

REVIS RE-PCM TH 9-14T IN R290



POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

REVIS RE-PCM TH 9-14T in R290



Re-PCM TH è una pompa di calore monoblocco a ciclo reversibile per il riscaldamento invernale, il raffrescamento e la produzione di acqua calda sanitaria.

Utilizza fluido refrigerante naturale R290 (propano), gas dalle eccezionali caratteristiche termodinamiche, con valore GWP =0,02, quindi perfettamente eco-compatibile e quasi privo di effetti climateranti.

Temperatura di mandata fino a 65°C.

Il compressore ermetico twin rotary con inverter è raffreddato tramite lo stesso ciclo termodinamico R290 mediante uno scambiatore rigenerativo, garantendo massima efficienza e capacità di modulazione della potenza.

Caratteristiche principali

- Fluido refrigerante naturale R290 (propano)
- Regolazione elettronica della potenza mediante inverter (riscaldamento/raffrescamento di serie)
- Batteria evaporante a 5 ranghi con rivestimento idrofilico
- Valvola di commutazione a 4 vie e due valvole di espansione elettroniche
- Possibili temperature di mandata fino a 65 °C
- Circuito idraulico con pompa di circolazione e valvola di ritegno integrata
- Massima sicurezza contro fughe accidentali di gas
- Riscaldamento integrato della vasca di raccolta condensa
- Predisposizione alimentazione elettrica per cavo scaldante tubazione di scarico condensa (230 V)
- Estetica moderna con struttura in lamiera senza spigoli, zincata e verniciata a polvere grigio scuro.
- Griglia con lamelle davanti al ventilatore
- Struttura sostenibile in EPP, materiale ecologico, al 30% già proveniente da riciclo precedente e 100% riciclabile
- Elevata potenza a bassa temperatura anche con basse temperature esterne; idonea per applicazioni monovalenti

Attacchi

Mandata e ritorno DN25 filetto maschio con tenuta piana

Scarico condensa DN40 per tubi a innesto

Circuito gas

Il circuito gas utilizza un compressore twin rotary con scambiatore rigenerativo, per ottenere massima efficienza e ampio campo di modulazione. L'inverter è raffreddato tramite il ciclo termodinamico R290 garantendo massimo recupero energetico e assenza di ventole che potrebbero guastarsi ed essere soggette a manutenzione.

Circuito idraulico

Il circuito idraulico offre massima sicurezza rispetto a eventuali fughe di gas R290. Comprende un degaser con valvola di sicurezza tarata a 3 bar e scarico convogliato all'esterno dell'apparecchio; un sensore di flusso in grado di rilevare pressione e presenza di bolle in mandata; valvola di non ritorno in ottone DZR (DeZincification Resistant) integrata.

Il circuito idraulico prevede disaccoppiamento delle vibrazioni per mezzo di tubi corrugati inox privo di materiali sintetici.

Il circolatore di serie offre un'ottima prevalenza residua per tutti i modelli. Valvola di ritegno integrata.

Alimentazione elettrica

Alimentazione trifase 400 V 50 Hz o monofase 230 V 50 Hz a seconda dei modelli, con fusibili di protezione di serie. Necessaria installazione di magnetotermico differenziale di tipo B.

Disponibile di serie alimentazione elettrica separata monofase per alimentazione di solo controller e circolatore mediante UPS (UPS non incluso in fornitura), per garantire la protezione antigelo della macchina in caso di blackout.

Comando remoto della pompa di calore

La regolazione della pompa di calore è integrata nella scheda di controllo interna per la gestione della temperatura di riscaldamento, raffrescamento e acqua calda sanitaria richiamate dalla regolazione esterna tramite connessione ModBus (BMS) compatibile con termoregolazione Revis Rev-8 inclusa di serie e composta da:

Rev-8

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- Modulo principale 8 IN 8 OUT
- Alimentatore 60 W 12 V
- Interfaccia OT per eventuale collegamento a caldaia
- Interfaccia ModBus
- Rev DOT- B interfaccia touch screen con collegamento WiFi

Prestazioni e conformità

- Classificazione energetica secondo ErP a bassa temperatura: classe A+++
- Classificazione energetica secondo ErP a media temperatura: classe A+++
- Direttive comunitarie, 2014/35/UE, 2014/30/UE, 2011/65/UE, 2012/19/UE, 2014/68/UE
- Norme UNI EN 12735-1
- Norma CEI EN 60335-1, CEI EN 60335-2-40, CEI EN 55014-1, CEI EN 55014-2
- Norma EN 50581
- EN 14276

Dimensioni (tutti i modelli)

LxPxH: 1450x700x1135 mm

Peso complessivo: 215 kg



	Descrizione	Frigorifera	Calorifera	Codice
	RE-PCM TH 9	8,6	9	1 03 03 002
	RE-PCM TH 12	11,8	12,4	1 03 03 003
	RE-PCM TH 12T	11,8	12,4	1 03 03 001
	RE-PCM TH 14T	11,8	14,1	1 03 03 004

