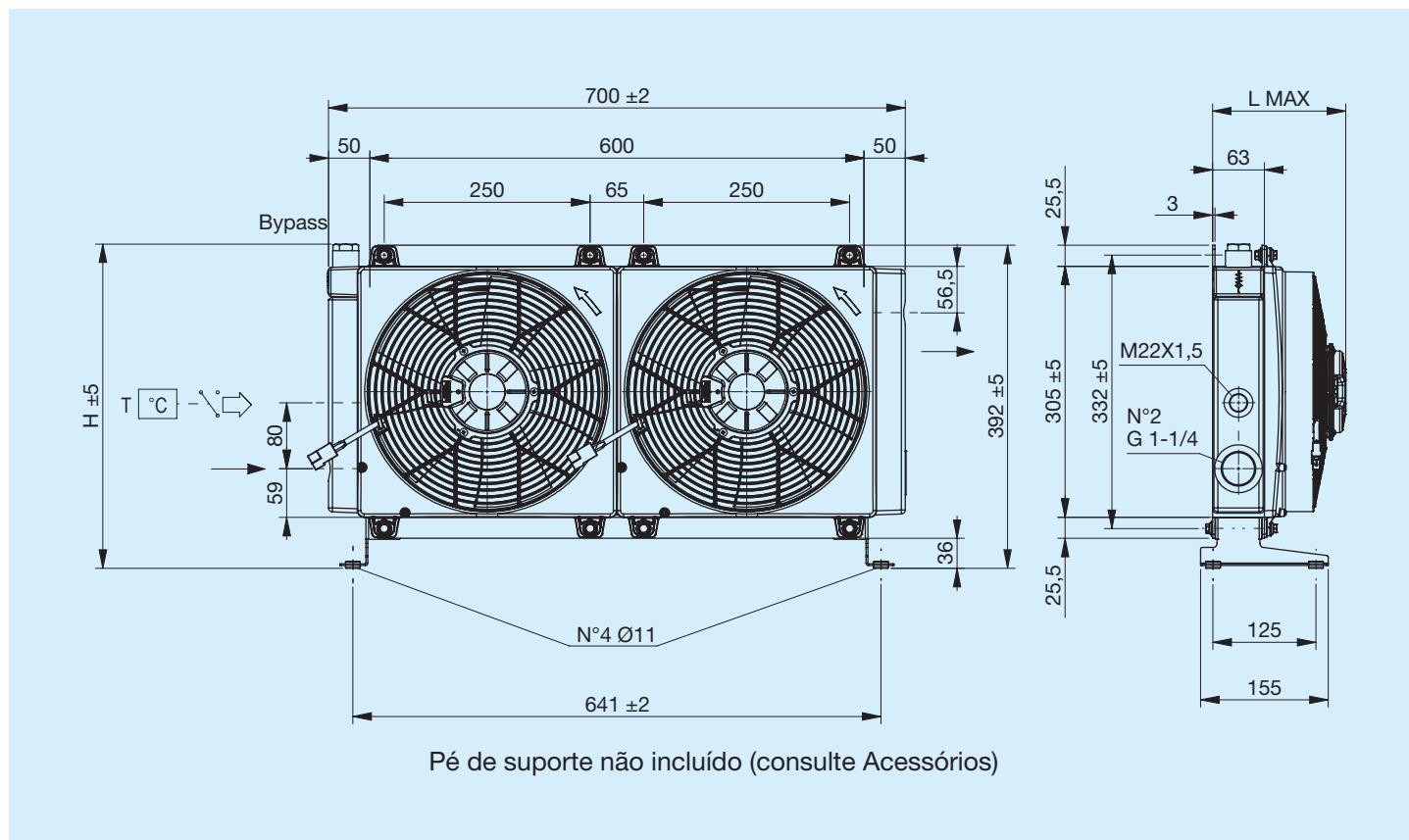


A48

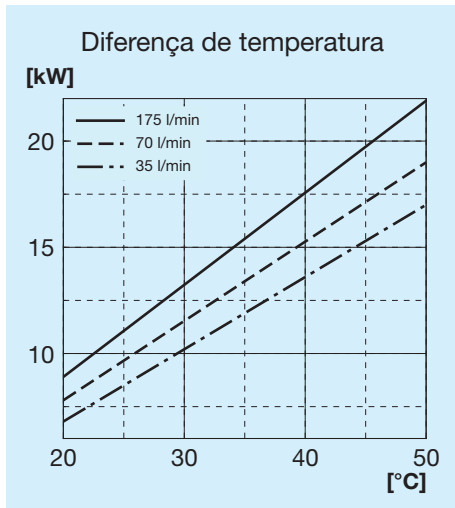


Antes de iniciar a utilização, leia atentamente o documento INSTRUÇÕES GERAIS DE USO PARA PERMUTADORES DE CALOR

