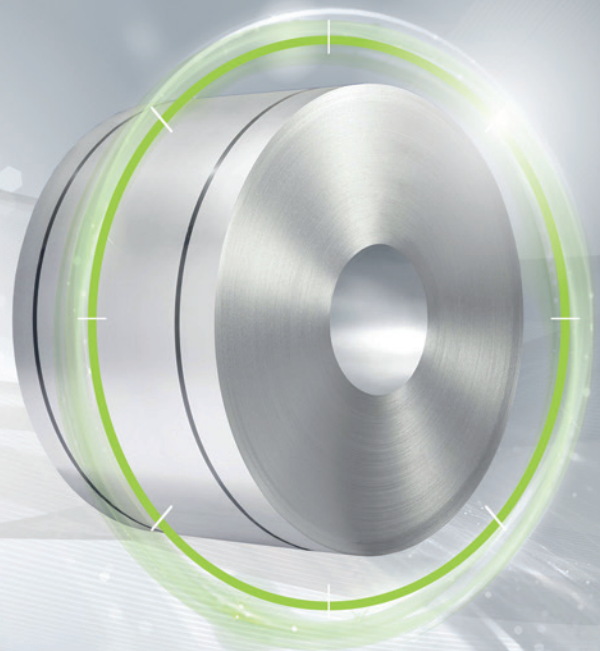


FULLY  
PROCESSED

## isovac high-perm 1400-100 A

### The specialist with the highest permeability

Manufactured in the most modern production lines, this fully processed isovac® grade exhibits highly homogeneous properties across the width and length of the entire strip. The result is excellent and consistent processability in the manufacture of highly efficient electrical components.

The optimum adjustment of texture increases magnetizability and reduces core losses of isovac HP 1400-100 A. This increase in efficiency makes it possible to maintain the same level of performance while reducing component size and saving material, weight and costs. This also means that a higher level of performance can be achieved with the same component size.

Upon request, isovac HP 1400-100 A can be supplied with an electrical steel insulation system and can be used directly in as-delivered condition.

#### **Convincing advantages:**

- » Increased performance achieved by increasing torque based on higher magnetizability (improvement by up to 0.05 T at J25, J50, J100)
- » Possible cost optimization through less material usage, less weight and less space requirement resulting from downsizing while maintaining the same level of performance
- » Best processability through consistent mechanical properties and homogeneous, clean surfaces
- » Excellent stackability resulting from high dimensional accuracy in rolling direction and perpendicular to rolling direction (thickness tolerance)
- » Innovative electrical steel insulation systems upon request

voestalpine supplies isovac HP 1400-100 A, an electrical steel of the highest quality. We offer you a customer-focused overall package of products, service and logistics in addition to all the advantages of our integrated metallurgical facility and Steel Service Centers.

### Mechanical properties:

Tensile test according to DIN EN ISO 6892-1 and hardness according to DIN EN ISO 6507-1 (Typical values);  
 Test direction: Transverse

Grade named according to isovac®	Yield strength $R_{eH}$ [MPa]	0.2 %-Yield strength $R_{p0.2}$ [MPa]	Tensile strength $R_m$ [MPa]	Elongation $A_{80}$ [%]	Hardness HV10 [-]
isovac HP 1400-100 A	385	275	360	39	110

### Magnetic properties:

in as-delivered condition (Typical values)

Test direction: Mean value from longitudinal and transverse measurements at 50 Hz (60 Hz), single-sheet test

Grade named according to isovac®	Specific total loss				Magnetic polarization			Relative permeability
	1.0 T P10		1.5 T P15		2500 A/m J25	5000 A/m J50	10000 A/m J100	1.5 T $\mu_r$
	50 Hz [W/kg]	60 Hz [W/lb]	50 Hz [W/kg]	60 Hz [W/lb]	[T]	[T]	[T]	[-]
isovac HP 1400-100 A	5,40	3,29	13,00	7,93	1,69	1,78	1,88	2000