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

DATI TECNICI POMPA DI CALORE RE-PCM TH

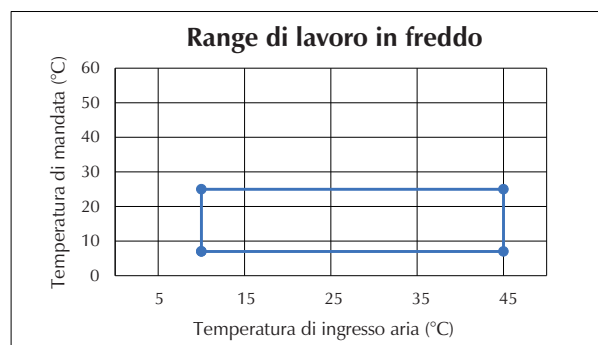
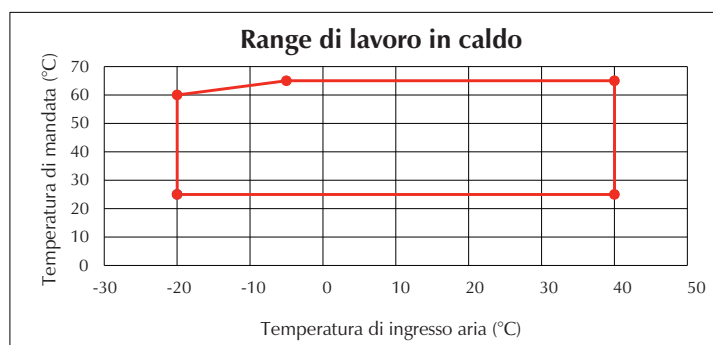
CARATTERISTICHE TECNICHE	UNITÀ	09	12	12T	14T
Dati di resa riscaldamento secondo EN 14511 (A7/W35, salto termico 5 K)					
Potenza nominale	kW	9,0	12,4	12,4	14,1
Potenza elettrica assorbita	kW	1,74	2,53	2,53	2,95
COP	-	5,16	4,90	4,90	4,78
Campo di lavoro della potenza (min-max)	kW	4,45 - 14,1	4,45 - 14,1	4,45 - 14,1	4,45 - 14,1
Dati di resa riscaldamento secondo EN 14511 (A7/W55, salto termico 8 K)					
Potenza nominale	kW	8,06	10,70	10,70	13,10
Potenza elettrica assorbita	kW	2,07	3,45	3,45	3,97
COP	-	3,40	3,10	3,10	3,30
Dati di resa riscaldamento secondo EN 14511 (A-7/W55, salto termico 8 K)					
Potenza massima	kW	6,10	10,2	10,2	10,30
Potenza elettrica assorbita	kW	2,42	4,32	4,32	4,32
COP	-	2,52	2,36	2,36	2,38
Dati di resa raffrescamento secondo EN 14511 (A35/W18, salto termico 5 K)					
Potenza nominale	kW	8,6	11,8	11,8	11,8
Potenza elettrica assorbita	kW	2,04	3,06	3,06	3,06
EER	-	4,20	3,86	3,86	3,86
Campo di lavoro della potenza (min-max)	kW	5,3 - 11,8	5,3 - 11,8	5,3 - 11,8	5,3 - 11,8
Dati di resa raffrescamento secondo EN 14511 (A35/W7, salto termico 5 K)					
Potenza nominale	kW	7,9	9,6	9,6	9,6
Potenza elettrica assorbita	kW	2,63	3,47	3,47	3,47
EER	-	3,00	2,77	2,77	2,77
Campo di lavoro della potenza (min-max)	kW	3,6 - 9,6	3,6 - 9,6	3,6 - 9,6	3,6 - 9,6
VALORI ELETTRICI	UNITÀ	09	12	12T	14T
Tensione nominale	V	230	230	400	400
Corrente di esercizio climatizzazione	A	15	20	10	10
Potenza elettrica climatizzazione	kW	3,5	4,6	5,6	5,6
Corrente di esercizio booster ACS	A	20	20	10	10
Potenza elettrica booster ACS	kW	4,6	4,6	5,6	5,6
Cos φ	-	0,95	0,95	0,95	0,95
Fusibile di protezione	A	25	25	3X16	3X16
Tipo di protezione differenziale	-	Tipo B	Tipo B	Tipo B	Tipo B
CIRCUITO FRIGORIFERO	UNITÀ	09	12	12T	14T
Refrigerante	-	R290	R290	R290	R290
• Gruppo di sicurezza integrato	-	sì	sì	sì	sì
• Volume di riempimento	kg	2,85	2,85	2,85	2,85
• Potenziale di riscaldamento globale (GWP)	-	0,02	0,02	0,02	0,02
• Equivalente CO ₂	kg	0,06	0,06	0,06	0,06
Compressore (ermetico)					
• Olio nel compressore	Tipo	Rotativo HAF68	Rotativo HAF68	Rotativo HAF68	Rotativo HAF68
• Quantità di olio nel compressore	ml	1150	1150	1150	1150

POMPE DI CALORE REVIS IN R290 **RE-PCM TH DA 9 A 14 KW**

DATI TECNICI POMPA DI CALORE RE-PCM TH

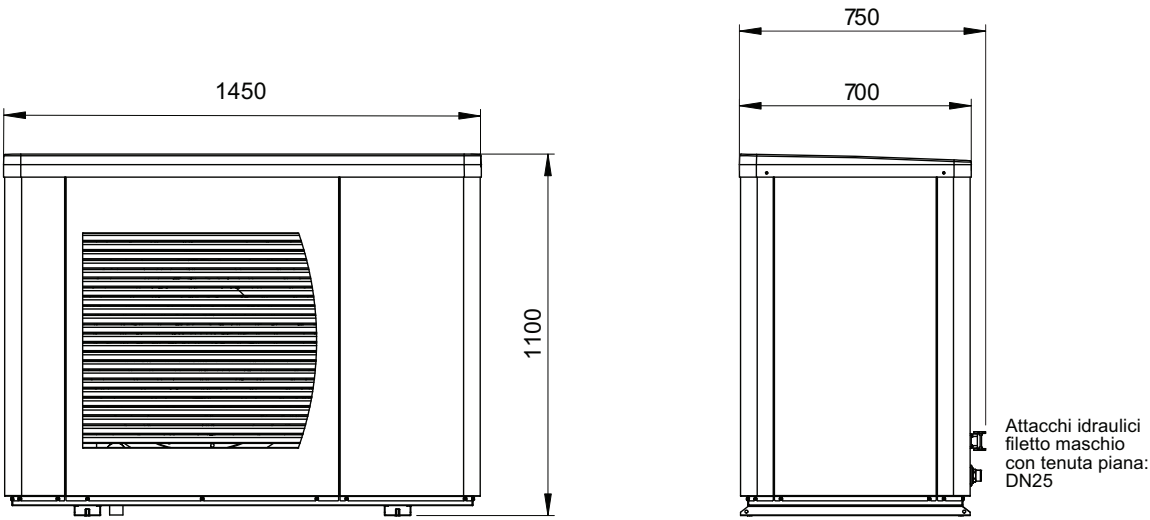
Pressione d'esercizio ammessa					
• Ps lato alta pressione	bar	31	31	31	31
• Ps lato bassa pressione	bar	8,52	8,52	8,52	8,52
• Ts min/max lato alta pressione	°C	-28 / +115	-28 / +115	-28 / +115	-28 / +115
• Ts min/max lato bassa pressione	°C	-28 / +25	-28 / +25	-28 / +25	-28 / +25
• PT	-	31	31	31	31
• Categoria PED	-	II	II	II	II
CIRCUITO ACQUA	UNITÀ	09	12	12T	14T
Pressione max lato acqua	bar	3,0	3,0	3,0	3,0
Pressione min lato acqua	bar	0,5	0,5	0,5	0,5
kv pompa di calore	m³h/bar ^{0,5}	3,5	3,5	3,5	3,5
Contenuto minimo acqua circuito idraulico	l/kW	10	10	10	10
DIMENSIONI D'INGOMBRO UNITÀ ESTERNA	UNITÀ	09	12	12T	14T
Lunghezza totale	mm	1450	1450	1450	1450
Larghezza totale	mm	700	700	700	700
Altezza totale	mm	1120	1120	1120	1120
PESO COMPLESSIVO	UNITÀ	09	12	12T	14T
Peso	kg	215	215	215	215
POTENZA SONORA DELL'UNITÀ ESTERNA ALLA POTENZIALITÀ UTILE (MISURAZIONE IN BASE A E N 12102/EN ISO 9614-2)	UNITÀ	09	12	12T	14T
Spettro di potenza sonora ponderato con A7/W55	dB(A)	56	59	59	61
• ErP					
CLASSE ENERGETICA SECONDO LA NORMATIVA UE N. 813/2013 RISCALDAMENTO (CONDIZIONI CLIMATICHE MEDIE)	UNITÀ	09	12	12T	14T
• Utilizzo a bassa temperatura (W35)		A+++	A+++	A+++	A+++
• Utilizzo a media temperatura (W55)		A+++	A+++	A+++	A+++

