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# Tecumseh Europe: a commercial refrigerant specialist

A market leader in refrigeration & comfort cooling, Tecumseh Europe is part of the multinational Tecumseh Product Company. Tecumseh Europe designs and manufactures innovative compressors and condensing units specifically for commercial refrigeration applications. Currently, almost 25% of consumable food worldwide is wasted due to non respect of the cold chain. Based on this fact, Tecumseh offers high value-added products and a full product range.

### ■ Our values

For more than 77 years, Tecumseh's success has been based on shared company values:

- employees are our greatest asset
- a true customer service orientation
- the highest product quality & services
- perpetual technological innovation.

### ■ Tecumseh: People

This value comes from the professionalism of each employee, with strong technology, sales and industrial competency. Continuous training programs and internal promotion of talented employees guarantees a high level of commitment.

### ■ Tecumseh: Innovative products

Since 1934, Tecumseh has developed highly innovative products targeting high efficiency & high reliability.

Tecumseh in Europe is the only hermetic compressors manufacturers to provide a wide range of compressors in all three primary hermetic compressor technologies:

**Reciprocating, Scroll & Rotary.**

### ■ Tecumseh: Known worldwide

Several key brands names such as Unité Hermétique®, Silensys®, Masterflux®, Celseon®, and Vector® are supported by more than 1,000 sales representatives and authorized wholesale distributors.

### ■ Tecumseh: Full range of services

Tecumseh proposes full support from product selection, **unit design, training, sales administration and technical support** on site.

### ■ Tecumseh: Green technology

Conscious of the economic and ecological stakes of tomorrow, **Tecumseh is committed to sustainable energy and efficiency development.** Tecumseh follows **ISO 14001** (environmental management system) as well as **ISO 9001** (quality management process).

With more than 1,350 employees, Tecumseh Europe is delivering on the promise of innovation, product quality and value. Tecumseh is fully customer focused toward being the best global commercial refrigeration supplier today and into the future.



«L'Unité Hermétique», a Tecumseh brand internationally recognised by professionals in the cooling industry, stands for reliability, expertise and skill. Tecumseh offers solutions labeled "Expertise L'Unité Hermétique," referencing the performance of the historical benchmark of the refrigeration market on all 5 continents.

Brochure Hermetic Compressors UK  
06/2012



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Tecumseh

Cooling for a Better Tomorrow™

www.tecumseh.com

COMMERCIAL  
REFRIGERATION

# HERMETIC COMPRESSORS



*Tecumseh*



PISTON



ROTARY



SCROLL

Powerful, Innovative, High-Performance  
Technologies you can count on

# HERMETIC

The only manufacturer to master  
**3 compressor technologies**



PISTON



Family TH

AE

AJ

FH

AG

## HERMETIC COMPRESSORS A certified level of excellence

The design office and the laboratory of Tecumseh Europe guarantee the levels of performance and validate the improvements made. This level of excellence is recognised by the largest certification organisations:

- COFRAC accreditation of the laboratory
- ASERCOM certification of the cooling performances of the compressors.

The proven technology of the **reciprocating** compressors by Tecumseh. Its reciprocating compressors are well-known on the market for their reliability and their strength. Tecumseh has built its reputation through the years on the constant improvements made to the products and on their manufacturing quality.



# COMPRESSORS



ROTARY



RG

HG

The **Rotary** technology ensures optimal yield for small cooling capacities. This technology allows a significant reduction in energy consumption and a low noise level along with reduced overall dimensions. Perfectly suited to demanding applications, its strength lies in its design.



SCROLL



VS

The **Scroll** technology ensures increased yield for medium and high cooling capacities regardless of the operating speed. This technology allows a significant reduction in energy consumption. Perfectly suited to demanding applications, its design gives it a high resistance to slugging.



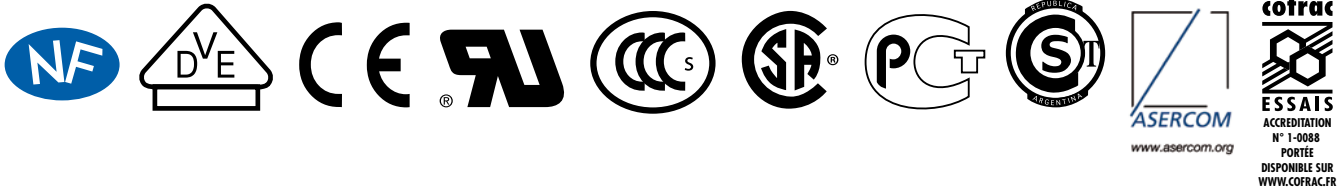
# QUALITY AND ENVIRONMENT

## Our commitments

**Tecumseh Europe's management system is recognised and certified according to ISO 9001 version 2008 quality and ISO 14001 version 2004 environmental standards.**

It shows the daily commitment and the capacity of the company to maintain and improve these certifications.

- **ISO 9001, version 2008:** Quality management system. This certification guarantees Tecumseh's ability to provide a product that is compliant with the applicable regulatory requirements and with those of its customers.
- **ISO 14001, version 2004:** Environmental management system. This certification guarantees that Tecumseh Europe respects environmental standards and regulations.
- **ISO 17025 by COFRAC (Comité Français d'Accréditation - French Accreditation Committee):** This certification guarantees the exactness of the measurements provided by the Tecumseh Europe laboratory to installers, instructors and installers. It is strictly monitored and audited each year.



### Commercial refrigeration

Display cases, ice-makers, bottle coolers, transport, industrial processes.

## An offer customised to **your requirements**

**Tecumseh Europe offers you a large range of compressors for your commercial refrigeration applications. This offer complies with the technical and regulatory specifications of your contracts.**

Reciprocating, rotary or scroll, the compressors available in our range operate with different refrigerants to suit all the key refrigeration applications.

