LEDERLE Hermetic

Pumped medium:			Dowtherm A	
Working temperature	θ_{op}		270	°C
Density at TR	$\rho(\theta_{op})$		838,7	kg/m³
Dynamic viscosity in TR	$\mu(\theta_{op})$		0,25	cp
Kinematic viscosity in TR	$\nu(\theta_{op})$		0,298	
Specific heat in TR	$c_p(\theta_{op})$		2,273	kJ/kgK
Vapour pressure in TR	$p_v(\theta_{op})$		1,33	bar(abs)
Particulate content			none	

Pump data rated:			$Q_{min,ad}$	Q_r	$Q_{max,ad}$	
Capacity	Q		15	60	65	m³/h
Headroom	H			32		m
Delivered power	P			6	6,3	kW
Pressure differential	Δp	Density-dependent		2,63		bar
NPSH of the pump		Included heat balance	1,9	2,3	3,8	m
Impeller diameter	Ø		154			mm
Geometric inlet height						m
Geometric suction lift						m
Suction nozzle pressure m	p_{A1}					bar(abs)
NPSH of installation		available	4,3			m

Nominal pressure of the pump	EN 1333	PN 25	bar
Hydrostatic test pressure	p_{test}	PN 40	bar
Mechanical design	$p_{max,ad}$	PN 16	bar for $\theta_{max,ad}$= 350°C

Data of the hermetic wet motor:

Motor type		N34XL-2	
Nominal motor power	P1	16,9	kW
Mechanical motor power	P2	13	kW
Nominal current frequency	f_N	50	Hz
Speed	n_N	2825	rpm(-) (1)
Rated voltage	U_N	400	V
Rated current	I_N	28,8	A
Inrush current	I_A/I_N	6,3	times
Coefficient	cosφ	0,3	
Nominal temperature	θ_N	70	°C
Connection		3AC Triangle	
Insulation class		H	
Type of winding protection		3 x KL180	
Number of connectors in the box		3 + 2+ 2	
Sound pressure level		–	dB
Insulation of motor / box		IP67 / IP55	

Monitoring of direction of rotation [X] ROMi [.]ROMe

[ ] Operation with frequency converter f_{ad} frequency range 30 - 60 Hz

[ ] Pump heating θ_h °C [X] Cooling with capacity q_c 0.8 m³/h at θ_c 30°C

[ ] Motor without explosion protection

[X] Explosion-proof motor according to Directive 94/9/EU

Protection of electrical equipment in accordance with EN 60079 Temperature class T4

Protection of non-electrical equipment to EN 13463 Temperature class T1

Type of conformity check EC, Certificate No. PTB 99 ATEX 1121

Designation: Ⓔx II 2 G Ex de IIB T4 Ⓔx II 2 G c TX

Temperature monitoring required

[X] Windings	Switch-off temperature $\theta_{trip,w}$ =	180,0	°C
[X] Fluid pumped in the motor	Switch-off temperature $\theta_{trip,l}$ =	θ_{op}+ 10.0 °C= 80	°C

Chokes:

1 x M40 x 1.5	Cable diameter 17 - 28 mm	Cable cross section	35 mm²
1 x M20 x 1.5	Cable diameter 6 - 13 mm	Cable cross section	2.5 mm²

Technical Specifications:

Offer number: 244 20 He DOMO

For: Domo Engineering

Enquiry no:

No on offer: 0010 **Pump:** CNKr 80-50-160B

Quantity: 2 **Motor:** N34XL-2

Customer Technical No: **Date:** 24.12.2020

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Materials:

Pump housing		Ductile cast iron GGG-40.3
Impeller		Grey cast iron GG-25
Booster impeller		Grey cast iron GG-25
Relief ring Housing		
Impeller relieving ring		
Cover		
Pressure vessel		
Other parts in contact with fluid		Steel
Other parts not in contact with the fluid		Steel
Motor housing		Steel
Motor cover		
Relieving shield		
Stator encapsulation box		Hastelloy 2.4610
Rotor encapsulation box		Stainless steel 1.4571
Shaft		Chrome steel 1.4021
Bearings	sleeves	1.4571 / W5
	Pan bearings	1.4571 / SiC 30
Seals	in contact with the fluid	EPDM
	Motor	Cr-Ni / Graphite
	radiator	AFM34
Radiator type		Cylindrical No5
Radiator shell		Steel
Radiator insert/tubes		Stainless steel 1.4571
Pump base		Cast iron
Temperature sensor seat	Process connection type	G 1/2-57

Flanges:

Suction	DN 80
Discharge	DN 50
Flanges according to	EN 1092 PN25
Buttress	
Raised flange	Shape D

Painting:

[ ] Etching
[X] Standard HERMETIC Type: Type B up to 120°C - 80µm
[ ] As specified Colour: RAL 9020

Crises:

[ ] Q_{min} Diameter: _____ [ ] Material: _____
[ ] Q_{min} Diameter: _____ [ ] Material: _____

Accessories:

Monitoring of shaft axial position and bearing condition [MAP
[X] OPTO flooding sensor [X] Liquid temp. sensor [ ] Stator pressure sensor [MHG [PTC Stator

Documentation according to HERMETIC Pumpen standard:

- Operating instructions EN
- Technical specifications
- Assembly drawing with marked part numbers
- Dimension drawing
- Parts list with part numbers
- Performance curve
- EU declaration of conformity

