C.C.	P.C.	C.C.	P.C.	C.C.	P.C.
HBZ315D49	115F0726 115F0727	Q V	HGX34e/315-45	32	4113	4499	5592	5168	7336	5851	9354	6548	11650	7260	14240	7991	17100	8745	20230	9529	23630	10350
				35	3798	4490	5200	5187	6854	5899	8773	6628	10960	7375	13430	8143	16170	8935	19170	9758	22420	10620
				38	3485	4466	4809	5190	6374	5933	8193	6694	10270	7476	12620	8280	15230	9110	18100	9972	21220	10870
				43	---	---	4160	5157	5574	5951	7225	6767	9122	7607	11270	8472	13670	9366	16320	10290	19200	11260
HBZ380D49	115F0728 115F0729	Q V	HGX34e/380-45	32	5592	5612	7468	6401	9698	7213	12300	8043	15300	8883	18690	9730	22500	10580	26720	11430	31340	12290
				35	5195	5620	6980	6446	9102	7299	11580	8174	14440	9063	17690	9962	21330	10870	25370	11780	29810	12690
				38	4798	5618	6493	6479	8508	7373	10870	8292	13590	9229	16680	10180	20160	11140	24030	12100	28280	13070
				43	---	---	5685	6503	7524	7462	9679	8452	12170	9466	15020	10500	18230	11550	21810	12600	25760	13670
HBZ475D49	115F0730 115F0731	Q V	HGX44e/475-45	32	7117	6801	9465	7751	12200	8724	15370	9709	19020	10700	23180	11690	27880	12680	33130	13680	38950	14680
				35	6602	6828	8837	7807	11440	8820	14470	9854	17960	10900	21950	11950	26460	13010	31520	14090	37130	15170
				38	6093	6853	8214	7860	10690	8909	13570	9988	16900	11090	20710	12200	25040	13330	29900	14470	35300	15640
				43	---	---	7184	7947	9437	9049	12070	10200	15130	11380	18650	12590	22660	13830	27190	15090	32240	16370
HBZ565D49	115F0732 115F0733	Q V	HGX44e/565-45	32	8724	7845	11520	8978	14760	10140	18510	11320	22830	12500	27740	13700	33280	14890	39480	16100	46340	17330
				35	8118	7876	10780	9044	13870	10250	17460	11490	21580	12740	26290	14010	31620	15290	37580	16580	44190	17900
				38	7517	7907	10050	9106	12990	10360	16400	11650	20340	12960	24840	14300	29950	15660	35680	17040	42040	18450
				43	---	---	8831	9209	11510	10520	14640	11890	18260	13310	22420	14760	27150	16240	32490	17760	38450	19310
HBZ665D49	115F0734 115F0735	Q V	HGX44e/665-45	32	6921	8938	12810	10290	16470	11680	20690	13110	25510	14560	30980	16050	37110	17560	43910	19120	51370	20730
				35	8936	8974	11940	10360	15420	11810	19450	13300	24060	14830	29290	16400	35160	18000	41700	19660	48890	21370
				38	8231	9010	11080	10430	14380	11930	18210	13480	22600	15090	27590	16730	33220	18430	39480	20170	46390	21990
				43	---	---	9659	10560	12660	12120	16150	13770	20170	15480	24770	17260	29970	19090	35790	20990	42240	22970

LEGEND

CC: Cooling Capacity (Kcal/h)
PC: Power Consumption (W)

NOMINAL CONDITIONS:

Superheating: 18K
Subcooling: 3K



For additional information, please refer to Coolselector® at coolselector.danfoss.com or contact Danfoss