### Natural refrigerants, Sustainable Development

## TECUMSEH, AN ENVIRONMENTALLY- CONSCIOUS BRAND

Tecumseh integrates the use of the **R290 natural coolant** to help **preserve our planet's future.**

- It has no impact on the ozone layer (zero ODPs).
- Very little impact on global warming:
  - GWP = 3
  - GWP R404A = 3 700, R134a = 1 200.
- Non-toxic coolant.
- Reduced energy consumption:
  - 5% to -10% vs. R404A.
- Improved reliability of the cooling systems.
- Pure coolant:
  - No slipping.
- Discharge temperature lower with regards to the R404A.
- No major modification of the cooling system with regards to the R404A.
- Natural coolant, therefore easily available.
- Few safety restrictions for applications containing less than 150 gr of coolant.
- An economic solution.
- A Tecumseh guideline is available.



# TECHNICAL DESCRIPTION

## ■ SPECIFICATIONS

### The essentials



PISTON



**TH**

Aimed at low capacity commercial cooling installations.

#### SPECIFICATIONS

##### Evaporation ranges:

High Back Pressure: -23 °C to +10 °C  
(-10 °F to +50 °F)

Low Back Pressure: -40 °C to -12 °C  
(-40 °F to +10 °F)

**Coolants:** R134a, R404A

**Capacity:** from 100 W to 614 W  
(EN 12900)



PISTON



**AE**

New generation high-output compressor.



#### SPECIFICATIONS

##### Evaporation ranges:

High Back Pressure: -23 °C to +10 °C  
(-10 °F to +50 °F)

Low Back Pressure: -40 °C to -12 °C  
(-40 °F to +10 °F)

**Coolants:** R134a, R404A, R290

**Capacity:** de 150 W to 1 600 W  
(EN 12900)



PISTON



**AJ**

The reference product combining silence, reliability and efficiency of commercial cooling.

#### SPECIFICATIONS

##### Evaporation ranges:

High Back Pressure: -23 °C to +10 °C  
(-10 °F to +50 °F)

Low Back Pressure: -40 °C to -12 °C  
(-40 °F to +10 °F)

**Coolants:** R134a, R404A

**Capacity:** from 380 W to 4 400 W  
(EN 12900)



PISTON



**FH**

Bi-cylinder compressor known for its reliability in commercial cooling.

#### SPECIFICATIONS

##### Evaporation ranges:

High Back Pressure: -23 °C to +10 °C  
(-10 °F to +50 °F)

Low Back Pressure: -40 °C to -12 °C  
(-40 °F to +10 °F)

**Coolants:** R134a, R404A

**Capacity:** from 1 100 W to 8 500 W  
(EN 12900)



PISTON



**AG**

Tri-cylinder compressor with high efficiency and reliability in negative and positive commercial cooling.

#### SPECIFICATIONS

##### Evaporation ranges:

High Back Pressure: -23 °C to +10 °C  
(-10 °F to +50 °F)

Low Back Pressure: -40 °C to -12 °C  
(-40 °F to +10 °F)

**Coolants:** R134a, R404A

**Capacity:** from 1 900 W to 15 000 W  
(EN 12900)



**ROTARY**



**RG**

The solution for high-yield application.

**SPECIFICATIONS**  
**Evaporation ranges:**  
 High Back Pressure: -23 °C to +10 °C (-10 °F to +50 °F)  
 Low Back Pressure: -40 °C to -12 °C (-40 °F to +10 °F)  
**Coolants:** R134a, R404A, R290  
**Capacity:** from 330 W to 2 400 W [EN 12900]



**ROTARY**



**HG**

The solution for high-yield applications with reduced overall dimensions.

**SPECIFICATIONS**  
**Evaporation ranges:**  
 High Back Pressure: -23 °C to +10 °C (-10 °F to +50 °F)  
 Low Back Pressure: -40 °C to -12 °C (-40 °F to +10 °F)  
**Coolants:** R134a, R404A, R290  
**Capacity:** from 330 W to 2 400 W [EN 12900]



**SCROLL**



**VS**

A high-yield solution for high power installations.

**SPECIFICATIONS**  
**Evaporation ranges:**  
 High Back Pressure: -23 °C to +10 °C (-10 °F to +50 °F)  
 Low Back Pressure: -40 °C to -12 °C (-40 °F to +10 °F)  
**Coolants:** R404A  
**Capacity:** from 3 700 W to 16 000 W [EN 12900]





- 1 ▶ **No letter** = single-phase low torque  
 C = single-phase high torque  
 T = three-phase
- 2 ▶ **Families:** TH-AEZ-AE-AJ-FH-AG-HG-RG-RK-VS.
- 3 ▶ **Applications**  
 1 = Low evaporation pressure. Motor with normal starting torque.  
 2 = Low evaporation pressure. Motor with high starting torque.  
 3 = High evaporation pressure. Motor with normal starting torque.  
 4 = High evaporation pressure. Motor with high starting torque.  
 5 = Air conditioning.  
 9 = Medium and high evaporation pressure. Motor with high starting torque.  
 0 = Medium and high evaporation pressure. Motor with normal starting torque.
- 4 ▶ Number of figures making up the cooling power. Example: 19 000 BTU/h
- 5 ▶ Corresponds to the first figures of the cooling power expressed in BTU/h at 60 Hz as per the conditions given on pages 8 and 9 of the catalogue. Example: 10 preceded by 5 means: 19 000 BTU/h
- 6 ▶ **A, B, C ou D** = coolant R-12  
 C = coolant R-407c (Air conditioning)  
**E, F, G ou H** = coolant R-22  
**M** = coolant R-600a  
**T** = coolant R-22 ou R-502  
**U** = coolant R-290  
**W** = coolant R-407C / R-22  
**Y** = coolant R-134a  
**Z** = coolant R-404A ou R-407B ou R-507



