

Thermal Oil / Hot Water Pumps



Automation products available:

- PumpExpert
- Hyamaster
- hyatronic

Fields of Application

Etanorm SYT/Etanorm-RSY pumps are used in heat transfer systems (DIN 4754) or in hot water circulation systems.

Operating Data

	Thermal oil	Hot water
Q	up to 1900 m ³ /h, 528 l/s	
H	up to 102 m	
t	-30 °C to +350 °C	up to +180 °C
p ₂ ¹⁾	up to 16 bar	

1) see pressure/temperature limits, page 5

Design

Horizontal volute casing pump, single-stage (pump size 125-500/2 double-stage), with ratings and main dimensions to EN 733 up to DN 200 / extension Etanorm-RSY, with bearing bracket, in back pull-out design.

Volute casing and impeller or casing cover with replaceable wear rings.

Volute casing with integrally cast pump feet.

Bearings

Coupling side: grease-lubricated deep-groove ball bearing

Impeller side: Product-lubricated carbon bearing

Option: product-lubricated SiC/SiC bearing

Shaft Seal

Mechanical seal to EN 12756.

Option: double-acting mechanical seal in tandem arrangement

Materials

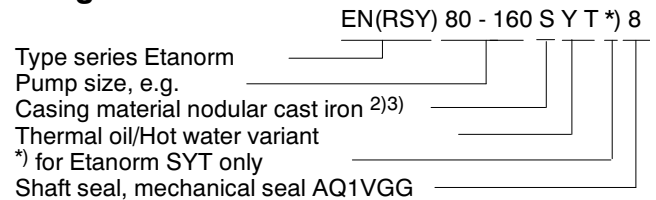
Volute casing	Nodular cast iron JS1025 ²⁾
Discharge cover	Nodular cast iron JS1030 ³⁾
Shaft	Chrome steel 1.4021.05 HRC 55/1.4057
Impeller	Grey cast iron JL1040 ⁴⁾
Wear rings	Grey cast iron GG
Bearing bracket	Nodular cast iron JS1030 ³⁾

2) to EN 1563: GJS-400-18-LT

3) to EN 1563: GJS-400-15

4) to EN 1561: GJL-250

Designation



Accessories

Drive ⁴⁾

Surface-cooled KSB-IEC three-phase squirrel cage motor

Winding: up to 2.2 kW 220-240 V/380-420 V
for 3 kW and above 380-420 V/660-725 V

Design: IM B3

Enclosure: IP 55

Thermal class: F with temperature sensors:
3 PTC thermistors

Operating mode: continuous operation S1

or

surface-cooled three-phase squirrel cage motor as described above, but West European brand to KSB's choice.

Coupling

Flexible coupling with/without spacer sleeve

Contact guard

Coupling guard as per EN 294.

Baseplate

Folded sectional steel / steel plate; welded sectional steel for the complete unit (pump and motor) in torsion-resistant design

4) **⚠** If the electric motor is supplied by the customer, the cooling air **must** flow in axial direction towards the pump side!

Air velocity ≥ 3 m/s, measured at the drive-end bearing end plate

Certification

Certified quality management ISO 9001.

Fluid handled	Application limits ¹⁾	Materials Casing/Impeller	Shaft seal Mechanical seal		Reference code (Etanorm SYT only)
		Nodular cast iron / Grey cast iron	single-acting, AQ ₁ VGG	double-acting Tandem AQ ₁ VGG / AQ ₁ VGG	
		S			
Hot water ²⁾	t ≤ +180 °C p ≤ 16 bar	x	x	-	SYT 8
Thermal oil on mineral oil basis	t ≤ -30 to +350 °C p ≤ 16 bar	x	x	x	SYT 8
Thermal oil on synthetic basis with vapour pressure ≤ 1 bar at operating temperature	t ≤ -30 to +350 °C p ≤ 16 bar	x	x	x	SYT 8
Thermal oil on synthetic basis with vapour pressure ≥ 1 bar at operating temperature	t ≤ -30 to +350 °C p ≤ 16 bar	x	-	x	SYT 8