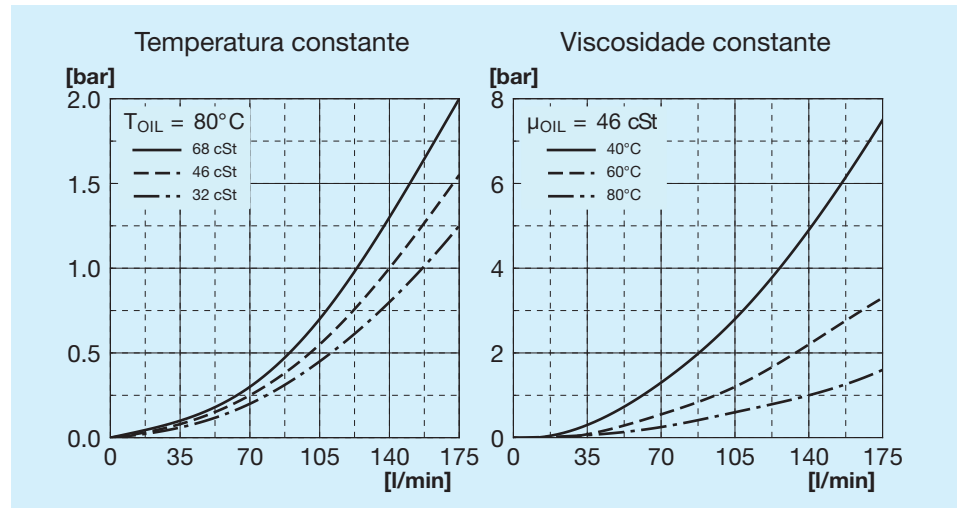


Código	Descrição	Ventila- dor mm	Caudal de ar m³/h	Tensão V	Corrente A	L Máx mm	H mm	Massa Kg	Capaci- dade l
FR633213105	A48 2EAX 12V bypass T15 V.T. 3 bar 60°C	2X280	2X2350	12	2X12.5	200	391	16	3.2
FR633213106	A48 2ESX 12V bypass T15 V.T. 3 bar 60°C	2X280	2X2350	12	2X12.5	200	391	16	3.2
FR633211003	A48 2EAP 12V bypass T15 VNR 4,5 bar	2X280	2X1420	12	2X8.7	160	375	16	3.2
FR633211005	A48 2EAX 12V bypass T15 VNR 4.5 bar	2X280	2X2350	12	2X12.5	200	375	16	3.2
FR633211006	A48 2ESX 12V bypass T15 VNR 4.5 bar	2X280	2X2350	12	2X12.5	200	375	16	3.2
FR633213115	A48 2EAX 24V bypass T15 V.T. 3 bar 60°C	2X280	2X2500	24	2X7.2	200	391	16	3.2
FR633213116	A48 2ESX 24V bypass T15 V.T. 3 bar 60°C	2X280	2X2500	24	2X7.2	200	391	16	3.2
FR633211015	A48 2EAX 24V bypass T15 VNR 4.5 bar	2X280	2X2500	24	2X7.2	200	375	16	3.2
FR633211016	A48 2ESX 24V bypass T15 VNR 4.5 bar	2X280	2X2500	24	2X7.2	200	375	16	3.2
FR633210003	A48 2EAP 12V	2X280	2X1420	12	2X8.7	160	391	13.5	3.2
FR633210004	A48 2ESP 12V	2X280	2X1420	12	2X8.7	160	391	13.5	3.2
FR633210005	A48 2EAX 12V	2X280	2X2350	12	2X12.5	200	391	16	3.2
FR633210006	A48 2ESX 12V	2X280	2X2350	12	2X12.5	200	391	16	3.2
FR633210013	A48 2EAP 24V	2X280	2X1600	24	2X4.7	160	391	13.5	3.2
FR633210014	A48 2ESP 24V	2X280	2X1600	24	2X4.7	160	391	13.5	3.2
FR633210015	A48 2EAX 24V	2X280	2X2500	24	2X7.2	200	391	16	3.2
FR633210016	A48 2ESX 24V	2X280	2X2500	24	2X7.2	200	391	16	3.2

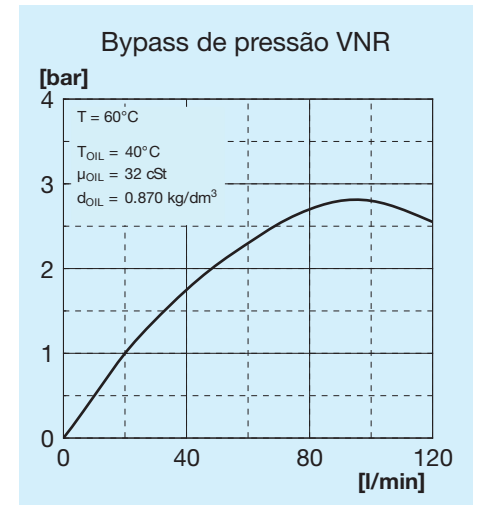
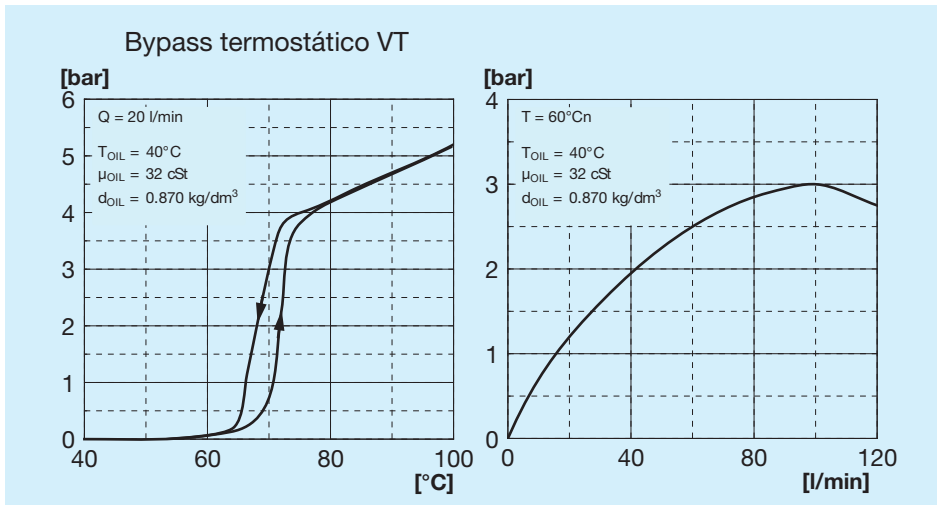
## Potência térmica