## Explanation of the model name description



# R-290



## POSITIVE COMMERCIAL COOLING

 <b>PISTON</b>	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P asb (Watt)	COP (W/W)
	<b>NEW</b> AE4425U	5,02	CSIR	345	195	1,77
	<b>NEW</b> AE4430U	6,12	CSIR	420	237	1,77
	<b>NEW</b> AE4440U	8,02	CSIR	564	322	1,75
	<b>NEW</b> AE4450U	10,33	CSIR	736	421	1,75
	<b>NEW</b> AE4460U	12,01	CSIR	890	503	1,77

 <b>ROTARY</b>	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P asb (Watt)	COP (W/W)
	HGA4467U	9,5	CSR	765	345	2,22
	HGA4492U	12,75	CSR	1029	455	2,26
	HGA4512U	16,12	CSR	1327	585	2,27

# R-290

## NEGATIVE COMMERCIAL COOLING

 <b>PISTON</b>	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -35 °C		
				QPF (Watt)	P asb (Watt)	COP (W/W)
	<b>NEW</b> AE2410U	5,48	CSIR	133	128	1,04
	<b>NEW</b> AE2415U	8,85	CSIR	219	215	1,02
	<b>NEW</b> AE2420U	10,96	CSIR	274	266	1,03

In a constant endeavour to improve its products, TECUMSEH EUROPE reserves the right to change any information contained in the catalogue without prior warning.

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	10
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	10,1
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,2
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,5
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	11,2

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
9,5 - 3/8"	7,9 - 5/16"	-	FZ	12
12,7 - 1/2"	7,9 - 5/16"	-	FZ	12,5
12,7 - 1/2"	7,9 - 5/16"	-	FZ	13,2

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	10,5
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,6
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,6

## EN 12900

	BP	HP/MHP
Evaporation T°	- 35 °C	- 10 °C
Condensation T°	+ 40 °C	+ 45 °C
Gas return T° (= evaporator outlet)	+ 20 °C	+ 20 °C
Sub-cooling	OK	OK



NOTE: one of the main consequences of these measurement conditions of the compressor cooling performances is a variation of these values with regards to the previous values published in some documents. These standards guarantee new powers that are closer to the «reality» of your various cooling installations and in compliance with european standards.



## VOLTAGE CODE



Previous code letter	New code letter	Description
C	<b>CZ</b>	208V 1~ 50 Hz / 230V 1~ 60 Hz
F	<b>FZ</b>	220 - 240V 1~ 50 Hz
G	<b>GZ</b>	208 - 220V 1~ 50 Hz
H	<b>HZ</b>	208 - 220V 1~ 60 Hz
K	<b>KZ</b>	220V 3~ 50 Hz / 220V 3~ 60 Hz
Q	<b>QZ</b>	200V 3~ 50 Hz / 200V 3~ 60 Hz
T	<b>TZ</b>	400V 3~ 50 Hz / 440V 3~ 60 Hz
W	<b>WZ</b>	208-230V~ 50 Hz / 220-230V~ 60 Hz
A	<b>XA</b>	100V 1~ 50 Hz / 115V 1~ 60 Hz
XG	<b>XG</b>	380-420V 3~ 50 Hz / 460V 3~ 60 Hz
M	<b>XU</b>	100V 1~ 50 Hz / 100V 1~ 60 Hz
V	<b>XZ</b>	115V-40 Hz / 230V-80Hz - 3~

# R-404A

## POSITIVE COMMERCIAL COOLING

	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P asb (Watt)	COP (W/W)
	THB4428Z	5,2	CSIR	386	307	1,26
	<b>New</b> AE4425Z	4,24	CSIR	349	212	1,61
	<b>New</b> AE4430Z	5,16	CSIR	421	266	1,58
	<b>New</b> AE4440Z	6,69	CSIR	541	342	1,58
	<b>New</b> AE4450Z	8,85	CSIR	719	467	1,54
	<b>New</b> AE4460Z	10,33	CSIR	877	532	1,65
	<b>New</b> AE4470Z	12,01	CSR	1024	628	1,63
	CAJ/TAJ9480Z	15,2	CSR / TRI	1159	692	1,67
	CAJ/TAJ9510Z	18,3	CSR / TRI	1453	844	1,72
	CAJ/TAJ9513Z	24,2	CSR / TRI	1827	990	1,85
	CAJ/TAJ4517Z	25,95	CSR / TRI	2070	1122	1,84
	CAJ/TAJ4519Z	34,45	CSR / TRI	2699	1595	1,69
	FH/TFH 4522Z	39,9	CSR / TRI	2617	1544	1,69
	FH/TFH 4524Z	43,5	CSR / TRI	3048	1743	1,75
	FH/TFH 4531Z	56,6	CSR / TRI	3968	2149	1,85
	FH/TFH 4540Z	74,2	CSR / TRI	5173	2891	1,79
	TAG4546Z	90,2	TRI	5457	2949	1,85
	TAG4553Z	100,7	TRI	6220	3354	1,85
	TAG4561Z	112,5	TRI	7107	3782	1,88
	TAG4568Z	124,4	TRI	8477	4223	2,01
TAG4573Z	135	TRI	9156	4681	1,96	
<b>New</b> TAG4581Z	145	TRI	10072	5192	1,94	

	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P asb (Watt)	COP (W/W)
	RG/HGA 4467Z	9,5	CSR	915	463	1,98
	RG/HGA 4480Z	11,5	CSR	1100	551	2,00
	RG/HGA 4492Z	12,8	CSR	1256	613	2,05
	RG/HGA 4512Z	16,1	CSR	1553	781	1,99

	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P asb (Watt)	COP (W/W)
	VSA9510Z	26,55	CSR / TRI	2339	1427	1,64
	VSA9514Z	36,05	CSR / TRI	3145	1973	1,59
	VSA9517Z	42,77	CSR / TRI	4175	2111	1,98
	VSA9521Z	50,14	CSR / TRI	5085	2420	2,10
	VSA9524Z	57,68	TRI	5505	2653	2,08
	VSA9528Z	68,8	TRI	6823	3220	2,12
	VSA9536Z	82,6	TRI	8676	3967	2,19
	VSA9544Z	106,5	TRI	10728	5367	2,00