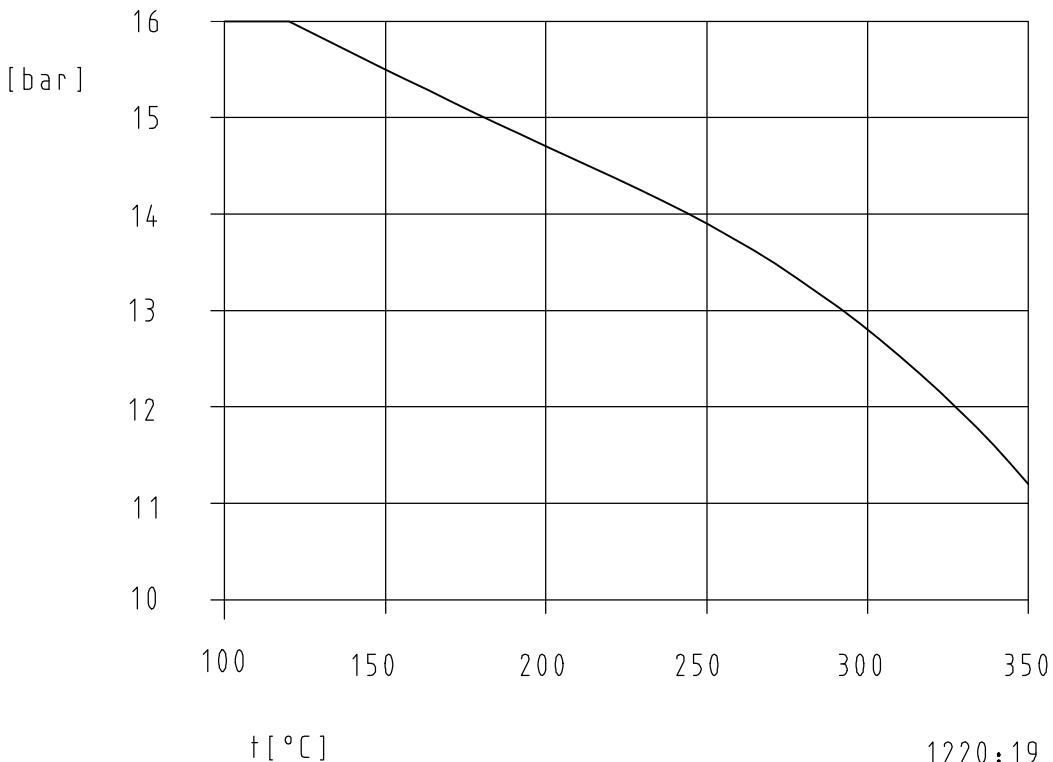
1) Inlet pressure must not fall below atmospheric pressure.

2) Low-salt or fully desalinated water to VdTÜV specification/AGFW specification TCN 1466 (VdTÜV) 5/15 (AGFW) edition 02.89