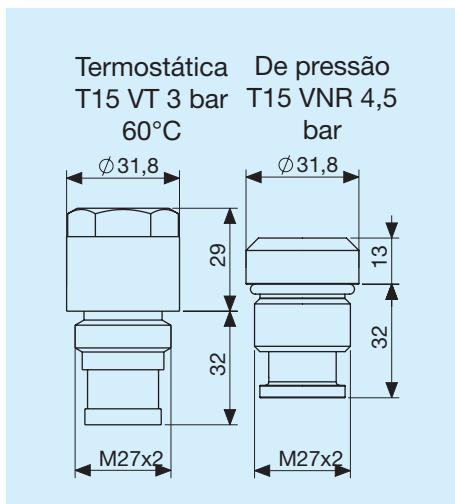
## Perda de carga passagem no radiador



## Perda de carga passagem bypass

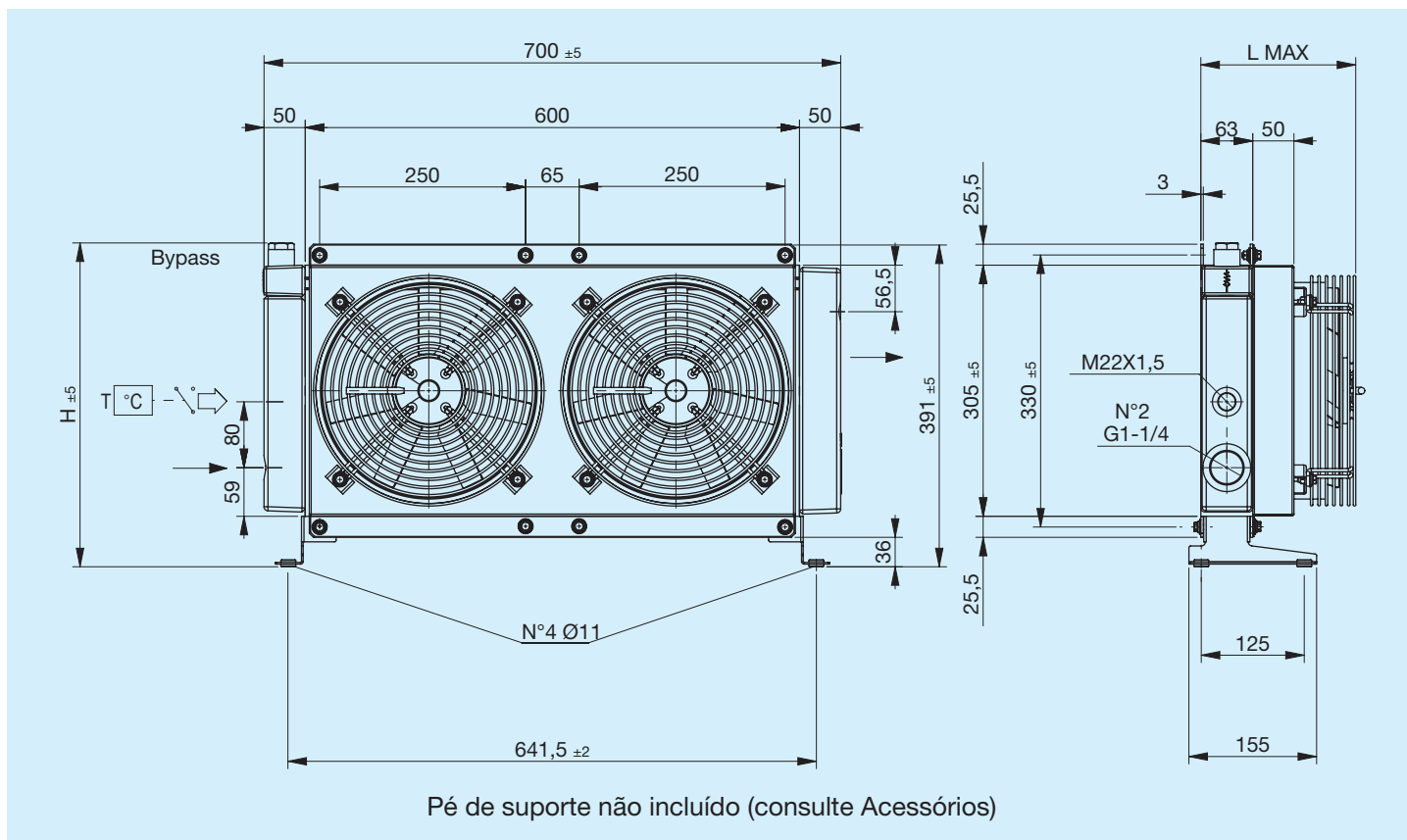


## Válvula bypass



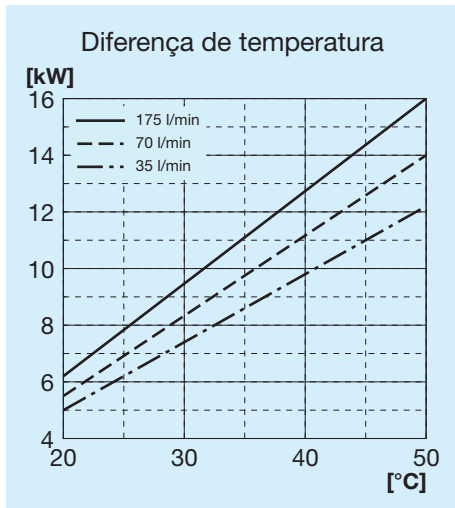
## Legenda

A48	Tipo de permutador
2E	2 Ventiladores Elétricos
A	Aspirante
S	Soprador
AP	Aspirante potencializado
SP	Soprador potencializado
AX	Aspirante superpotencializado
SX	Soprador supertencializado
12V	Tensão do ventilador elétrico
24V	Tensão do ventilador elétrico
T15 VT	Válvula bypass termostática 3 bar 60°C
T15 VNR	Válvula bypass de pressão 4,5 bar

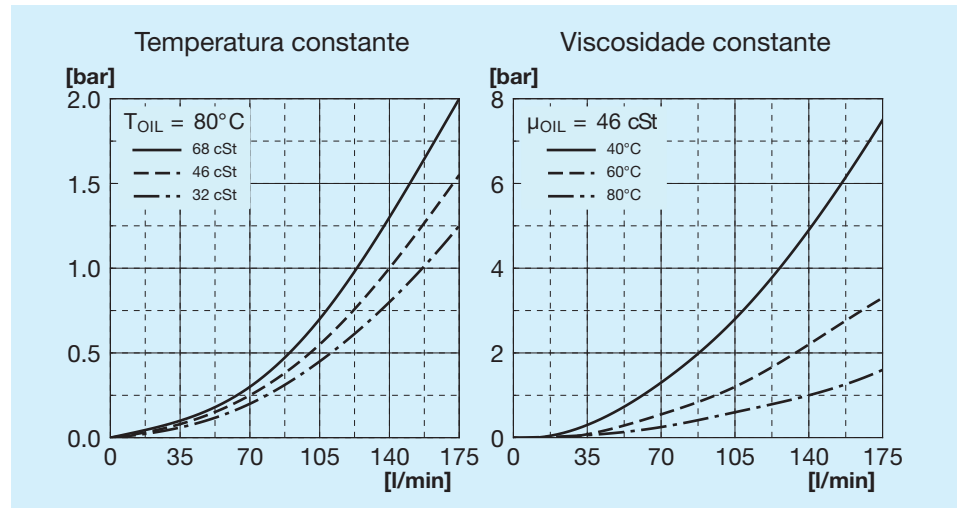


Código	Descrição	Ventila- dor mm	Potência W	Fre- quência Hz	Velocida- de min <sup>-1</sup>	Proteção IP	L Máx mm	H mm	Massa Kg	Capaci- dade l
FR633213131	A48 2EA 230V bypass T15 V.T. 3 bar 60°C	2X250	150	50 60	2450 2600	44	188	391	14	3.2
FR633213132	A48 2ES 230V bypass T15 V.T. 3 bar 60°C	2X250	150	50 60	2450 2600	44	188	391	14	3.2
FR633211031	A48 2EA 230V bypass T15 VNR 4.5 bar	2X250	150	50 60	2450 2600	44	188	375	14	3.2
FR633211032	A48 2ES 230V bypass T15 VNR 4.5 bar	2X250	150	50 60	2450 2600	44	188	375	14	3.2
FR633213121	A48 2EA 400V bypass T15 V.T. 3 bar 60°C	2X250	140	50 60	2500 2650	44	188	391	14	3.2
FR633213122	A48 2ES 400V bypass T15 V.T. 3 bar 60°C	2X250	140	50 60	2500 2650	44	188	391	14	3.2
FR633211021	A48 2EA 400V bypass T15 VNR 4.5 bar	2X250	140	50 60	2500 2650	44	188	375	14	3.2
FR633211022	A48 2ES 400V bypass T15 VNR 4.5 bar	2X250	140	50 60	2500 2650	44	188	375	14	3.2
FR633210031	A48 2EA 230V	2X250	150	50 60	2450 2600	44	188	391	14	3.2
FR633210032	A48 2ES 230V	2X250	150	50 60	2450 2600	44	188	391	14	3.2
FR633210021	A48 2EA 400V	2X250	140	50 60	2500 2650	44	188	391	14	3.2
FR633210022	A48 2ES 400V	2X250	140	50 60	2500 2650	44	188	391	14	3.2