RANGE DI LAVORO

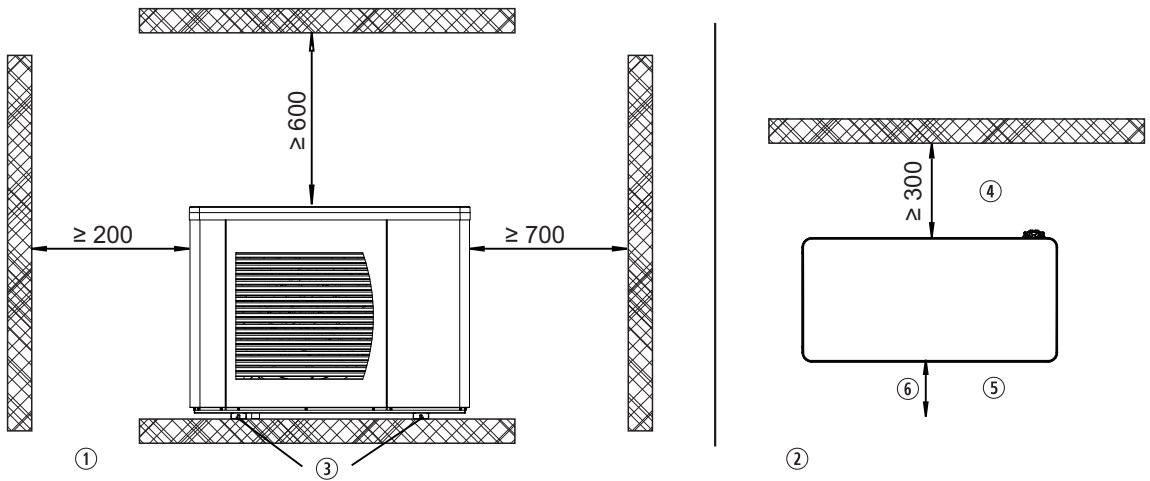


POMPE DI CALORE REVIS IN R290
RE-PCM TH DA 9 A 14 KW

DIMENSIONALE POMPA DI CALORE RE-PCM TH 09 / 14T



SPAZI MINIMI PER L'INSTALLAZIONE RE-PCM TH

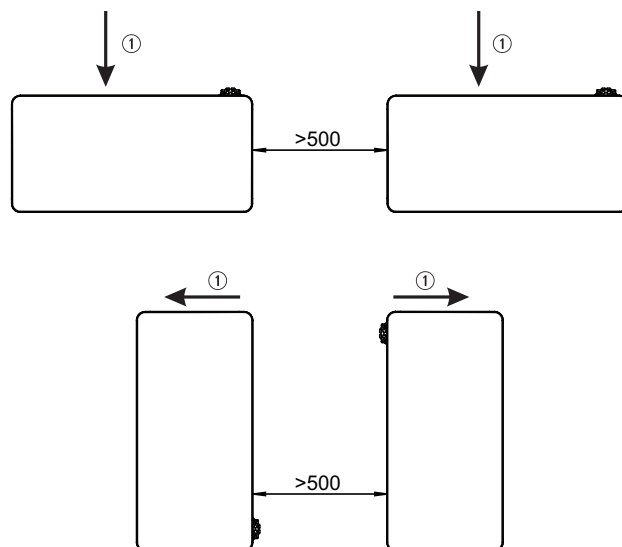


Simbolo	Descrizione
1	Vista frontale unità esterna
2	Vista dall'alto unità esterna
3	Piedini
4	Area di aspirazione
5	Area di uscita
6	>1000 mm da ostacoli che impediscono l'uscita dell'aria >3000 mm d a marciapiedi e terrazze

POMPE DI CALORE REVIS IN R290

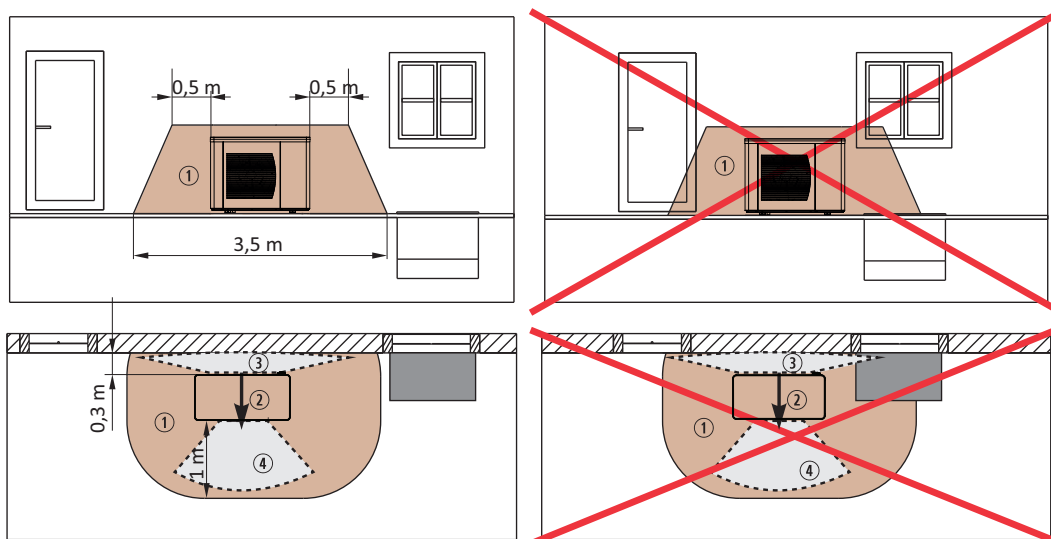
RE-PCM TH DA 9 A 14 KW

SPAZI MINIMI PER L'INSTALLAZIONE TRA PIÙ UNITÀ ESTERNE RE-PCM TH



Simbolo	Descrizione
1	Direzione aria

ZONA DI PROTEZIONE IN CASO DI INSTALLAZIONE DAVANTI AD UNA PARETE (ZONA IN CUI NON DEVONO ESSERE PRESENTI APERTURE)

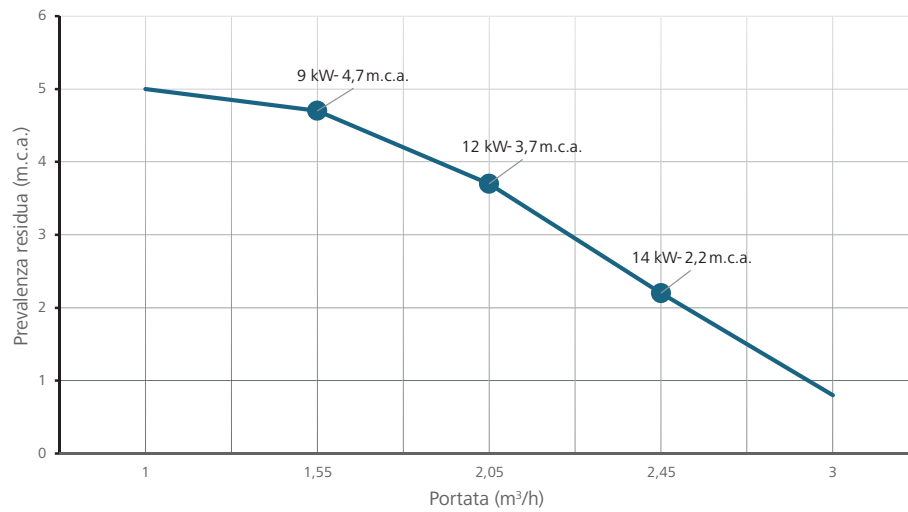


Simbolo	Descrizione
1	Zona di protezione
2	Direzione aria
3	Area di aspirazione
4	Area di uscita