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Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	8,2
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	10
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	10
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,2
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,5
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	11
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	11,2
12,7 - 1/2"	7,9 - 5/16"	6,35 - 1/4"	XA, FZ, GZ, TZ	20,8
15,9 - 5/8"	7,9 - 5/16"	6,35 - 1/4"	XA, FZ, GZ, TZ	21,5
15,9 - 5/8"	7,9 - 5/16"	6,35 - 1/4"	XA, FZ, GZ, TZ	22
15,9 - 5/8"	9,5 - 3/8"	6,35 - 1/4"	FZ, GZ, KZ, TZ	23
15,9 - 5/8"	9,5 - 3/8"	6,35 - 1/4"	FZ, GZ, KZ, TZ	23
15,9 - 5/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, KZ, TZ	29
15,9 - 5/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, KZ, TZ	29,3
22,2 - 7/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, KZ, TZ	31
22,2 - 7/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, KZ, TZ	32,8
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	43
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	45
28,6 - 1"1/8	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	46
28,6 - 1"1/8	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	47
28,6 - 1"1/8	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	49
28,6 - 1"1/8	15,9 - 5/8"	9,5 - 3/8"	TZ	49

← available 3Q 2013

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
9,5 - 3/8"	7,9 - 5/16"	-	XA, CZ, FZ	12,5
9,5 - 3/8"	7,9 - 5/16"	-	XA, CZ, FZ	12,5
12,7 - 1/2"	7,9 - 5/16"	-	XA, CZ, FZ	12,8
12,7 - 1/2"	7,9 - 5/16"	-	XA, CZ, FZ	13,3

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
19 - 3/4"	12,7 - 1/2"	-	FZ, TZ, XG	31
19 - 3/4"	12,7 - 1/2"	-	FZ, TZ, XG	31
19 - 3/4"	12,7 - 1/2"	-	FZ, TZ, XG	34
19 - 3/4"	12,7 - 1/2"	-	FZ, TZ, XG	34
19 - 3/4"	12,7 - 1/2"	-	TZ, XG	36
22,2 - 7/8"	12,7 - 1/2"	-	TZ, XG	51
22,2 - 7/8"	12,7 - 1/2"	-	TZ, XG	53
22,2 - 7/8"	12,7 - 1/2"	-	TZ, XG	56

## EN 12900

	BP	HP/MHP
Evaporation T°	- 35 °C	- 10 °C
Condensation T°	+ 40 °C	+ 45 °C
Gas return T° (= evaporator outlet)	+ 20 °C	+ 20 °C
Sub-cooling	OK	OK



NOTE: one of the main consequences of these measurement conditions of the compressor cooling performances is a variation of these values with regards to the previous values published in some documents. These standards guarantee new powers that are closer to the «reality» of your various cooling installations and in compliance with european standards.

## VOLTAGE CODE



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Q	<b>QZ</b>	200V 3~ 50 Hz / 200V 3~ 60 Hz
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XG	<b>XG</b>	380-420V 3~ 50 Hz / 460V 3~ 60 Hz
M	<b>XU</b>	100V 1~ 50 Hz / 100V 1~ 60 Hz
V	<b>XZ</b>	115V-40 Hz / 230V-80Hz - 3~

# R-134a

## POSITIVE COMMERCIAL COOLING

	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P <sub>asb</sub> (Watt)	COP (W/W)
	THB4410Y*	2,72	CSIR	124	88	1,41
	THB4413Y*	3,6	CSIR	169	112	1,51
	THB4415Y*	4,23	CSIR	198	133	1,49
	THB4419Y*	5	CSIR	241	157	1,54
	THB4422Y*	5,9	CSIR	308	194	1,59
	<b>New</b> AE4425Y	6,69	CSIR	344	218	1,58
	<b>New</b> AE4430Y	8,02	CSIR	390	242	1,61
	<b>New</b> AE4440Y	10,33	CSIR	524	312	1,68
	<b>New</b> AE4450Y	13,24	CSIR	669	423	1,58
	<b>New</b> AE4456Y	14,51	CSIR	694	439	1,58
	<b>New</b> AE4460Y	15,09	CSR	766	479	1,6
	CAJ/TAJ 4452Y	15,2	CSIR / TRI	657	399	1,65
	CAJ/TAJ 4461Y	18,3	CSIR / TRI	793	472	1,68
	CAJ/TAJ 4476Y	22,8	CSIR / TRI	889	557	1,60
	CAJ/TAJ 4492Y	25,9	CSIR / TRI	1113	649	1,71
	CAJ/TAJ 4511Y	32,7	CSR / TRI	1496	766	1,95
	CAJ4513Y	34,45	CSR	1591	844	1,89
	FH/TFH 4518Y	53,2	CSR / TRI	2049	1154	1,78
FH/TFH 4525Y	74,25	CSR / TRI	2913	1414	2,06	
TAG 4528Y	90,2	TRI	2693	1442	1,87	
TAG 4534Y	100,7	TRI	3569	1727	2,07	
TAG 4537Y	112,5	TRI	4112	1951	2,11	
TAG 4543Y	124,4	TRI	4281	2080	2,06	

\* Natural cooling

	Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
				Evaporation T° -10 °C		
				QPF (Watt)	P <sub>asb</sub> (Watt)	COP (W/W)
	RGA/HGA4445Y	9,5	CSIR	531	290	1,83
	RGA/HGA4450Y	11,5	CSIR	644	336	1,92
	RGA/HGA4460Y	12,8	CSIR	705	358	1,97
	RGA/HGA4476Y	16,1	CSIR	930	361	2,02

In a constant endeavour to improve its products, TECUMSEH EUROPE reserves the right to change any information contained in the catalogue without prior warning.