Mechanical Components

Condensing Unit HBP		HBZ315	HBZ380	HBZ475	HBZ565	HBZ665
Suction Accumulator		191U006410	191U006410	191U006710	191U006710	191U006710
Compressor	R404A/R22	QC16064-C0	QC16065-C0	QC16166-C0	QC16167-C0	QC16168-C0
Kit Condenser MCHE		191U0645E	193U8025E	193U8025E	193U8026E	193U8026E
Fan Motor	60 Hz	119-8254E	119-8254E	119-8254E	119-8255E	119-8255E
Filter Drier	Code	023Z5045	023Z5046	023Z5046	023Z5046	023Z5046
	Model	DML165	DML166	DML166	DML166	DML166
Sight Glass	Code	014L0174	014L0175	014L0175	014L0175	014L0175
	Model	SGPI 16	SGPI 19	SGPI 19	SGPI 19	SGPI 19
Lubricating oil	R404A	7754023	7754023	7754023	7754023	7754023
	R22	*	*	*	*	*
Oil Separator		191U007810	191U007810	191U008010	191U008010	191U008010
Pressure Switch	HP Cartridge	061F6067	061F6067	061F6067	061F6067	061F6067
	MP 55 90s	---	---	060B017291	060B017291	060B017291
	KP1	060-110191	060-110191	060-110191	060-110191	060-110191
Receiver		118U6014	118U6015	118U6015	118U6015	118U6015

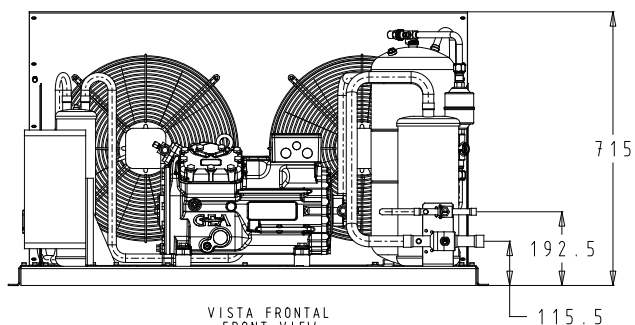
Note:

*Only POE SE55 oil is released for application with R22. Any other POE oil can not be used.

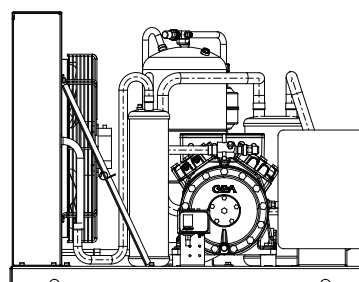
Electrical Components

Condensing Unit	230V / 60Hz (Q)		380V / 60Hz (V)		Phase failure Relay (208/480VAC)	Fan Capacitor (220V 1Ph) (μF)
	Contactors	Circuit Breaker	Contactors	Circuit Breaker		
	(A)	(A)	(A)	(A)		
HBZ315	40	63	40	63	BVF1-P	10
HBZ380	60	80	40	63	BVF1-P	10
HBZ475	60	80	40	63	BVF1-P	10
HBZ565	60	80	40	63	BVF1-P	10
HBZ665	60	80	40	63	BVF1-P	10