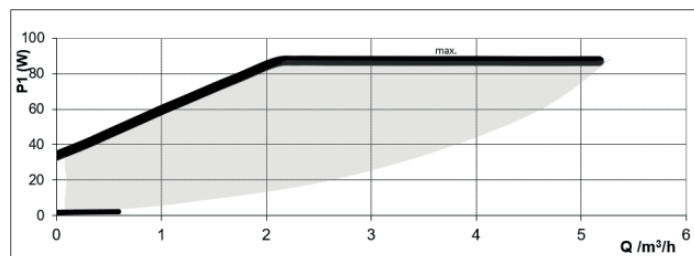
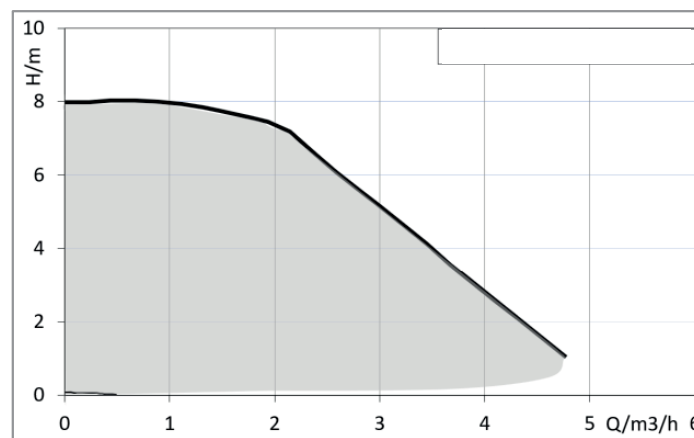
Per le disposizioni complete e maggiori dettagli si rimanda al bollettino tecnico e al manuale di installazione del prodotto.

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 kW

DIAGRAMMI PORTATA / PREVALENZA RESIDUA RE-PCM TH



CURVE CIRCOLATORI RE-PCM TH



POMPE DI CALORE REVIS IN R290 **RE-PCM TH DA 9 A 14 KW**

TABELLE DI RESA IN RISCALDAMENTO RE-PCM TH

Le tabelle riportano i valori di capacità, potenza assorbita ed efficienza per diverse temperature dell'aria esterna. I dati riportati sono calcolati secondo EN 14511:2022. Essi sono indicativi e possono essere soggetti a variazione.

DATI IN RISCALDAMENTO													
Modello RE-PCM TH	T aria esterna [°C]	Tout [°C]											
		35			45			55			65		
		Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]	Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]	Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]	Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]
09	-20	4,96	1,93	2,57	4,89	2,16	2,26	4,75	2,37	2,00	4,20	2,37	1,77
	-15	5,55	1,97	2,82	5,44	2,24	2,43	5,29	2,50	2,12	4,90	2,69	1,82
	-12	6,04	2,00	3,02	5,90	2,29	2,58	5,73	2,59	2,21	5,31	2,83	1,88
	-7	6,53	1,91	3,42	6,32	2,20	2,87	6,10	2,42	2,52	5,81	2,83	2,05
	-2	6,86	1,77	3,88	6,57	2,04	3,22	6,29	2,36	2,67	5,98	2,63	2,27
	0	7,30	1,77	4,12	6,96	2,05	3,40	6,64	2,37	2,80	6,30	2,72	2,32
	2	7,75	1,76	4,40	7,00	2,04	3,43	7,01	2,37	2,96	6,72	2,75	2,44
	7	9,00	1,75	5,16	8,53	2,03	4,20	8,06	2,37	3,40	7,68	2,56	3,00
	12	10,50	1,75	6,00	9,88	2,04	4,84	9,28	2,39	3,88	8,81	2,69	3,28
	15	11,50	1,77	6,50	10,80	2,06	5,24	10,10	2,41	4,19	9,56	2,72	3,51
12	20	13,20	1,81	7,29	12,40	2,11	5,88	11,60	2,46	4,72	10,70	2,56	4,18
	-20	7,56	3,06	2,47	7,48	3,44	2,17	7,26	3,75	1,94	7,39	4,02	1,84
	-15	8,71	3,17	2,75	8,57	3,51	2,44	8,36	4,05	2,06	8,12	4,41	1,84
	-12	9,49	3,38	2,81	9,30	3,70	2,51	9,05	4,19	2,16	9,00	4,55	1,98
	-7	10,80	3,24	3,33	10,50	3,76	2,79	10,20	4,32	2,36	9,59	4,51	2,13
	-2	9,50	2,51	3,78	9,13	2,90	3,15	8,77	3,36	2,61	8,68	3,74	2,32
	0	10,10	2,53	3,99	9,66	2,93	3,30	9,26	3,40	2,72	9,14	3,79	2,41
	2	10,70	2,53	4,23	10,20	2,93	3,48	9,78	3,42	2,86	9,65	3,82	2,53
	7	12,40	2,53	4,90	11,80	2,95	4,00	10,70	3,45	3,10	11,00	3,87	2,84
	12	14,50	2,58	5,62	13,72	3,00	4,57	12,90	3,50	3,69	12,60	3,95	3,19
14	15	15,90	2,63	6,05	14,88	3,04	4,89	14,00	3,55	3,94	13,70	4,00	3,43
	20	17,7	2,69	6,58	16,80	3,12	5,38	16,00	3,64	4,40	15,20	4,08	3,73
	-20	8,30	3,23	2,57	8,20	3,84	2,14	8,00	4,04	1,98	7,68	4,19	1,83
	-15	9,31	3,32	2,80	9,15	3,79	2,41	8,91	4,27	2,09	8,61	4,52	1,90
	-12	10,20	3,37	3,03	9,93	3,88	2,56	9,66	4,42	2,19	9,36	4,74	1,97
	-7	11,00	3,24	3,40	10,70	3,25	3,29	10,30	4,32	2,38	10,00	4,71	2,12
	-2	11,10	2,88	3,85	10,60	3,33	3,18	10,20	3,85	2,65	9,86	4,27	2,31
	0	11,80	2,90	4,07	11,30	3,36	3,36	10,30	4,08	2,52	10,40	4,33	2,40
	2	12,10	2,90	4,17	11,90	3,37	3,53	11,40	3,91	2,92	10,90	4,37	2,49
	7	14,10	2,92	4,83	13,80	3,40	4,06	13,10	3,97	3,30	12,50	4,44	2,82
	12	16,90	2,99	5,65	15,90	3,48	4,57	15,00	4,05	3,70	14,30	4,54	3,15
	15	18,10	3,04	5,95	17,20	3,53	4,87	16,30	4,12	3,96	15,50	4,61	3,36
	20	19,30	3,10	6,23	19,00	3,60	5,28	18,00	4,22	4,27	17,30	4,70	3,68