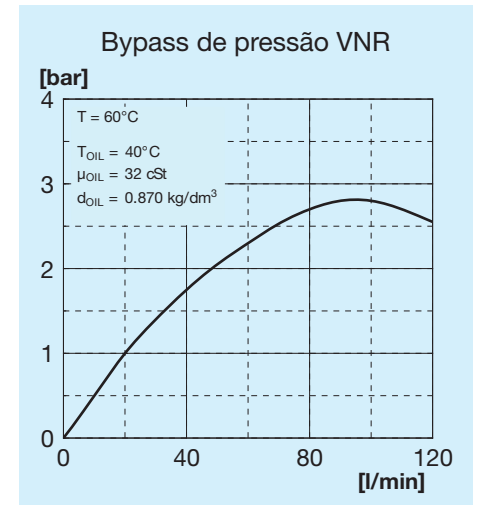
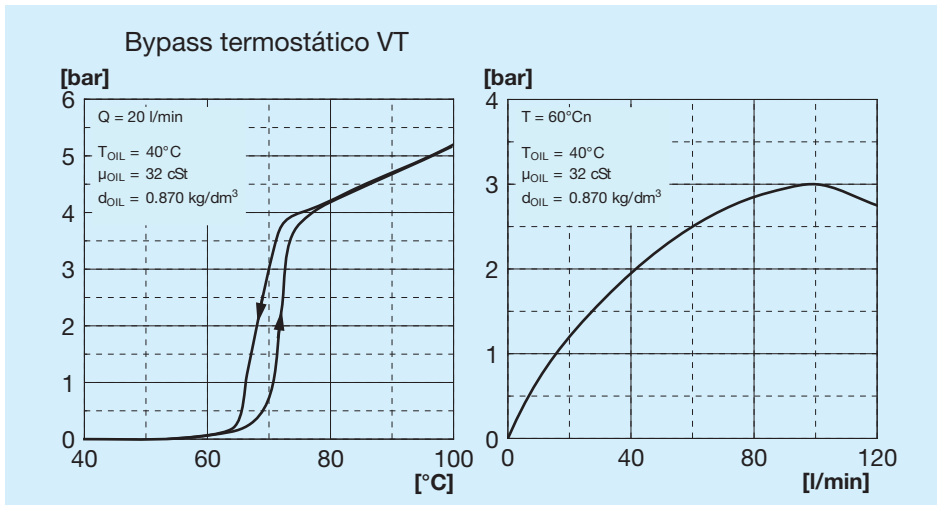
## Potência térmica