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, FZ	7
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, FZ	7,5
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, FZ, WZ	7,5
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, FZ	7,8
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, CZ, FZ, GZ	8
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	9,1
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	9,4
7,9 - 5/16"	6,35 - 1/4"	6,35 - 1/4"	FZ	9,6
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,5
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	11
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	11,3
12,7 - 1/2"	6,35 - 1/4"	6,35 - 1/4"	XA, FZ, GZ, TZ	18
12,7 - 1/2"	6,35 - 1/4"	6,35 - 1/4"	XA, CZ, FZ, GZ, XU, WZ, TZ	19
12,7 - 1/2"	6,35 - 1/4"	6,35 - 1/4"	XA, CZ, FZ, GZ, WZ, KZ	19,5
12,7 - 1/2"	7,9 - 5/16"	6,35 - 1/4"	XA, CZ, FZ, GZ, QZ, TZ	20
15,9 - 5/8"	7,9 - 5/16"	6,35 - 1/4"	CZ, FZ, GZ, QZ, TZ	22
15,9 - 5/8"	7,9 - 5/16"	6,35 - 1/4"	FZ	22
15,9 - 5/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, TZ, KZ	30
15,9 - 5/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, TZ, KZ	31
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	44
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	44
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	44
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	45

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
9,5 - 3/8"	7,9 - 5/16"	-	XA, CZ, FZ	11
9,5 - 3/8"	7,9 - 5/16"	-	XA, CZ, FZ	11
12,7 - 1/2"	7,9 - 5/16"	-	XA, CZ, FZ	12
12,7 - 1/2"	7,9 - 5/16"	-	XA, CZ, FZ	12,5

## EN 12900

	BP	HP/MHP
Evaporation T°	- 35 °C	- 10 °C
Condensation T°	+ 40 °C	+ 45 °C
Gas return T° (= evaporator outlet)	+ 20 °C	+ 20 °C
Sub-cooling	OK	OK

NOTE: one of the main consequences of these measurement conditions of the compressor cooling performances is a variation of these values with regards to the previous values published in some documents. These standards guarantee new powers that are closer to the «reality» of your various cooling installations and in compliance with european standards.

## VOLTAGE CODE

Previous code letter	New code letter	Description
C	<b>CZ</b>	208V 1~ 50 Hz / 230V 1~ 60 Hz
F	<b>FZ</b>	220 - 240V 1~ 50 Hz
G	<b>GZ</b>	208 - 220V 1~ 50 Hz
H	<b>HZ</b>	208 - 220V 1~ 60 Hz
K	<b>KZ</b>	220V 3~ 50 Hz / 220V 3~ 60 Hz
Q	<b>QZ</b>	200V 3~ 50 Hz / 200V 3~ 60 Hz
T	<b>TZ</b>	400V 3~ 50 Hz / 440V 3~ 60 Hz
W	<b>WZ</b>	208-230V~ 50 Hz / 220-230V~ 60 Hz
A	<b>XA</b>	100V 1~ 50 Hz / 115V 1~ 60 Hz
XG	<b>XG</b>	380-420V 3~ 50 Hz / 460V 3~ 60 Hz
M	<b>XU</b>	100V 1~ 50 Hz / 100V 1~ 60 Hz
V	<b>XZ</b>	115V-40 Hz / 230V-80Hz - 3~

# R-404A

# NEGATIVE COMMERCIAL COOLING



Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
			Evaporation T° -35 °C		
			QPF (Watt)	P asb (Watt)	COP (W/W)
THB2360Z*	3,6	CSIR	82	104	0,79
THB2378Z*	4,2	CSIR	100	136	0,74
THB2396Z	5,2	CSIR	125	157	0,80
<b>New</b> AE2410Z	5,02	CSIR	137	159	0,86
<b>New</b> AE2415Z	6,69	CSIR	187	217	0,86
<b>New</b> AE2420Z	9,35	CSIR	259	305	0,85
<b>New</b> AE2425Z	12,01	CSR	338	367	0,92
CAJ/TAJ2428Z	15,2	CSIR / TRI	309	368	0,84
CAJ/TAJ2432Z	18,3	CSIR / TRI	381	417	0,91
CAJ2440Z	21	CSR / TRI	463	499	0,93
CAJ/TAJ2446Z	26,2	CSR / TRI	627	604	1,04
CAJ/TAJ2464Z	34,5	CSR / TRI	820	845	0,97
FH/TFH2480Z	53,2	CSR / TRI	1125	1102	1,02
FH/TFH2511Z	74,2	CSR / TRI	1477	1388	1,06
<b>New</b> TAG2513Z	100,7	TRI	1913	1708	1,12
TAG2516Z	112,5	TRI	2341	2106	1,11
TAG2522Z	134,8	TRI	3187	2725	1,17
<b>New</b> TAG2525Z	145	TRI	3607	3164	1,14

\* Natural cooling



Models	Capacity (cm <sup>3</sup> )	Motor type	EN12900 (RTG 20 °C) - 50 Hz		
			Evaporation T° -35 °C		
			QPF (Watt)	P asb (Watt)	COP (W/W)
RG/HGA2426Z	9,5	CSR	344	315	1,09
RG/HGA2432Z	11,5	CSR	426	377	1,13
RG/HGA2436Z	12,8	CSR	449	412	1,09
RG/HGA2446Z	16,1	CSR	582	516	1,13

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Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, FZ, GZ	7
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	XA, FZ, GZ	8
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	8,3
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	9,9
6,35 - 1/4"	4,76 - 3/16"	6,35 - 1/4"	FZ	10
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,1
9,5 - 3/8"	6,35 - 1/4"	6,35 - 1/4"	FZ	10,1
12,7 - 1/2"	6,35 - 1/4"	6,35 - 1/4"	XA, FZ, GZ, TZ	20
12,7 - 1/2"	7,9 - 5/16"	6,35 - 1/4"	XA, FZ, GZ, TZ	21
12,7 - 1/2"	7,9 - 5/16"	6,35 - 1/4"	FZ	22
12,7 - 1/2"	7,9 - 5/16"	6,35 - 1/4"	XA, FZ, GZ, KZ, TZ	22
15,9 - 5/8"	9,5 - 3/8"	6,35 - 1/4"	XA, FZ, GZ, KZ, TZ	23
15,9 - 5/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, KZ, TZ	32
15,9 - 5/8"	12,7 - 1/2"	7,9 - 5/16"	FZ, GZ, KZ, TZ	32
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	TZ	44
22,2 - 7/8"	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	44
28,6 - 1"1/8	15,9 - 5/8"	9,5 - 3/8"	KZ, TZ	47
28,6 - 1"1/8	15,9 - 5/8"	9,5 - 3/8"	TZ	47