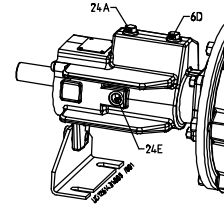
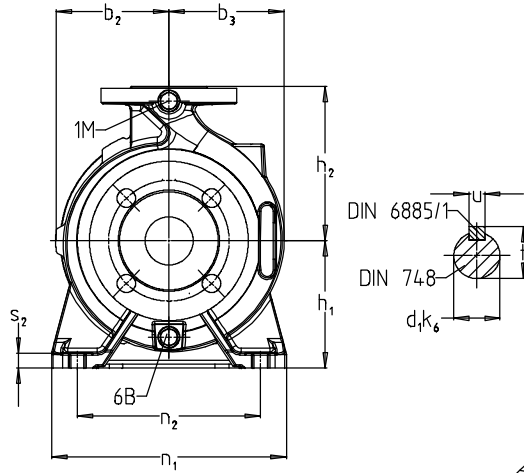
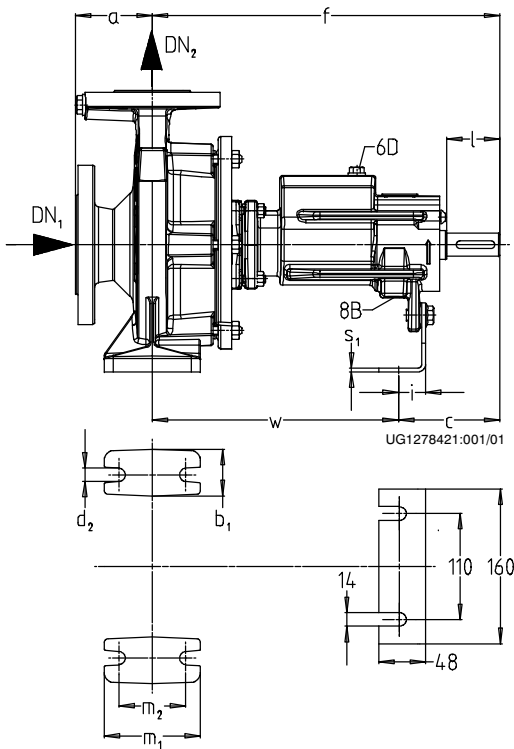
Pressure and Temperature Limits

Etanorm SYT/Etanorm-RSY	Fluid temperature	Inlet pressure p ₁ ≥ 1 bar	Discharge pressure p ₂ ³⁾
Thermal oil	-30 to +350 °C	up to 16 bar	up to 16 bar
Hot water	up to +180 °C	up to 16 bar	up to 16 bar

3) The sum of inlet pressure and head at zero flow point must not exceed 16 bar or the values given in the diagram.



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Etanorm SYT


Version with double-acting mechanical seal

1 M	Druckmessgerät / Pressure gauge / Indicateur de pression / Manomètre / Manometro / Manometer
6 B	Förderflüssigkeit-Entleerung / Casing drain / Vidange du liquide pompé / Scarico del liquido convogliato / Vloeistof- aftap
6 D	Förderflüssigkeit-Auffüllen und Entlüften / Fluid handled-priming and venting / Remplissage et purge d'air du liquide pompé / Rimpimento del liquido convogliato spurgo dell'aria / Vloeistof vullen en ontlichten
8 B	Leckflüssigkeit-Ablass / Leakage drain / Vidange liquide de fuite / Uscita del liquido di fuga / Salida del liquido de fugas / lekvloeistof afvoer
24 A	Quenchflüssigkeit Austritt / Quench liquid out / Liquide quench sortie / Liquido di quench Uscita / Salida del liquido "quench"
24 B	Quenchflüssigkeit Eintritt / Quench liquid in / Liquide quench entrée / Liquido di quench Entrada / Entrada del liquido "quench"