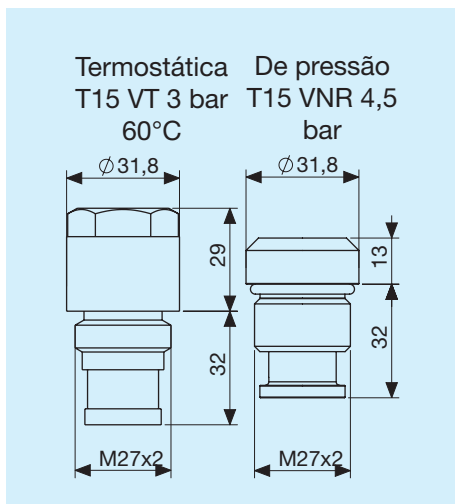
## Perda de carga passagem no radiador



## Perda de carga passagem bypass

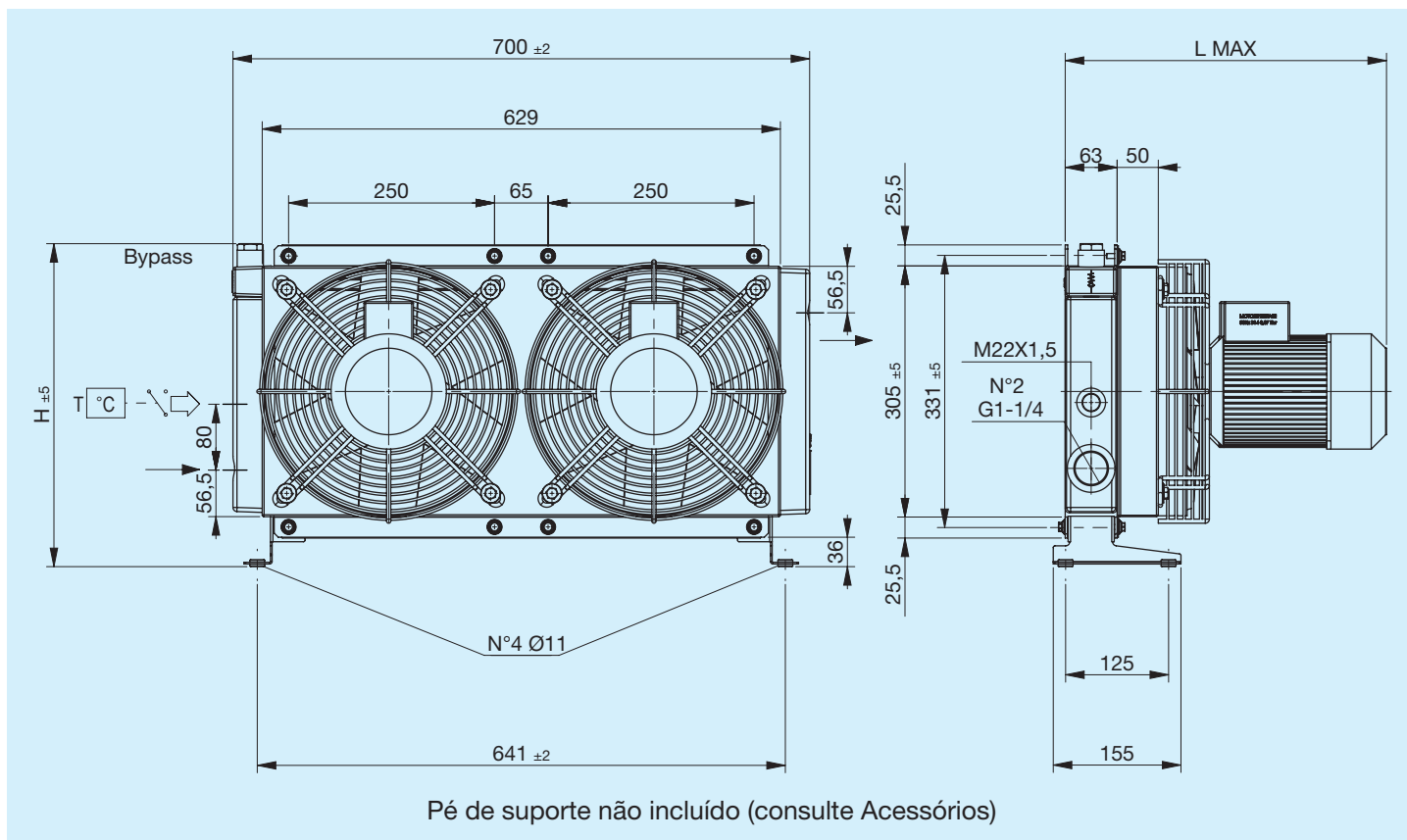


## Válvula bypass



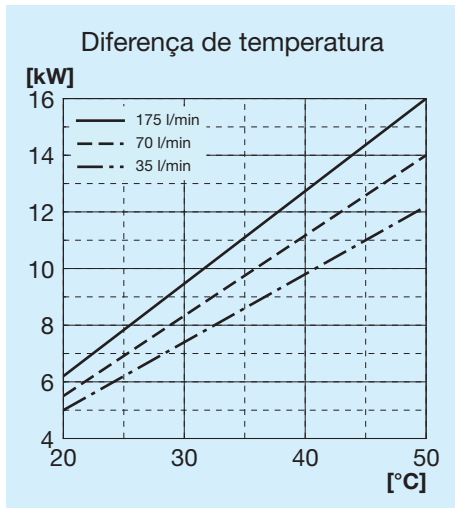
## Legenda

A48	Tipo de permutador
2E	2 Ventiladores Elétricos
A	Aspirante
S	Soprador
230V	Tensão do ventilador elétrico
400V	Tensão do ventilador elétrico
T15 VT	Válvula bypass termostática 3 bar 60°C
T15 VNR	Válvula bypass de pressão 4,5 bar

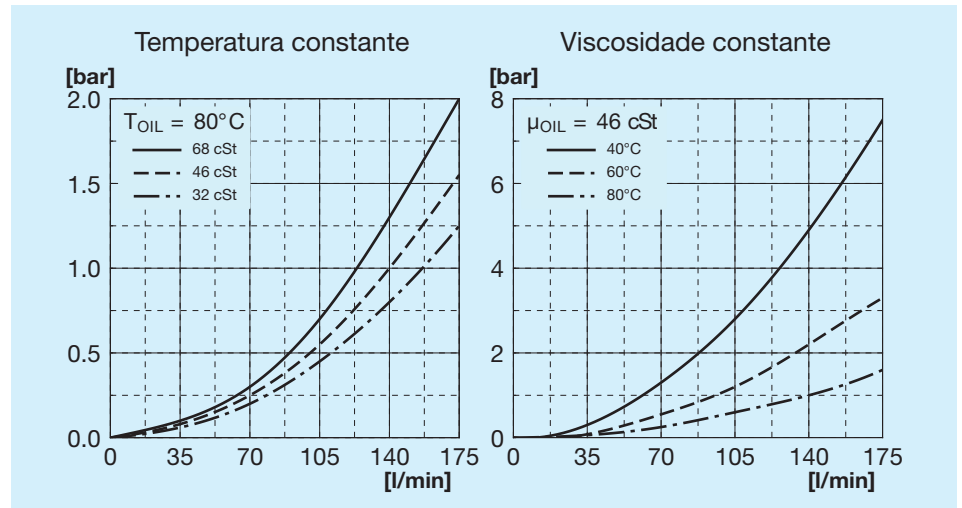


Código	Descrição	Ventila- dor mm	Potência W	Fre- quência Hz	Velocida- de de min <sup>-1</sup>	Proteção IP	L Máx mm	H mm	Massa Kg	Capaci- dade l
FR633213141	A48 2EA 230V-B14 bypass T15 V.T. 3 bar 60°C	2X290	370	50	2790	65	390	391	23	3.2
FR633213142	A48 2ES 230V-B14 bypass T15 V.T. 3 bar 60°C	2X290	370	50	2790	65	390	391	23	3.2
FR633211041	A48 2EA 230V-B14 bypass T15 VNR 4,5 bar	2X290	370	50	2790	65	390	375	23	3.2
FR633211042	A48 2ES 230V-B14 bypass T15 VNR 4,5 bar	2X290	370	50	2790	65	390	375	23	3.2
FR633213151	A48 2EA 400V-B14 bypass T15 V.T. 3 bar 60°C	2X290	370	50	2790	65	390	391	23	3.2
FR633213152	A48 2ES 400V-B14 bypass T15 V.T. 3 bar 60°C	2X290	370	50	2790	65	390	391	23	3.2
FR633211051	A48 2EA 400V-B14 bypass T15 VNR 4,5 bar	2X290	370	50	2790	65	390	375	23	3.2
FR633211052	A48 2ES 400V-B14 bypass T15 VNR 4,5 bar	2X290	370	50	2790	65	390	375	23	3.2
FR633210041	A48 2EA 230V-B14	2X290	370	50	2790	65	390	391	23	3.2
FR633210042	A48 2ES 230V-B14	2X290	370	50	2790	65	390	391	23	3.2
FR633210051	A48 2EA 400V-B14	2X290	370	50	2790	65	390	391	23	3.2
FR633210052	A48 2ES 400V-B14	2X290	370	50	2790	65	390	391	23	3.2

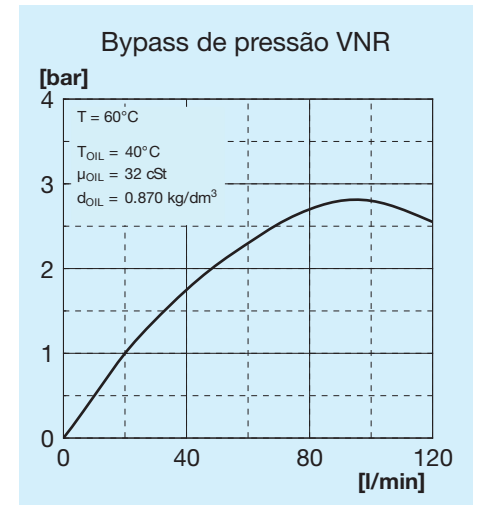
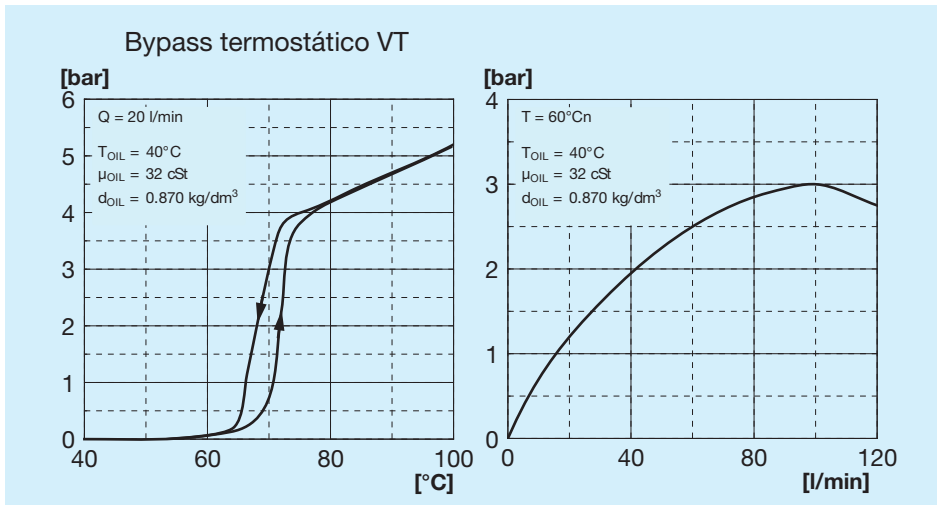
## Potência térmica