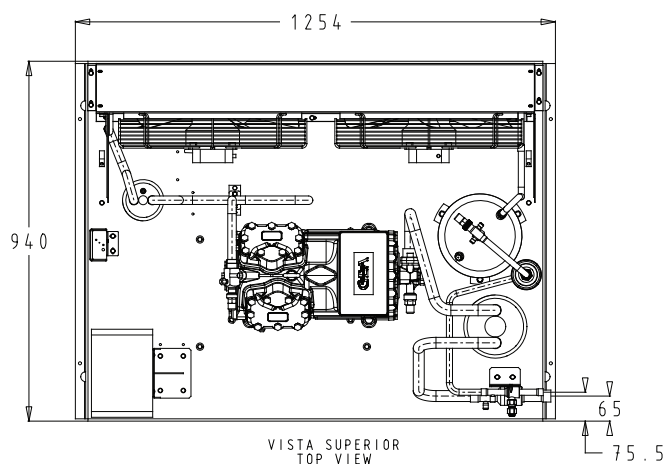
PLATAFORMA N8
PLATFORM N8



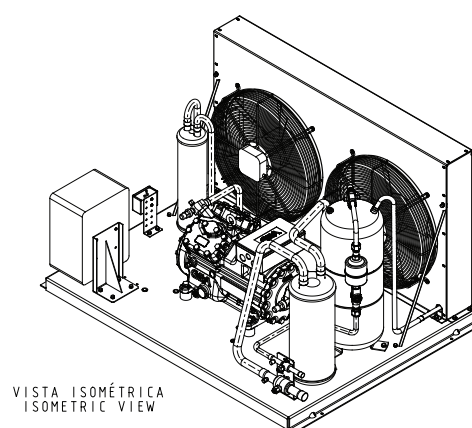
VISTA FRONTAL
FRONT VIEW



VISTA LATERAL ESQUERDA
LEFT VIEW

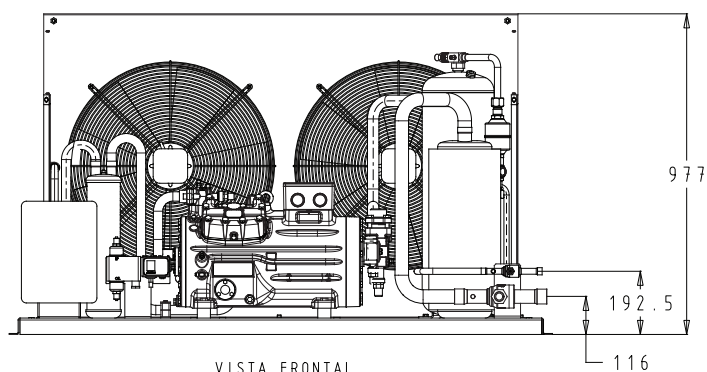


VISTA SUPERIOR
TOP VIEW