TABELLE DI RESA IN RISCALDAMENTO ALLA MINIMA POTENZA

DATI IN RISCALDAMENTO													
Modello RE-PCM TH	T aria esterna [°C]	Tout [°C]											
		35			45			55			65		
		Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]	Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]	Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]	Potenza termica [kW]	Potenza assorbita [kW]	COP [W/W]
09 / 12 / 14	-20	2,20	0,91	2,42	2,15	1,03	2,09	2,07	1,14	1,82	1,54	1,21	1,27
	-15	2,48	0,93	2,67	2,40	1,06	2,26	2,32	1,19	1,95	1,79	1,29	1,70
	-12	2,71	0,93	2,91	2,62	1,13	2,32	2,53	1,21	2,09	1,99	1,34	1,78
	-7	3,18	0,95	3,35	3,04	1,10	2,76	2,90	1,25	2,32	2,75	1,40	1,96
	-2	3,72	0,96	3,88	3,52	1,11	3,17	3,34	1,27	2,63	3,15	1,45	2,17
	0	3,96	0,94	4,21	3,73	1,09	3,42	3,54	1,26	2,81	3,20	1,44	2,22
	2	4,22	0,91	4,64	3,96	1,07	3,70	3,74	1,25	2,99	3,39	1,43	2,37
	7	4,45	0,94	4,73	4,21	1,06	3,97	3,98	1,22	3,26	3,60	1,40	2,57
	12	5,10	0,89	5,73	4,72	1,02	4,63	4,38	1,21	3,62	3,95	1,39	2,84
	15	5,50	0,89	6,18	5,25	1,03	5,10	4,85	1,21	4,01	4,35	1,39	3,13
	20	6,30	0,89	7,08	5,95	1,05	5,67	5,62	1,22	4,61	5,20	1,36	3,82

POMPE DI CALORE REVIS IN R290 **RE-PCM TH DA 9 A 14 KW**

TABELLE DI RESA IN RAFFRESCAMENTO RE-PCM TH

Le tabelle riportano i valori di capacità, potenza assorbita ed efficienza per diverse temperature dell'aria esterna. I dati riportati sono calcolati secondo EN 14511:2022. Essi sono indicativi e possono essere soggetti a variazione.

DATI IN RAFFRESCAMENTO																
Modello RE-PCM TH	T aria esterna [°C]	Tout [°C]														
		20			25			30			35			40		
		Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]
09	7	8,38	1,95	4,30	8,12	2,05	3,96	7,80	2,20	3,55	7,46	2,38	3,13	7,06	2,58	2,74
	10	8,31	1,73	4,80	8,06	1,83	4,40	7,75	1,97	3,93	7,41	2,13	3,48	7,02	2,31	3,04
	13	9,17	1,78	5,15	8,90	1,88	4,73	8,56	2,02	4,24	8,19	2,18	3,76	7,76	2,35	3,30
	15	8,60	1,55	5,55	8,41	1,64	5,13	8,10	1,77	4,58	7,76	1,92	4,04	7,36	2,07	3,56
	18	9,57	1,59	6,02	9,24	1,69	5,47	8,91	1,81	4,92	8,54	1,96	4,36	8,10	2,12	3,82
	22	10,70	1,66	6,45	10,40	1,75	5,94	10,10	1,88	5,37	9,67	2,03	4,76	9,18	2,18	4,21
12	7	11,30	2,91	3,88	10,90	3,07	3,55	10,50	3,26	3,22	9,60	3,26	2,94	9,51	3,77	2,52
	10	11,50	2,69	4,28	11,20	2,82	3,97	10,70	3,00	3,57	11,10	3,58	3,10	9,72	3,46	2,81
	13	12,70	2,75	4,62	12,30	2,89	4,26	11,80	3,82	3,09	11,40	3,30	3,45	10,70	3,54	3,02
	15	13,50	2,81	4,80	13,10	2,96	4,43	12,60	3,15	4,00	12,00	3,38	3,55	11,50	3,58	3,21
	18	13,40	2,50	5,36	13,00	2,64	4,92	12,50	2,80	4,46	11,80	2,93	4,03	11,40	3,20	3,56
	22	15,00	2,61	5,75	14,60	2,74	5,33	14,10	2,91	4,85	13,60	3,11	4,37	12,80	3,32	3,86
14	7	11,30	2,91	3,88	10,90	3,07	3,55	10,50	3,26	3,22	9,60	3,26	2,94	9,51	3,77	2,52
	10	11,50	2,69	4,28	11,20	2,82	3,97	10,70	3,00	3,57	11,10	3,58	3,10	9,72	3,46	2,81
	13	12,70	2,75	4,62	12,30	2,89	4,26	11,80	3,82	3,09	11,40	3,30	3,45	10,70	3,54	3,02
	15	13,50	2,81	4,80	13,10	2,96	4,43	12,60	3,15	4,00	12,00	3,38	3,55	11,50	3,58	3,21
	18	13,40	2,50	5,36	13,00	2,64	4,92	12,50	2,80	4,46	11,80	2,93	4,03	11,40	3,20	3,56
	22	15,00	2,61	5,75	14,60	2,74	5,33	14,10	2,91	4,85	13,60	3,11	4,37	12,80	3,32	3,86

TABELLE DI RESA IN RAFFRESCAMENTO ALLA MINIMA POTENZA

DATI IN RAFFRESCAMENTO																
Modello RE-PCM TH	T aria esterna [°C]	Tout [°C]														
		20			25			30			35			40		
		Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]	Potenza frigorifera [kW]	Potenza assorbita [kW]	EER [W/W]
09 / 12 / 14	7	4,46	0,81	5,51	4,25	0,86	4,94	3,97	0,94	4,22	3,70	1,04	3,56	3,48	1,15	3,03
	10	4,92	0,83	5,93	4,66	0,88	5,30	4,39	0,96	4,57	4,12	1,06	3,89	3,85	1,18	3,26
	13	5,40	0,85	6,35	5,17	0,91	5,68	4,87	0,98	4,97	4,58	1,08	4,24	4,31	1,20	3,59
	15	5,77	0,86	6,71	5,48	0,92	5,96	5,19	1,00	5,19	4,90	1,10	4,45	4,68	1,21	3,87
	18	6,28	0,89	7,06	5,96	0,95	6,27	5,65	1,03	5,49	5,30	1,12	4,73	5,12	1,24	4,13
	22	7,03	0,93	7,56	6,65	0,98	6,79	6,31	1,06	5,95	6,01	1,16	5,18	5,71	1,27	4,50