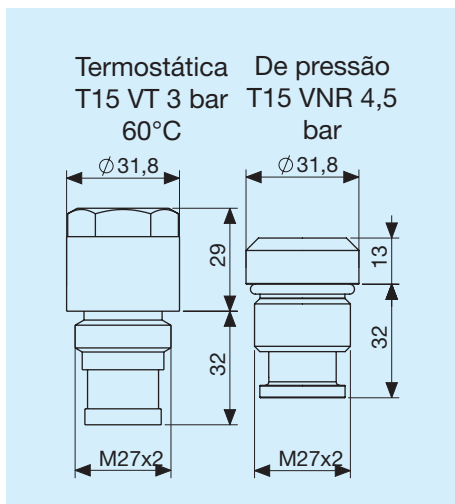
## Perda de carga passagem no radiador



## Perda de carga passagem bypass

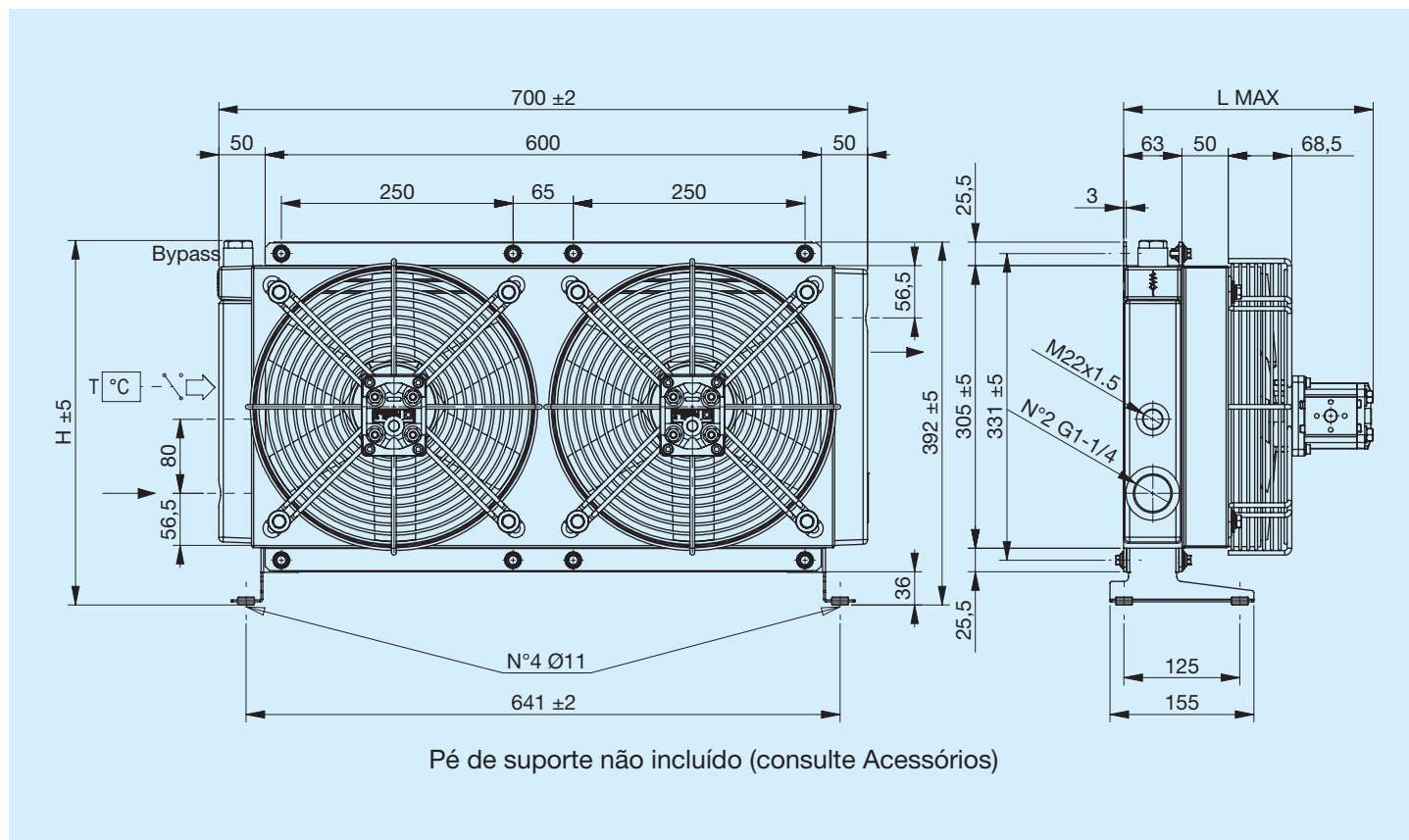


## Válvula bypass



## Legenda

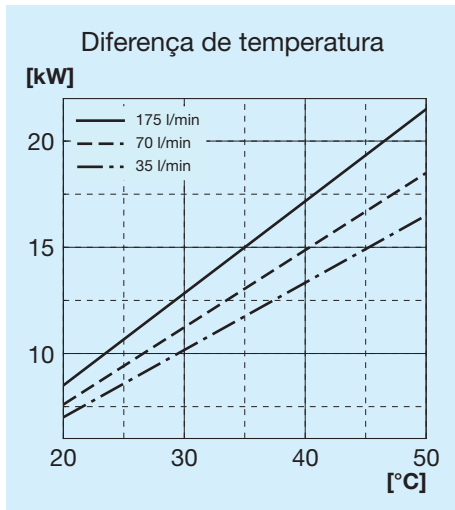
A48	Tipo de permutador
2E	2 Ventiladores Elétricos
A	Aspirante
S	Soprador
230V B14	Tensão do ventilador elétrico
400V B14	Tensão do ventilador elétrico
T15 VT	Válvula bypass termostática 3 bar 60°C
T15 VNR	Válvula bypass de pressão 4,5 bar