← available 3Q 2013

← available 3Q 2013

Outside operating diameter			Voltages available	Weight (kg)
Suction (mm - inches)	Discharge (mm - inches)	Load (mm - inches)		
9,5 - 3/8"	7,9 - 5/16"	-	XA, CZ, FZ	11,5
9,5 - 3/8"	7,9 - 5/16"	-	XA, CZ, FZ	12
12,7 - 1/2"	7,9 - 5/16"	-	XA, CZ, FZ	12
12,7 - 1/2"	7,9 - 5/16"	-	FZ	13

## EN 12900

	BP	HP/MHP
Evaporation T°	- 35 °C	- 10 °C
Condensation T°	+ 40 °C	+ 45 °C
Gas return T° (= evaporator outlet)	+ 20 °C	+ 20 °C
Sub-cooling	0K	0K

NOTE: one of the main consequences of these measurement conditions of the compressor cooling performances is a variation of these values with regards to the previous values published in some documents. These standards guarantee new powers that are closer to the «reality» of your various cooling installations and in compliance with european standards.

## VOLTAGE CODE

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Q	<b>QZ</b>	200V 3~ 50 Hz / 200V 3~ 60 Hz
T	<b>TZ</b>	400V 3~ 50 Hz / 440V 3~ 60 Hz
W	<b>WZ</b>	208-230V~ 50 Hz / 220-230V~ 60 Hz
A	<b>XA</b>	100V 1~ 50 Hz / 115V 1~ 60 Hz
XG	<b>XG</b>	380-420V 3~ 50 Hz / 460V 3~ 60 Hz
M	<b>XU</b>	100V 1~ 50 Hz / 100V 1~ 60 Hz
V	<b>XZ</b>	115V-40 Hzw 230V-80Hz - 3~



# APPENDICES

## Unit Conversions

- To convert the cooling production from Watts at 50 Hz into:

Btu/h at 50 Hz, use the multiplier coefficient 3.41.  
Kcal/h at 50 Hz, use the multiplier coefficient 0.86.

- In order to obtain a cooling production 60 Hz, multiply its value at 50 Hz by 1.2.

- Approximate conversion rule for obtaining the cooling power in CV at the standard point:

- In medium and high evaporation pressure and air conditioning (T° évap.: + 7,2 °C ; T° cond.: + 54,5 °C):

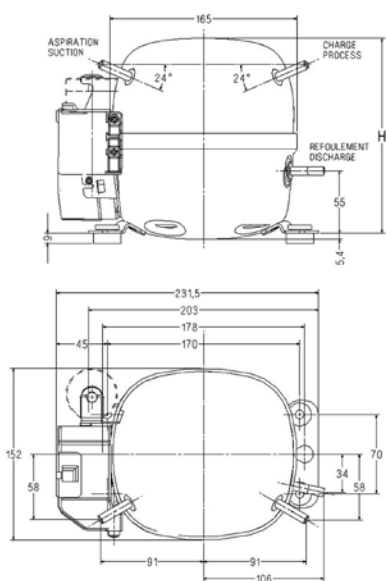
$$Q_o \text{ en CV} = \frac{\text{Cooling power at 60 Hz in Btu/h}}{12\,000}$$

- In low evaporation pressure (T° évap.: - 23,3 °C ; T° cond.: + 54,5 °C):

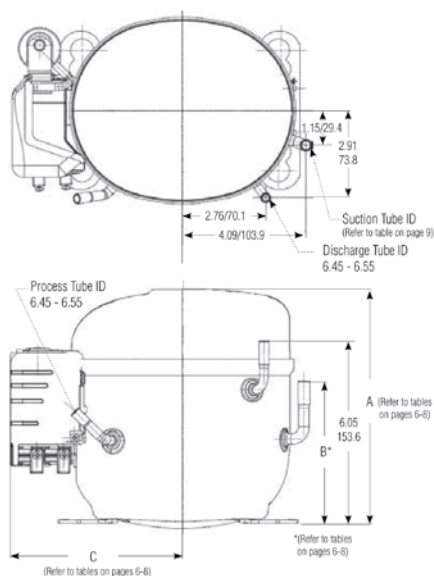
$$Q_o \text{ en CV} = \frac{Q_o \text{ in CV} = \text{Cooling power at 60 Hz in Btu/h}}{4\,000}$$