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

RE-PCM TH 9 KW 35°C - CALCULATION OF ENERGY EFFICIENCY - AVERAGE CLIMATE

Product reference		Reference conditions		
Manufacturer	e2Tech	Climate	average	
Product reference	RE-PCM TH 9	Tdesignh	-10	°C
Type of heat pump	outdoor air-to-water	Prated	8	kW
Operating mode	reversible	Tbiv	-7	°C
Temperature application	35°C	TOL	-10	°C
Water ow	variable	HHE	2066	hours
Water outlet temperature	variable	QH	17430	kWh
Capacity control	variable	Fossil fuel backup efficiency	-	%
Backup heater	electricity			

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	88	7,46	29 / 34	7,46	3,45	1,000	1,00	3,46
B	2	54	4,54	25 / 30	4,54	4,99	1,000	1,00	4,31
C	7	35	2,92	22 / 27	4,13	6,62	0,900	0,71	4,99
D	12	15	1,3	19 / 24	4,79	6,5	0,900	0,27	6,57
E(TOL) or E(Tdesignh)	-10	100	8,44	30 / 35	7,46	3,13	1,000	1,00	3,13
F(Tbiv)	-7	88	7,46	29 / 34	6,88	3,45	1,000	1,00	3,46

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	178	60	11
Stand by	0	25	0
Off mode	0	20	0
Crankcase heater	178	1	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
5,07	5,06	199,4	3444

RE-PCM TH 9 KW 35°C - CALCULATION OF ENERGY EFFICIENCY - WARMER CLIMATE

Product reference		Reference conditions		
Manufacturer	e2Tech	Climate	warmer	
Product reference	RE-PCM TH 9	Tdesignh	2	°C
Type of heat pump	outdoor air-to-water	Prated	7	kW
Operating mode	reversible	Tbiv	2	°C
Temperature application	35°C	TOL	2	°C
Water ow	variable	HHE	1336	hours
Water outlet temperature	variable	QH	9922	kWh
Capacity control	variable	Fossil fuel backup efficiency	-	%
Backup heater	electricity			

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	-	-	-	-	-	-	-	-
B	2	100	7,43	30 / 35	7,43	4,53	1,000	1,00	4,53
C	7	64	4,77	26 / 31	4,77	6,5	1,000	1,00	6,48
D	12	29	2,12	21 / 26	7,76	7,9	0,900	0,45	7,11
E(TOL) or E(Tdesignh)	2	100	7,43	30 / 35	7,43	4,53	1,000	1,00	4,53
F(Tbiv)	2	100	7,43	28 / 33	7,43	4,53	1,000	1,00	4,53

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	754	60	45
Stand by	0	25	0
Off mode	0	20	0
Crankcase heater	754	1	1

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
6,62	6,49	256,8	1528

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

RE-PCM TH 9 KW 35°C - CALCULATION OF ENERGY EFFICIENCY - COLDER CLIMATE

Product reference		Reference conditions		
Manufacturer	e2Tech	Climate	colder	
Product reference	RE-PCM TH 9	Tdesignh	-22	°C
Type of heat pump	outdoor air-to-water	Prated	7	kW
Operating mode	reversible	Tbiv	-15	°C
Temperature application	35°C	TOL	22	°C
Water ow	variable	HHE	2465	hours
Water outlet temperature	variable	QH	18094	kWh
Capacity control	variable	Fossil fuel backup efficiency	-	%
Backup heater	electricity			

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	61	4,44	25 / 30	4,44	3,61	1,000	1,00	3,61
B	2	37	2,7	22 / 27	3,37	4,94	0,900	0,84	4,97
C	7	24	1,74	20 / 25	4,14	6,05	0,900	0,42	6,06
D	12	11	0,77	19 / 24	4,78	5,32	0,900	0,16	5,32
E(TOL) or E(Tdesignh)	-22	100	7,34	29 / 34	5,95	0,25	1,000	1,00	0,251
F(Tbiv)	-15	82	5,99	26 / 31	4,3	2,91	1,000	1,00	2,91

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	106	8,55	0,906
Stand by	0	22	0,000
Off mode	0	22	0,000
Crackcase heater	106	0	0,000

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
4,05	4,05	158,9	4471

RE-PCM TH 9 KW 55°C - CALCULATION OF ENERGY EFFICIENCY - AVERAGE CLIMATE

Product reference		Reference conditions		
Manufacturer	e2Tech	Climate	average	
Product reference	RE-PCM TH 9	Tdesignh	-10	°C
Type of heat pump	outdoor air-to-water	Prated	8	kW
Operating mode	reversible	Tbiv	-7	°C
Temperature application	55°C	TOL	-20	°C
Water ow	variable	HHE	2066	hours
Water outlet temperature	variable	QH	16214	kWh
Capacity control	variable	Fossil fuel backup efficiency	-	%
Backup heater	electricity			

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	88	6,94	44 / 52	6,94	2,54	1,000	1,00	2,54
B	2	54	4,23	34 / 42	4,22	3,98	1,000	1,00	3,98
C	7	35	2,72	28 / 36	3,89	5,41	0,900	0,70	5,4
D	12	15	1,21	27 / 35	4,57	5,49	0,900	0,26	5,46
E(TOL) or E(Tdesignh)	-10	100	7,85	47 / 55	6,41	2,26	1,000	1,00	2,26
F(Tbiv)	-7	88	6,94	44 / 52	6,94	2,54	1,000	1,00	2,54

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	178	60	11
Stand by	0	25	0
Off mode	0	20	0
Crackcase heater	178	1	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
4,04	4,03	158,2	4024

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

RE-PCM TH 9 KW 55°C - CALCULATION OF ENERGY EFFICIENCY - WARMER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 9
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	warmer	
Tdesignh	2	°C
Prated	7	kW
Tbiv	2	°C
TOL	2	°C
HHE	1336	hours
QH	8869	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	-	-	-	-	-	-	-	-
B	2	100	6,64	47 / 55	6,64	3,06	1,000	1,00	3,05
C	7	64	4,27	38 / 46	4,27	4,8	1,000	1,00	4,82
D	12	29	1,9	26 / 34	4,49	5,81	0,42	0,9	5,78
E(TOL) or E(Tdesignh)	2	100	6,64	47 / 55	6,64	3,06	1,000	1,00	3,05
F(Tbiv)	2	100	6,64	47 / 55	6,64	3,06	1,000	1,00	3,05

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	754	8,55	6
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	754	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
5,10	5,03	198,3	1762

RE-PCM TH 9 KW 55°C - CALCULATION OF ENERGY EFFICIENCY - COLDER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 9
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	colder	
Tdesignh	-22	°C
Prated	7	kW
Tbiv	15	°C
TOL	-22	°C
HHE	2465	hours
QH	17327	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	61	4,25	36 / 44	4,25	2,87	1,000	1,00	2,87
B	2	37	2,59	29 / 37	3,16	4,04	0,900	0,86	4,04
C	7	24	1,86	24 / 32	3,94	5,16	0,900	0,42	5,14
D	12	11	0,74	20 / 28	4,6	4,72	0,900	0,16	4,7
E(TOL) or E(Tdesignh)	-22	100	7,03	45 / 53	5,73	1,91	1,000	1,00	1,91
F(Tbiv)	-15	82	5,73	38 / 47	4,92	2,27	1,000	1,00	2,27