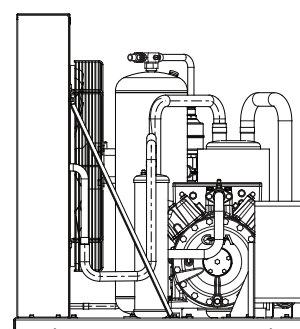


VISTA ISOMÉTRICA
ISOMETRIC VIEW

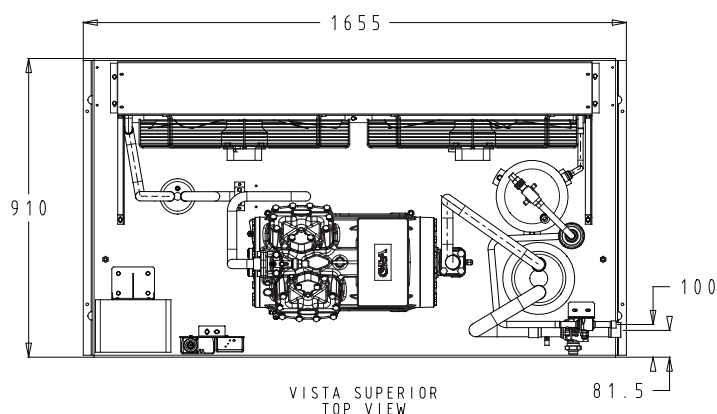
PLATAFORMA Q8
PLATFORM Q8



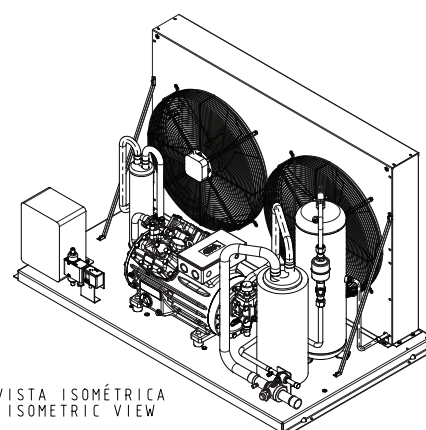
VISTA FRONTAL
FRONT VIEW



VISTA LATERAL ESQUERDA
LEFT VIEW