## Indicative technical diagrams

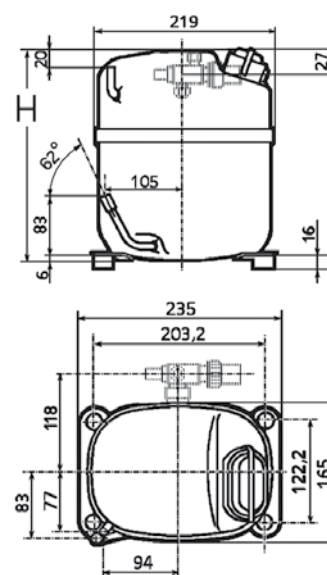
N° 1: TH



N° 2: AE

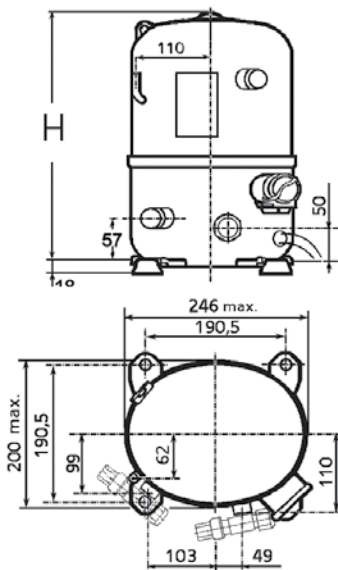


N° 3: AJ / CAJ / TAJ

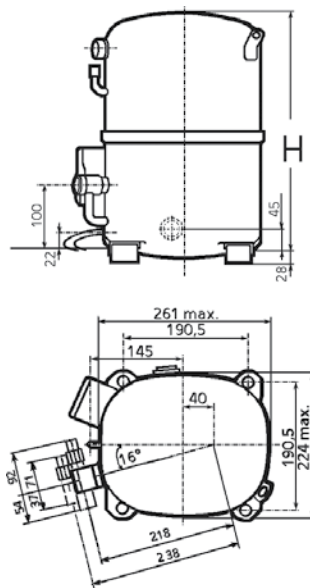


## Indicative **technical** diagrams

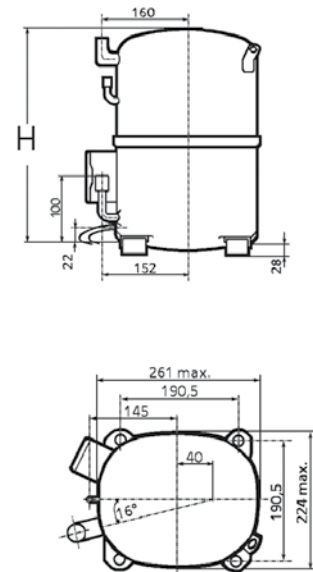
N° 4: FH / TFH



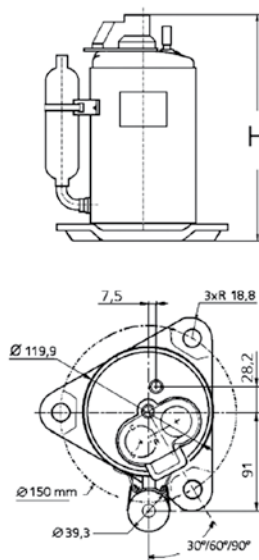
N° 5: AG/TAG



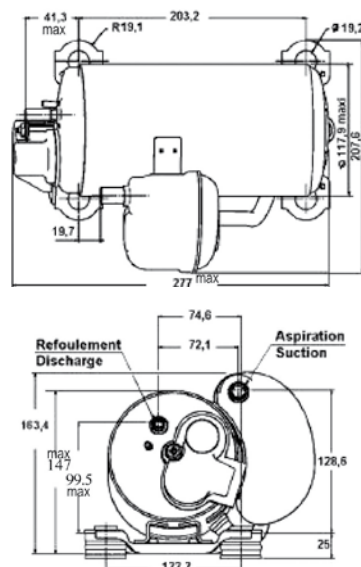
N° 5bis: AG/TAG



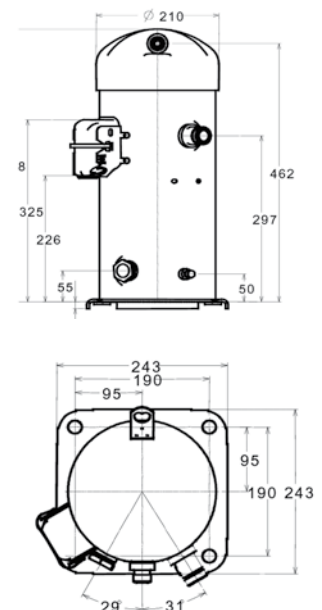
N° 6: RG



N° 7: HG



N° 8: VS

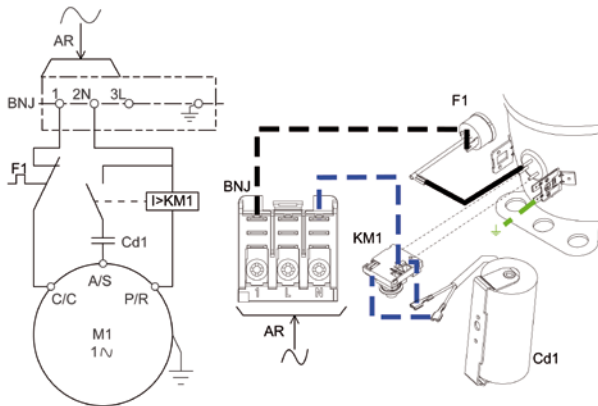


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 or on the selection CD

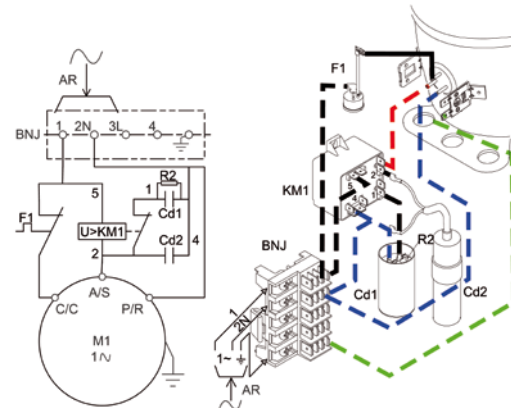