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	106	8,55	0,906
Stand by	0	22	0,000
Off mode	0	22	0,000
Crackcase heater	106	0	0,000

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
3,43	3,42	134	5060

POMPE DI CALORE REVIS IN R290

RE-PCM TH DA 9 A 14 KW

RE-PCM TH 12 / 12T KW 35°C - CALCULATION OF ENERGY EFFICIENCY - AVERAGE CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 12M / 12T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	35°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	average	
Tdesignh	-10	°C
Prated	13	kW
Tbiv	-7	°C
TOL	-10	°C
HHE	2066	hours
QH	27349	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	88	11,7	29 / 34	11,7	3,35	1,000	1,00	3,36
B	2	54	7,13	25 / 30	7,12	5,01	1,000	1,00	5,01
C	7	35	4,58	27 / 35	5,51	6,84	0,900	0,83	6,81
D	12	15	2,04	19 / 24	6,41	6,76	0,900	0,316	6,74
E(TOL) or E(Tdesignh)	-10	100	13,2	30 / 35	10,9	3,08	1,000	1,00	3,07
F(Tbiv)	-7	88	11,7	29 / 34	11,7	3,35	1,000	1,00	3,36

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	178	8,55	2
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	178	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
5,12	5,11	201,4	5353

RE-PCM TH 12 / 12T KW 35°C - CALCULATION OF ENERGY EFFICIENCY - WARMER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 12M / 12T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	35°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	warmer	
Tdesignh	2	°C
Prated	10	kW
Tbiv	2	°C
TOL	2	°C
HHE	1336	hours
QH	13627	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	-	-	-	-	-	-	-	-
B	2	100	10,2	30 / 35	10,2	3,82	1,000	1,00	3,83
C	7	64	6,56	26 / 31	6,55	4,92	1,000	1,00	4,93
D	12	29	2,91	21 / 26	4,16	6,65	0,900	0,7	6,7
E(TOL) or E(Tdesignh)	2	100	10,2	30 / 35	10,2	3,82	1,000	1,00	3,83
F(Tbiv)	2	100	10,2	28 / 33	10,2	3,82	1,000	1,00	3,83

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	754	8,55	6
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	754	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
5,64	5,58	220,1	2444

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

RE-PCM TH 12 / 12T KW 35°C - CALCULATION OF ENERGY EFFICIENCY - COLDER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 12M / 12T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	35°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	colder	
Tdesignh	-22	°C
Prated	10	kW
Tbiv	-15	°C
TOL	-15	°C
HHE	2465	hours
QH	25123	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	61	6,17	25 / 30	6,17	3,25	1,000	1,00	3,25
B	2	37	3,79	22 / 27	3,75	4,21	1,000	1,00	4,23
C	7	24	2,41	20 / 25	3,41	5,08	0,900	0,745	5,06
D	12	11	1,07	19 / 24	4,15	5,37	0,900	0,26	5,4
E(TOL) or E(Tdesignh)	-15	82	8,31	29 / 34	8,31	2,6	1,000	1,00	2,6
F(Tbiv)	-15	82	8,31	26 / 31	8,31	2,6	1,000	1,00	2,6

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	106	8,55	0,906
Stand by	0	22	0,000
Off mode	0	22	0,000
Crackcase heater	106	0	0,000

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
3,42	3,42	133,9	7340

RE-PCM TH 12 / 12T KW 55°C - CALCULATION OF ENERGY EFFICIENCY - AVERAGE CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 12M / 12T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	average	
Tdesignh	-10	°C
Prated	13	kW
Tbiv	-7	°C
TOL	-20	°C
HHE	2066	hours
QH	25984	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	88	11,1	44 / 52	11,1	2,49	1,000	1,00	2,5
B	2	54	6,77	34 / 42	6,77	4,01	1,000	1,00	4,01
C	7	35	4,35	29 / 36	5,21	5,68	0,900	0,835	5,7
D	12	15	1,93	27 / 30	6,11	5,77	0,910	0,3165	5,8
E(TOL) or E(Tdesignh)	-10	100	12,6	47 / 55	10,3	2,2	1,000	1,00	2,23
F(Tbiv)	-7	88	11,1	44 / 52	11,1	2,49	1,000	1,00	2,5

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	178	8,55	2
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	178	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
4,1	4,1	161,1	6334

POMPE DI CALORE REVIS IN R290

RE-PCM TH DA 9 A 14 KW

RE-PCM TH 12 / 12T KW 55°C - CALCULATION OF ENERGY EFFICIENCY - WARMER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 12M / 12T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	warmer	
Tdesignh	2	°C
Prated	9	kW
Tbiv	2	°C
TOL	2	°C
HHE	1336	hours
QH	12458	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	-	-	-	-	-	-	-	-
B	2	100	9,33	47 / 55	9,33	2,66	1,000	1,00	2,66
C	7	64	3,72	38 / 46	5,99	3,72	1,000	1,00	3,73
D	12	29	5,63	26 / 34	3,95	5,63	0,67	0,9	5,62
E(TOL) or E(Tdesignh)	2	100	9,33	47 / 55	9,33	2,66	1,000	1,00	2,66
F(Tbiv)	2	100	9,33	47 / 55	9,33	2,66	1,000	1,00	2,66

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	754	8,55	6
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	754	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
4,44	4,40	173,2	2828

RE-PCM TH 12 / 12T KW 55°C - CALCULATION OF ENERGY EFFICIENCY - COLDER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 12M / 12T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	colder	
Tdesignh	-22	°C
Prated	10	kW
Tbiv	-15	°C
TOL	-22	°C
HHE	2465	hours
QH	24456	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	61	6	36 / 44	6	2,64	1,000	1,00	2,64
B	2	37	3,66	29 / 37	3,65	3,61	1,000	1,00	3,61
C	7	24	2,35	24 / 32	3,27	4,4	0,900	0,76	4,42
D	12	11	1,04	20 / 28	4,02	4,89	0,900	0,26	4,85
E(TOL) or E(Tdesignh)	-22	100	9,92	45 / 53	6,61	1,78	1,000	1,00	1,78
F(Tbiv)	-15	82	8,09	38 / 47	8,09	2,07	1,000	1,00	2,08

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	106	8,55	0,906
Stand by	0	22	0,000
Off mode	0	22	0,000
Crackcase heater	106	0	0,000

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
3,11	3,11	121,3	7870

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

RE-PCM TH 14T KW 35°C - CALCULATION OF ENERGY EFFICIENCY - AVERAGE CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 14T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	35°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	average	
Tdesignh	-10	°C
Prated	14	kW
Tbiv	-7	°C
TOL	-10	°C
HHE	2066	hours
QH	28344	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	88	12,1	29 / 34	12,1	3,33	1,000	1,00	3,33
B	2	54	7,39	25 / 30	7,39	4,99	1,000	1,00	5,01
C	7	35	4,75	27 / 35	5,52	6,87	0,900	0,86	6,86
D	12	15	2,11	19 / 24	6,42	6,82	0,900	0,33	6,81
E(TOL) or E(Tdesignh)	-10	100	13,7	30 / 35	11,3	3,06	1,000	1,00	3,06
F(Tbiv)	-7	88	12,1	29 / 34	12,1	3,33	1,000	1,00	0,33