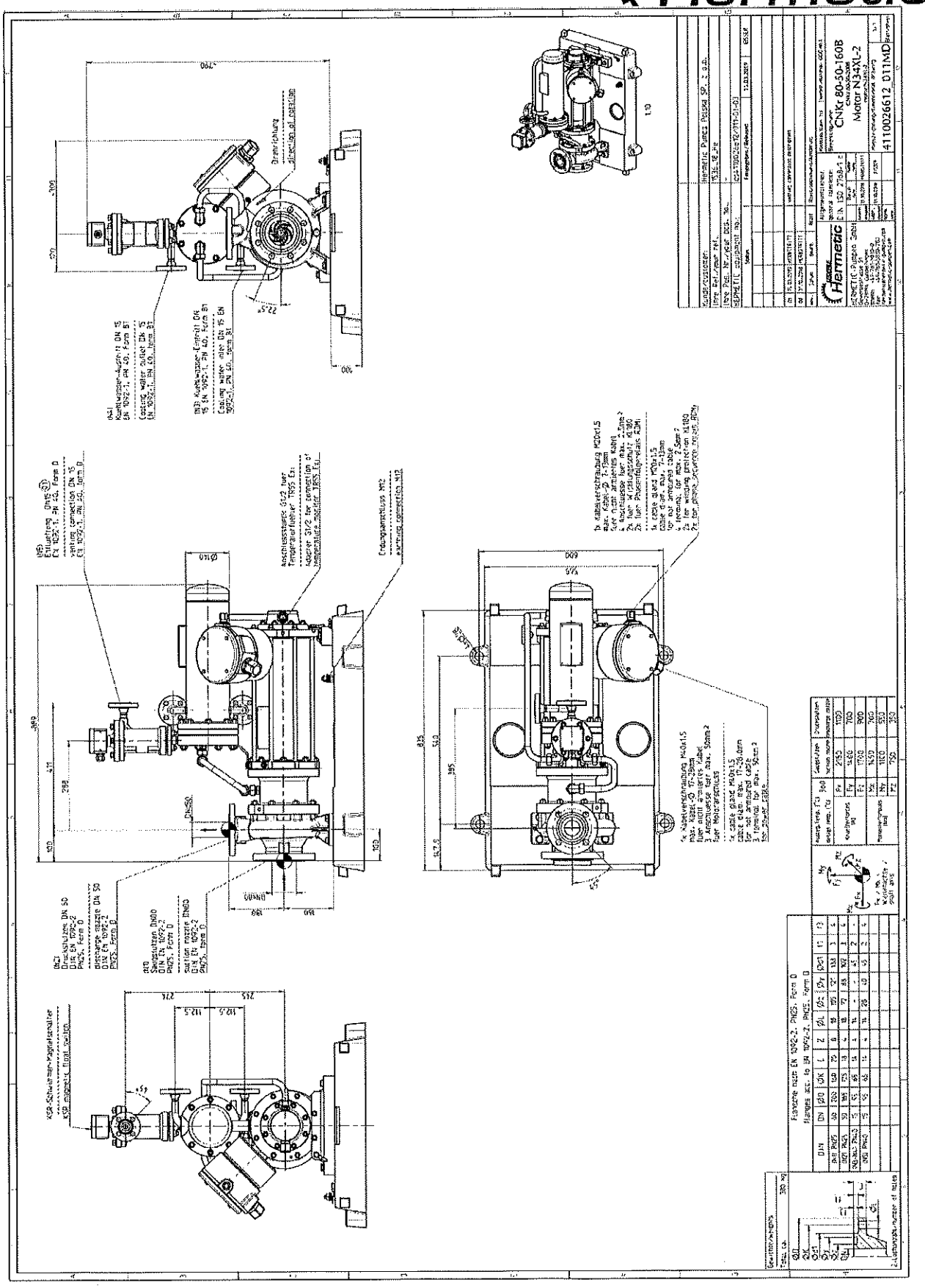
Technical Specification:

Offer number: 244_20_DOMO
For: Domo Engineering
Enquiry no:
No on offer: 0010 **Pump:** CNKr 80-50-160
Quantity: 2 **Motor:** N34XL-2
Customer Technical No: _____ **Date:** 24.12.2020

Tests and inspections:

[X] Guaranteed performance according to DIN EN ISO 9906:2013-03,cl. 2B
[X] Hydrostatic test according to DIN EN ISO 5199
[X] Leakage test with 6 bar nitrogen immersion
[ ] Shaft balancing with rotors according to DIN ISO 1940, 2.5
[X] Shaft balancing with rotors to DIN ISO 1940, 6.3
[ ] Balancing protocol
[ ] NPSH test
[ ] Helium leakage test: rotor only
[ ] Helium leakage test: whole pump
[ ] Vibration test
[ ] Supersonic test
[ ] PMI test (positive material identification)
[X] Cert. mat. DIN EN 10204-2.2 entire pump
[X] Cert. mat. DIN EN 10204-2.2 rotor and shaft
[ ] Cert. mat. DIN EN 10204-3.1 pump casing
[ ] Cert. mat. DIN EN 10204-3.1 pressure parts
[ ] Cert. mat. DIN EN 10204-3.1 rotor and shaft
[ ] X-ray exposure of the pressure vessel
[ ] Rotor sheath roentgen irradiation
[ ] X-ray irradiation of the recirculation line
[ ] Test with coloured penetrant
[ ] User presence during tests
[ ] Presence of
[ ] Special tests according to ITP

Special execution:

- pump in accordance with previously supplied pumps with serial number 4110024902/11 according to ISO 2858
- pump with water-cooled motor via a cylindrical radiator
- High strength bearings made of silicon carbide and tungsten carbide
- fitted temperature sensor PT100 ■TR55 Exi
- Control of direction of rotation by ROMi phase connection sensor

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