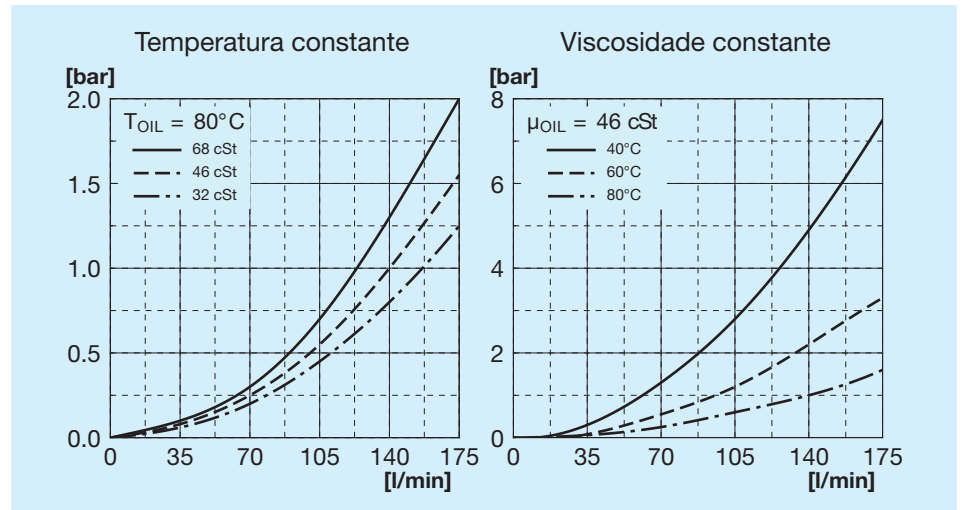
Código	Descrição	Ventila- dor mm	Cilindra- da do motor cm <sup>3</sup>	L Máx mm	H mm	Massa Kg	Capaci- dade l
FR634213103	A48 IA MOT.HIDR. GR1 bypass T15 V.T. 3 bar 60°C	2X290	6	271	391	19	3.2
FR634213104	A48 IS MOT.HIDR. GR1 bypass T15 V.T. 3 bar 60°C	2X290	6	271	391	19	3.2
FR634211003	A48 IA MOT.HIDR. GR1 bypass T15 VNR 4.5 bar	2X290	6	271	375	19	3.2
FR634211004	A48 IS MOT.HIDR. GR1 bypass T15 VNR 4.5 bar	2X290	6	271	375	19	3.2
FR634210003	A48 IA MOT.HIDR. GR1	2X290	6	271	391	19	3.2
FR634210004	A48 IS MOT.HIDR.GR1	2X290	6	271	391	19	3.2



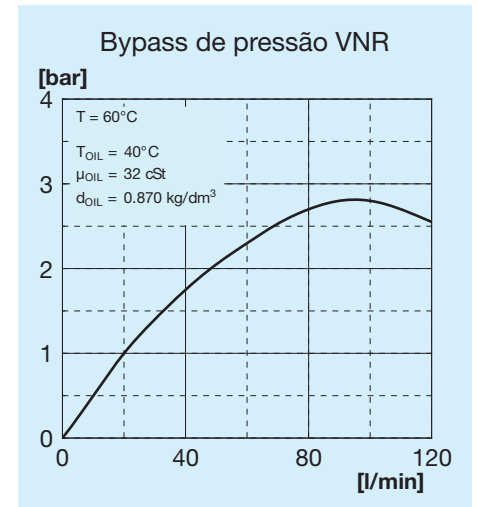
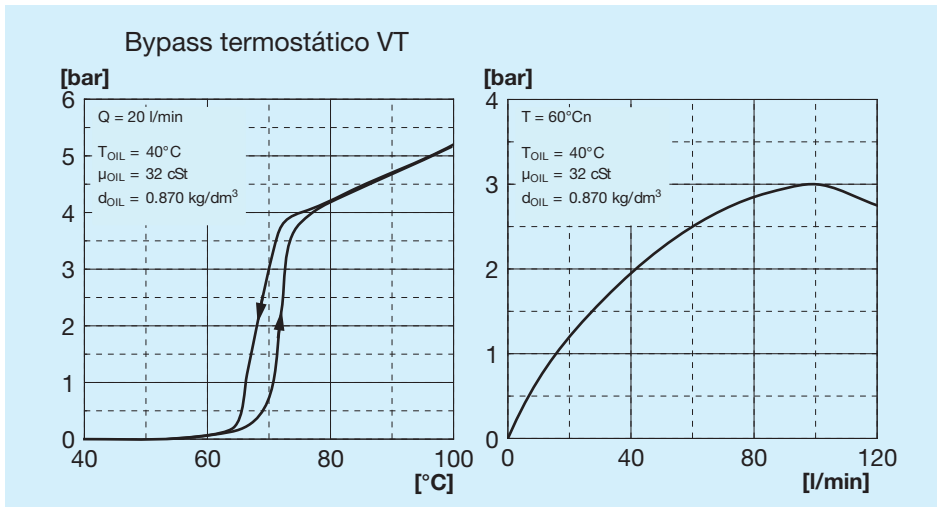
## Potência térmica