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	178	8,55	2
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	178	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
5,12	5,11	202	5542

RE-PCM TH 14T KW 35°C - CALCULATION OF ENERGY EFFICIENCY - WARMER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 14T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	35°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	warmer	
Tdesignh	2	°C
Prated	13	kW
Tbiv	2	°C
TOL	2	°C
HHE	1336	hours
QH	17221	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	-	-	-	-	-	-	-	-
B	2	100	12,9	30 / 35	12,9	4,2	1,000	1,00	4,2
C	7	64	8,29	26 / 31	8,29	6,43	1,000	1,00	6,43
D	12	29	3,68	21 / 26	6,38	7,53	0,900	0,58	7,52
E(TOL) or E(Tdesignh)	2	100	12,9	30 / 35	12,9	4,2	1,000	1,00	4,2
F(Tbiv)	2	100	12,9	28 / 33	12,9	4,2	1,000	1,00	4,2

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	754	8,55	6
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	754	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
6,75	6,6	263,4	2586

POMPE DI CALORE REVIS IN R290

RE-PCM TH DA 9 A 14 KW

RE-PCM TH 14T KW 35°C - CALCULATION OF ENERGY EFFICIENCY - COLDER CLIMATE

Product reference		Reference conditions		
Manufacturer	e2Tech	Climate	colder	
Product reference	RE-PCM TH 14T	Tdesignh	-22	°C
Type of heat pump	outdoor air-to-water	Prated	12	kW
Operating mode	reversible	Tbiv	-15	°C
Temperature application	35°C	TOL	-15	°C
Water ow	variable	HHE	2465	hours
Water outlet temperature	variable	QH	30060	kWh
Capacity control	variable	Fossil fuel backup efficiency	-	%
Backup heater	electricity			

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	61	7,38	25 / 30	7,38	3,71	1,000	1,00	3,7
B	2	37	4,49	22 / 27	4,51	5,24	1,000	1,00	5,26
C	7	24	2,89	20 / 25	5,53	6,41	0,900	0,52	6,42
D	12	11	1,28	19 / 24	6,39	5,77	0,900	0,2	9,78
E(TOL) or E(Tdesignh)	-15	82	9,95	29 / 34	9,95	2,9	1,000	1,00	2,9
F(Tbiv)	-15	82	9,95	26 / 31	9,95	2,9	1,000	1,00	2,9

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	106	8,55	0,906
Stand by	0	22	0,000
Off mode	0	22	0,000
Crackcase heater	106	0	0,000

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
3,97	3,97	155,7	7579

RE-PCM TH 14T KW 55°C - CALCULATION OF ENERGY EFFICIENCY - AVERAGE CLIMATE

Product reference		Reference conditions		
Manufacturer	e2Tech	Climate	average	
Product reference	RE-PCM TH 14T	Tdesignh	-10	°C
Type of heat pump	outdoor air-to-water	Prated	13	kW
Operating mode	reversible	Tbiv	-7	°C
Temperature application	55°C	TOL	-20	°C
Water ow	variable	HHE	2066	hours
Water outlet temperature	variable	QH	26970	kWh
Capacity control	variable	Fossil fuel backup efficiency	-	%
Backup heater	electricity			

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	88	11,5	44 / 52	11,5	2,48	1,000	1,00	2,49
B	2	54	7,03	34 / 42	7,03	4,02	1,000	1,00	4,01
C	7	35	4,52	28 / 36	5,22	5,78	0,900	0,87	5,75
D	12	15	2,01	27 / 35	6,11	5,9	0,900	0,33	5,87
E(TOL) or E(Tdesignh)	-10	100	13,1	47 / 55	10,7	2,22	1,000	1,00	2,22
F(Tbiv)	-7	88	11,5	44 / 52	11,5	2,48	1,000	1,00	2,49

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	178	8,55	2
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	178	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
4,11	4,11	161,4	6561

POMPE DI CALORE REVIS IN R290 RE-PCM TH DA 9 A 14 KW

RE-PCM TH 14T KW 55°C - CALCULATION OF ENERGY EFFICIENCY - WARMER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 14T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	warmer	
Tdesignh	2	°C
Prated	12	kW
Tbiv	2	°C
TOL	2	°C
HHE	1336	hours
QH	15880	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	-	-	-	-	-	-	-	-
B	2	100	11,9	47 / 55	11,9	2,92	1,000	1,00	2,92
C	7	64	7,64	38 / 46	7,64	4,78	1,000	1,00	4,78
D	12	29	3,4	26 / 34	6,03	6,28	0,900	0,56	6,27
E(TOL) or E(Tdesignh)	2	100	11,9	47 / 55	11,9	2,92	1,000	1,00	2,92
F(Tbiv)	2	100	11,9	47 / 55	11,9	2,92	1,000	1,00	2,92

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	754	8,55	6
Stand by	0	22	0
Off mode	0	22	0
Crackcase heater	754	0	0

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
5,27	5,22	206	3039

RE-PCM TH 14T KW 55°C - CALCULATION OF ENERGY EFFICIENCY - COLDER CLIMATE

Product reference	
Manufacturer	e2Tech
Product reference	RE-PCM TH 14T
Type of heat pump	outdoor air-to-water
Operating mode	reversible
Temperature application	55°C
Water ow	variable
Water outlet temperature	variable
Capacity control	variable
Backup heater	electricity

Reference conditions		
Climate	colder	
Tdesignh	-22	°C
Prated	12	kW
Tbiv	-15	°C
TOL	-15	°C
HHE	2465	hours
QH	28887	kWh
Fossil fuel backup efficiency	-	%

Performance data

Condition	Outdoor air T°C	Part load ratio (%)	Part Load (kW)	Inlet/outlet water temperatures for testing	Declared Capacity (kW)	Declared COP _d	C _{dh}	CR	COP _{bin}
A	-7	61	7,09	36 / 44	7,09	2,94	1,000	1,00	2,94
B	2	37	4,32	29 / 37	4,32	4,41	1,000	1,00	4,39
C	7	24	2,78	24 / 32	5,26	5,49	0,900	0,53	5,51
D	12	11	1,23	20 / 28	6,15	5,16	0,900	0,2	5,16
E(TOL) or E(Tdesignh)	-15	82	9,56	45 / 53	7,09	2,24	1,000	1,00	2,25
F(Tbiv)	-15	82	9,56	38 / 47	7,08	2,24	1,000	1,00	2,25

Auxiliary power consumptions - Operating modes for reversible units			
	Hours	Power input (W)	P * h (kWh)
Thermostat off	106	8,55	0,906
Stand by	0	22	0,000
Off mode	0	22	0,000
Crackcase heater	106	0	0,000

Energy Efficiency			
SCOPon	SCOP	h _s	Q _{HE} (kWh)
3,36	3,36	131,2	8607



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