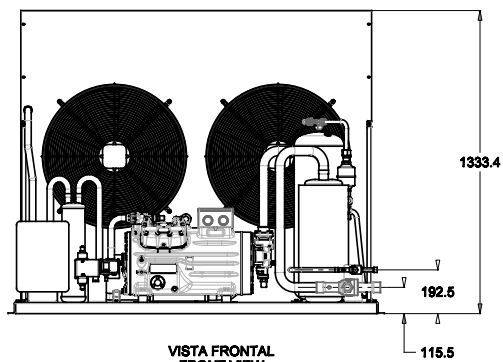


VISTA SUPERIOR
TOP VIEW

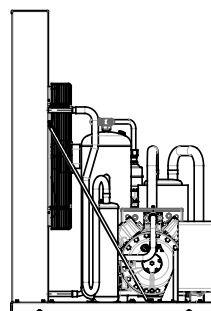


VISTA ISOMÉTRICA
ISOMETRIC VIEW

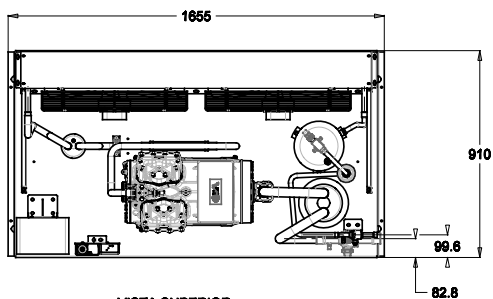
PLATAFORMA T8
PLATFORM T8



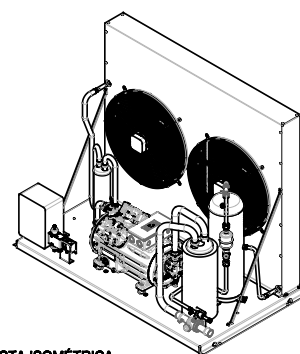
VISTA FRONTAL