# APPENDICES

## Electrical diagrams

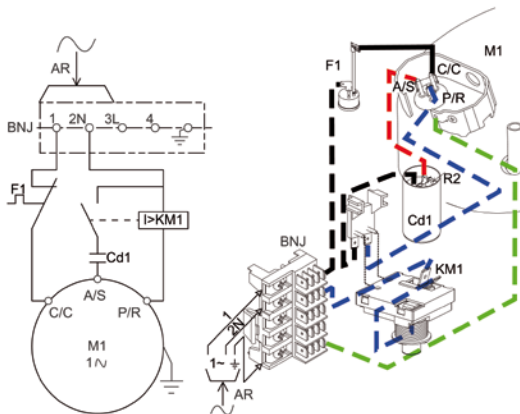
TH/AEZ/AE-CSIR



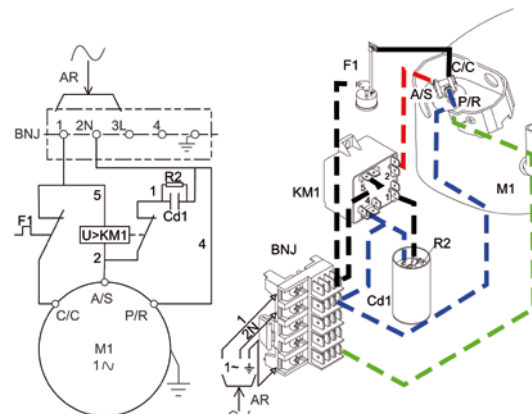
AEZ/AE-CSR



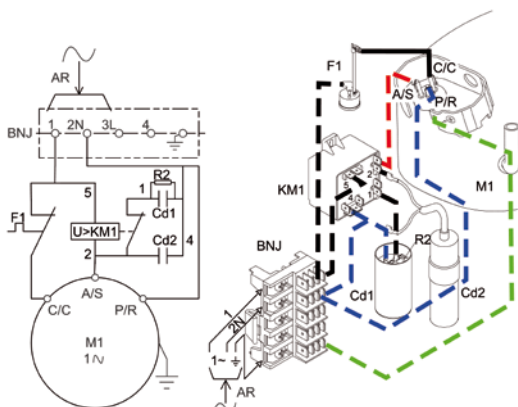
AJ-CSIR-RI



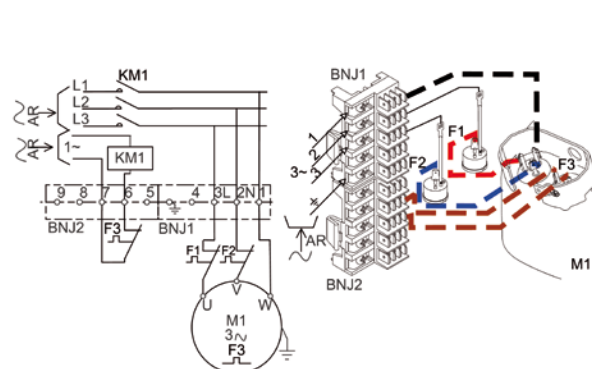
AJ-CSIR-RU



AJ-CSR

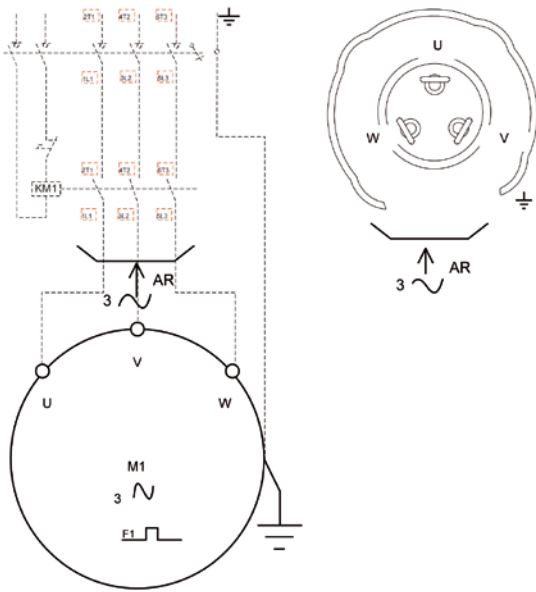


AJ-TRI

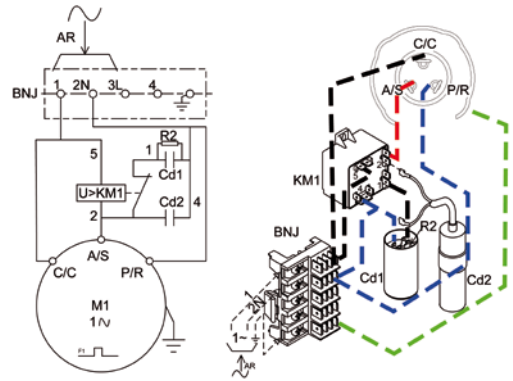


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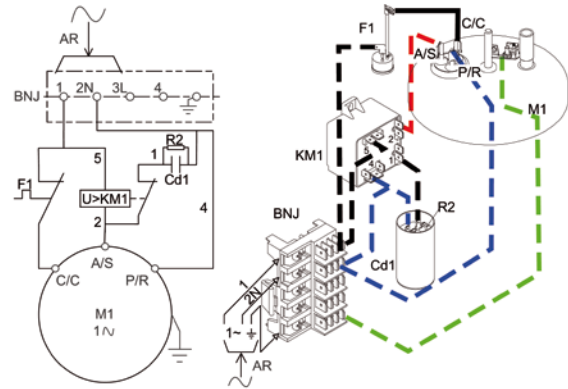
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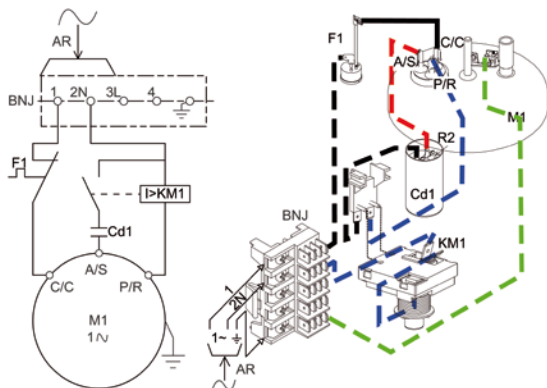
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## CSIR-RU



## CSIR-RI



## CSR