Tolerances of connecting dimensions as per EN 735

mm

Etanorm SYT	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	c	d ₁ k ₆	d ₂	f	h ₁	h ₂	i	l	m ₁	m ₂	n ₁	n ₂	s ₁	s ₂	t	u	w	1 M 6 B	6 D 8 B
32-125.1	50	32	80	50	113	113	100	24	14	360	112	140	23	50	100	70	190	140	4	15	27	8	260	G 3/8	G 1/4
32-160.1	50	32	80	50	116	125	100	24	14	360	132	160	23	50	100	70	240	190	4	15	27	8	260	G 3/8	G 1/4
32-200.1	50	32	80	50	128	137	100	24	14	360	160	180	25	50	100	70	240	190	6	18	27	8	260	G 3/8	G 1/4
32-160	50	32	80	50	113	125	100	24	14	360	132	160	23	50	100	70	240	190	4	15	27	8	260	G 3/8	G 1/4
32-200	50	32	80	50	132	141	100	24	14	360	160	180	25	50	100	70	240	190	6	18	27	8	260	G 3/8	G 1/4
32-250	50	32	100	65	170	176	100	24	14	360	180	225	25	50	125	95	320	250	6	18	27	8	260	G 3/8	G 1/4
40-160	65	40	80	50	115	131	100	24	14	360	132	160	23	50	100	70	240	190	4	15	27	8	260	G 3/8	G 1/4
40-200	65	40	100	50	115	131	100	24	14	360	160	180	25	50	100	70	265	212	6	18	27	8	260	G 3/8	G 1/4
40-250	65	40	100	65	165	178	100	24	14	360	180	225	25	50	125	95	320	250	6	18	27	8	260	G 3/8	G 1/4
40-315	65	40	125	65	194	283	130	32	14	470	225	250	24	80	125	95	345	280	6	18	35	10	340	G 3/8	G 1/4
50-160	65	50	100	50	126	147	100	24	14	360	160	180	25	50	100	70	265	212	6	18	27	8	260	G 3/8	G 1/4
50-200	65	50	100	50	145	165	100	24	14	360	160	200	25	50	100	70	265	212	6	18	27	8	260	G 3/8	G 1/4
50-250	65	50	100	65	168	184	100	24	14	360	180	225	25	50	125	95	320	250	6	18	27	8	260	G 3/8	G 1/4
50-315	65	50	125	65	200	216	130	32	14	470	225	280	24	80	125	95	345	280	6	18	35	10	340	G 3/8	G 1/4
65-160	80	65	100	65	130	158	100	24	14	360	160	200	25	50	125	95	280	212	6	18	27	8	260	G 3/8	G 1/4
65-200	80	65	100	65	154	177	100	24	14	360	180	225	25	50	125	95	320	250	6	18	27	8	260	G 3/8	G 1/4
65-250	80	65	100	80	180	200	130	32	19	470	200	250	24	80	160	120	360	280	6	20	35	10	340	G 3/8	G 1/4
65-315	80	65	125	80	208	229	130	32	19	470	225	280	24	80	160	120	400	315	6	20	35	10	340	G 3/8	G 1/4
80-160	100	80	125	65	153	192	100	24	14	360	180	225	25	50	125	95	320	250	6	18	27	8	260	G 3/8	G 1/4
80-200	100	80	125	65	161	189	130	32	14	470	180	250	24	80	125	95	345	280	6	18	35	10	340	G 3/8	G 1/4
80-250	100	80	125	80	184	210	130	32	19	470	200	280	24	80	160	120	400	315	6	18	35	10	340	G 3/8	G 1/4
80-315	100	80	125	80	220	244	130	32	19	470	250	315	24	80	160	120	400	315	6	20	35	10	340	G 3/8	G 1/4
100-160	125	100	125	80	178	225	130	32	19	470	200	280	24	80	160	120	360	280	6	18	35	10	340	G 1/2	G 1/4
100-200	125	100	125	80	173	213	130	32	19	470	200	280	24	80	160	120	360	280	6	18	35	10	340	G 1/2	G 1/4
100-250	125	100	140	80	190	220	130	32	19	470	225	280	24	80	160	120	400	315	6	18	35	10	340	G 1/2	G 1/4
100-315	125	100	140	80	225	255	130	32	19	470	250	315	24	80	160	120	400	315	6	18	35	10	340	G 1/2	G 1/4
125-200	150	125	140	80	195	244	130	32	19	470	250	315	24	80	160	120	400	315	6	20	35	10	340	G 1/2	G 1/4
125-250	150	125	140	80	226	275	130	32	19	470	250	355	24	80	160	120	400	315	6	20	35	10	340	G 1/2	G 1/4
125-315	150	125	140	100	238	278	160	42	24	530	280	355	25	110	200	150	500	400	6	20	45	12	370	G 1/2	G 1/4
125-400	150	125	140	100	275	306	160	42	24	530	315	400	25	110	200	150	500	400	6	20	45	12	370	G 1/2	G 1/4
150-315	200	150	160	100	255	303	160	42	24	530	280	400	25	110	200	150	550	450	6	20	45	12	370	G 1/2	G 1/4
150-400.1	200	150	160	100	285	325	160	42	24	530	315	450	25	110	200	150	550	450	6	20	45	12	370	G 1/2	G 1/4

DN = EN 1092-2/DN.../PN 16/21/JS1025/B

"G" = ISO 228/1