FRONT VIEW



VISTA LATERAL ESQUERDA
LEFT VIEW

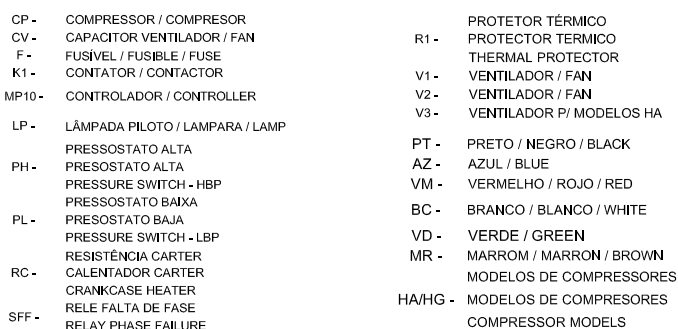


VISTA SUPERIOR
TOP VIEW



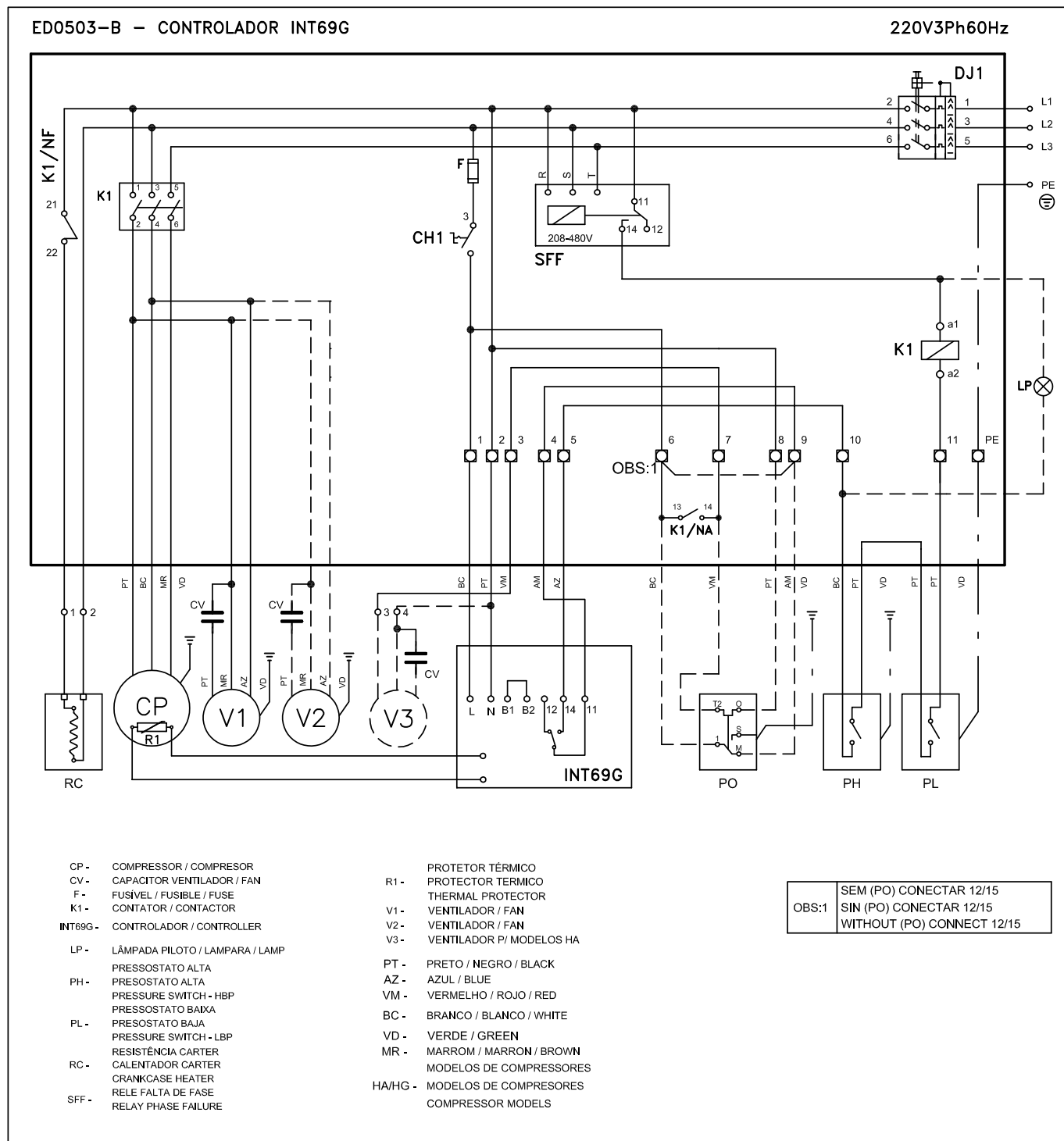
VISTA ISOMÉTRICA
ISOMETRIC VIEW

220V3Ph60Hz

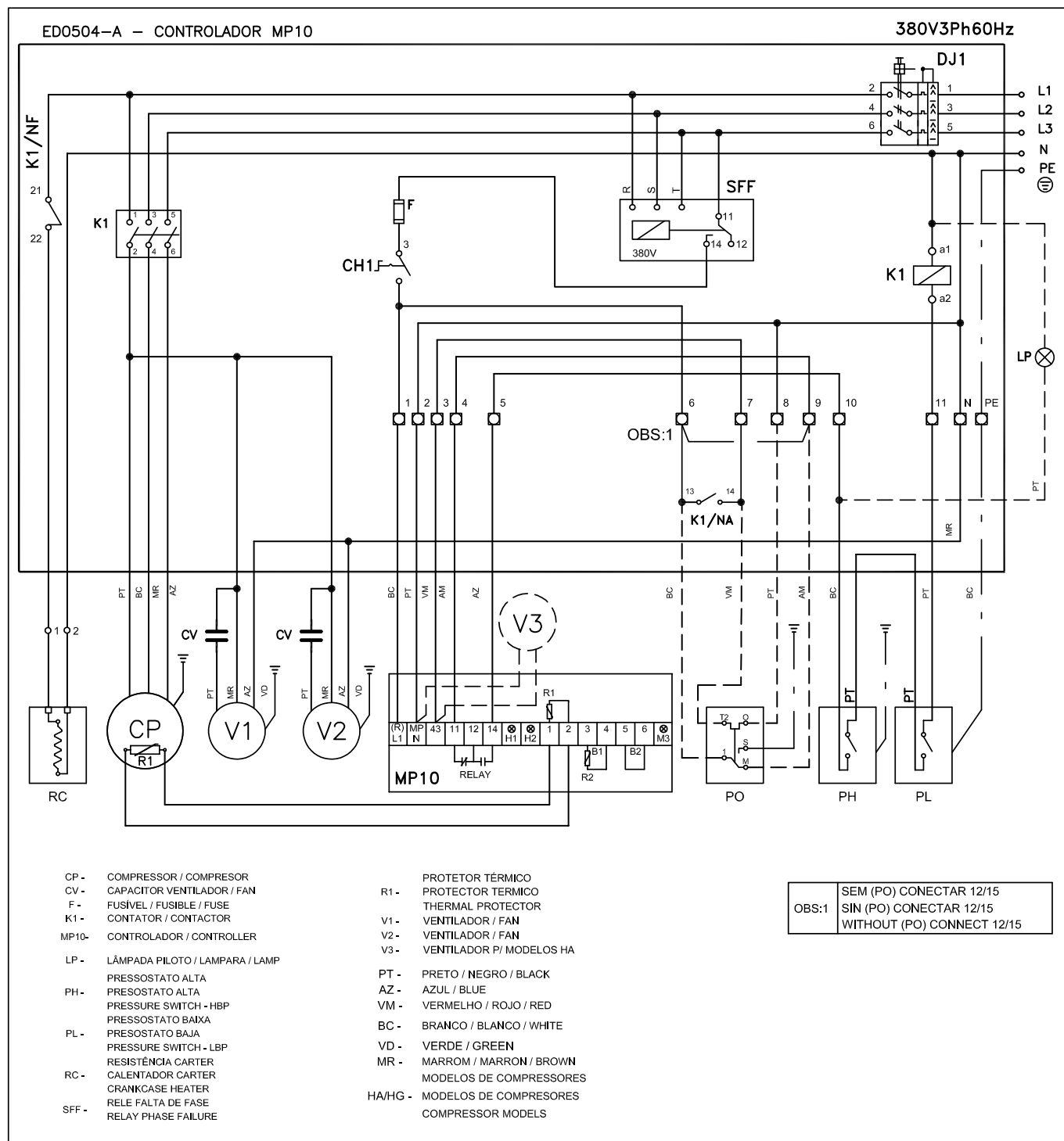