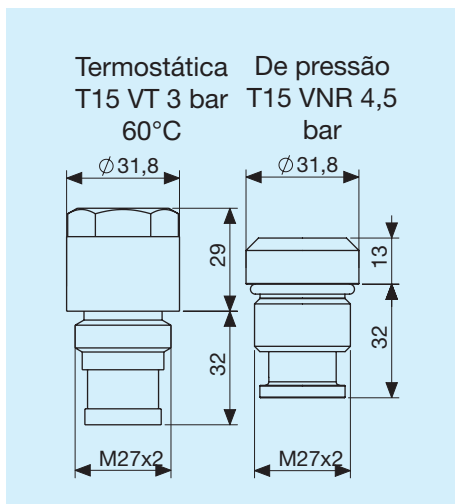
## Perda de carga passagem no radiador



## Perda de carga passagem bypass



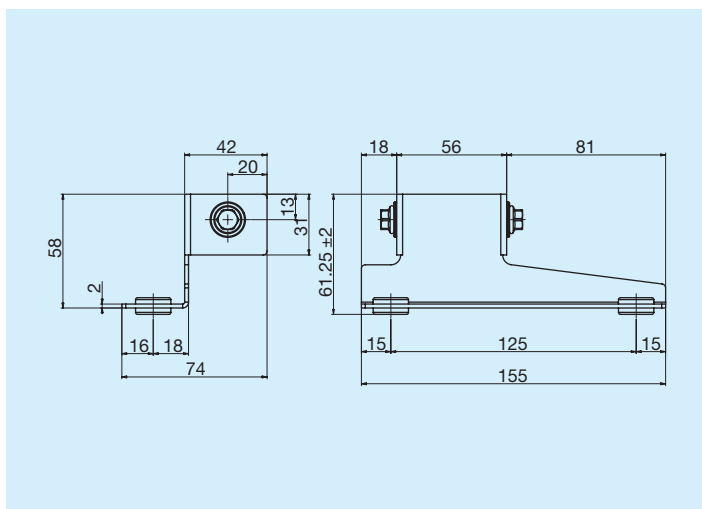
## Válvula bypass



## Legenda

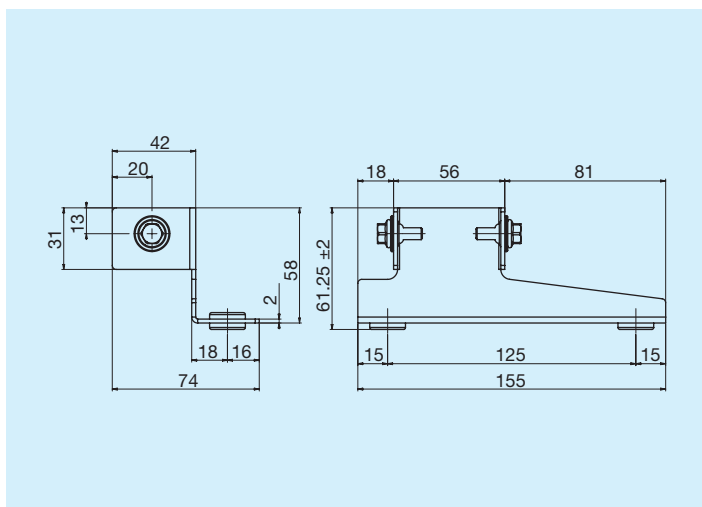
A48	Tipo de permutador
IA	Hidráulico Aspirante
IS	Hidráulico Soprador
PRED.	Com suporte do motor
MOT. HIDR.	Com motor com suporte integrado
GR1	Grupo 1
GR2	Grupo 2
T15 VT	Válvula bypass termostática 3 bar 60°C
T15 VNR	Válvula bypass de pressão 4,5 bar

## Pé de suporte esquerdo



Código

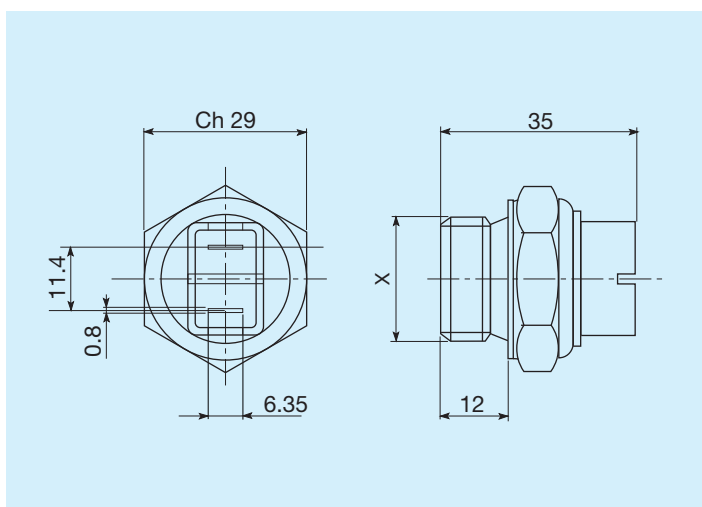
Pé de suporte esquerdo FR290000011R



Código

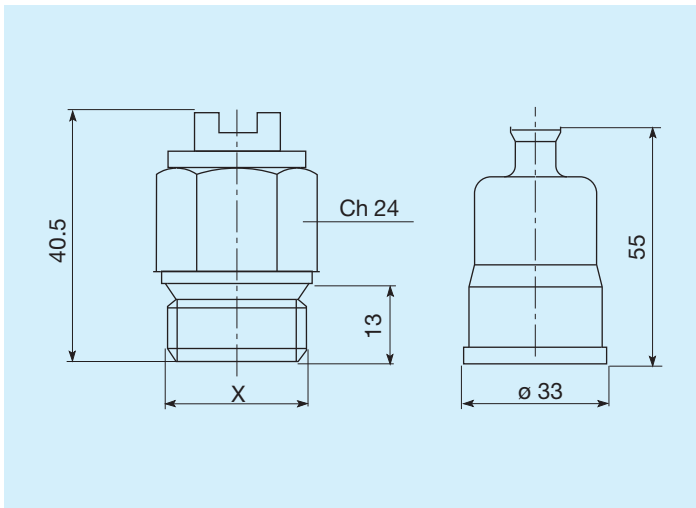
Pé de suporte direito FR290000012R

## Termostato



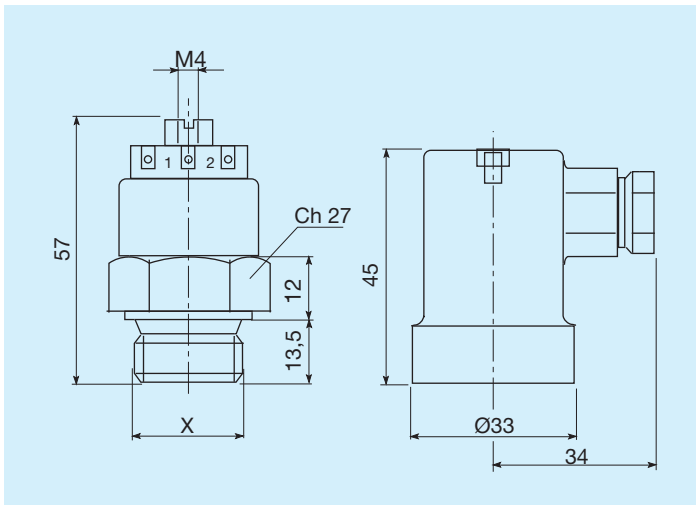
Temperaturas de intervenção C°	Roscagem	Código
45 - 35	M22x1,5	FR361104535R
60 - 50	M22x1,5	FR361106050R
80 - 70	M22x1,5	FR361108070R
82 - 68	M22x1,5	FR361108268R
85 - 76	M22x1,5	FR361108576R

## Termostatos protegidos IP54



Temperaturas de intervenção C°	Roscagem	Código
45 - 35	M22x1,5	FR361124535R
50 - 40	M22x1,5	FR361125040R
60 - 50	M22x1,5	FR361126050R
70 - 60	M22x1,5	FR361127060R
80 - 70	M22x1,5	FR361128070R

## Termostatos protegidos IP65



Temperaturas de intervenção C°	Roscagem	Código
45 - 35	M22x1,5	FR361154535R
47 - 36	M22x1,5	FR361155040R
60 - 50	M22x1,5	FR361176050R
80 - 70	M22x1,5	FR361158070R