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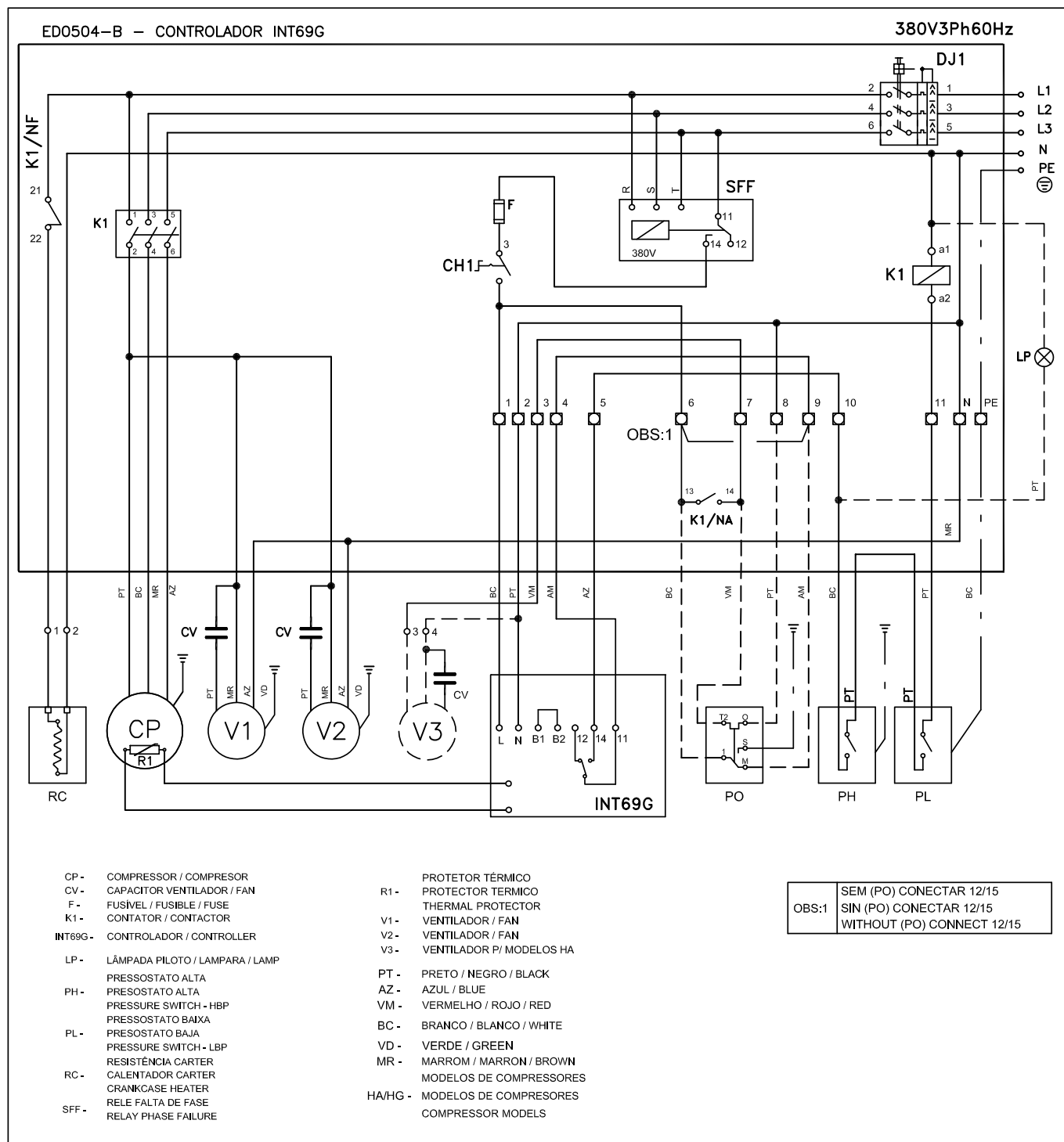
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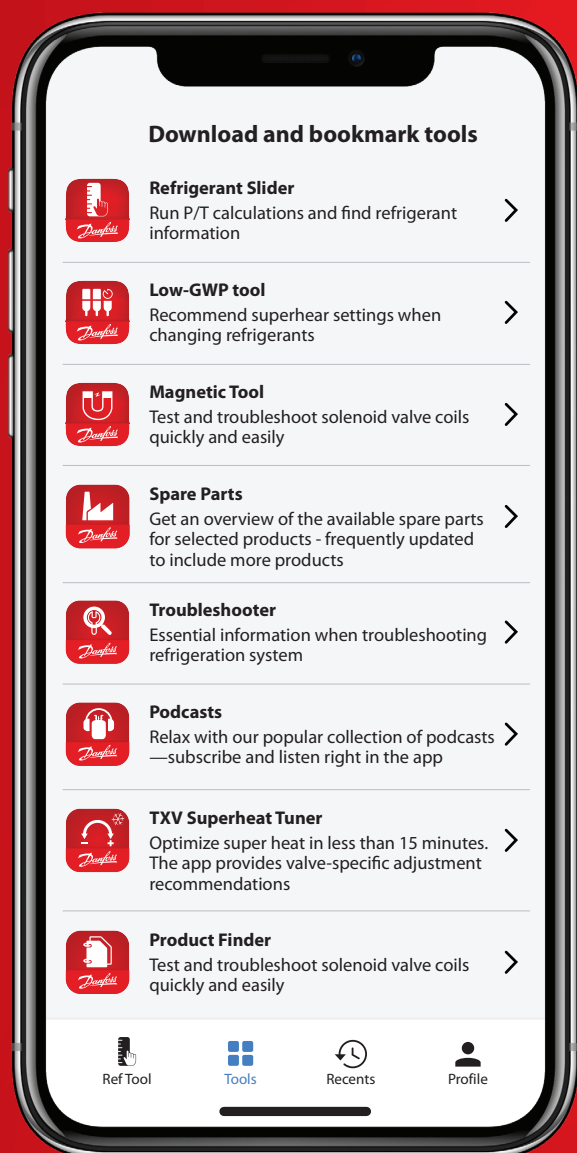
ED504A



ED0504B



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