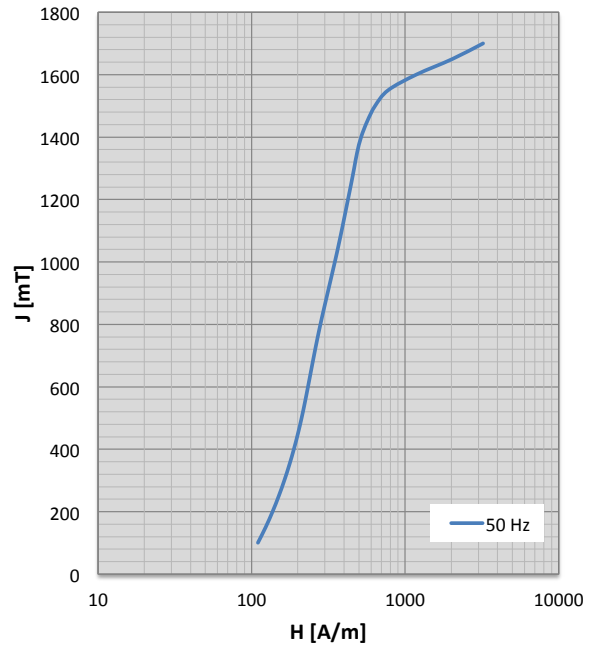
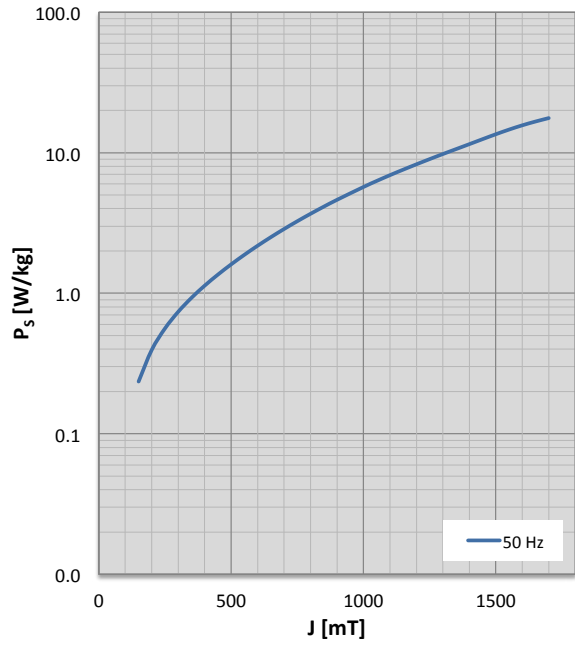
### Physical properties:

Typical values

Grade named according to isovac®	Density $\rho$ [g/cm <sup>3</sup> ]	Specific electrical resistance $\rho_s$ [ $\mu\Omega\text{cm}$ ]	Thermal conductivity $\lambda$ [W/mK]
isovac HP 1400-100 A	7,83	19,0	54

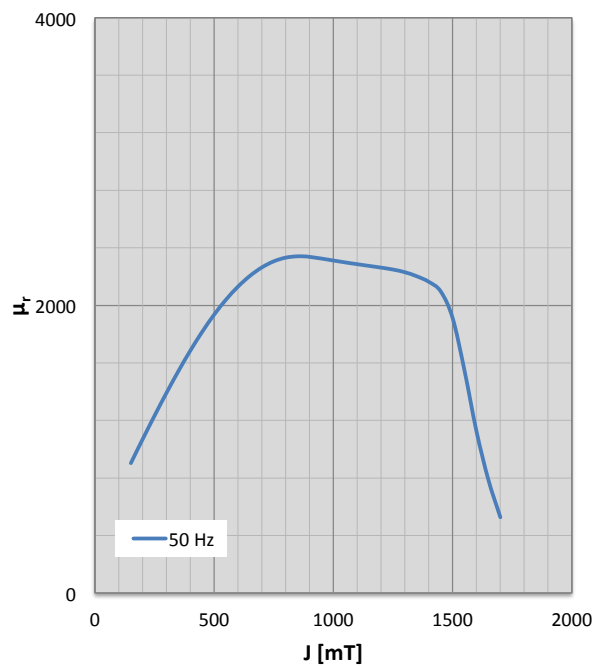
**Characteristics  $P_s/J$  loss curve and characteristics  $J/H$  magnetization curve**

Test direction: Mean value from longitudinal and transverse measurements at indicated frequencies, single-sheet test



**Characteristics  $\mu_r/J$  permeability curve**

Test direction: Mean value from longitudinal and transverse measurements at 50 Hz, single-sheet test



### Frequency dependence of magnetic properties

Test direction: Mean value longitudinal and transverse at indicated frequencies and polarizations, single-sheet test

— 50 Hz			
J [mT]	H [A/m]	P <sub>s</sub> [W/kg]	μ <sub>r</sub> [-]
100	110	0.08	732
150	123	0.24	901
200	137	0.40	1069
250	150	0.56	1233
300	163	0.74	1391
350	176	0.93	1543
400	188	1.13	1685
450	200	1.36	1817
500	212	1.61	1936
550	222	1.88	2040
600	233	2.18	2130
650	244	2.51	2205
700	255	2.87	2264
750	267	3.26	2306
800	281	3.68	2332
850	296	4.13	2341
900	312	4.62	2337
1000	348	5.71	2312
1050	367	6.30	2298
1100	386	6.92	2286
1150	405	7.58	2274
1200	424	8.27	2262
1250	445	9.01	2249
1300	465	9.79	2230
1350	486	10.61	2202
1400	517	11.51	2163
1450	566	12.49	2097
1500	637	13.54	1911
1550	774	14.61	1544
1600	1181	15.67	1123
1650	2030	16.68	786
1700	3218	17.64	526

Available Dimensions

Grade named according to isovac®	Delivery form	Width [mm]	Length [mm]
isovac HP 1400-100 A	Wide strip / Slit strip	19 – 1600	-
	Cut-to-length sheets	300 – 1600	300 – 5000

Deliverable coating systems

Grade named according to isovac®	Uncoated	C-3	Backlack	C-5	C-6
isovac HP 1400-100 A	✔	✔	☰	✔	✔

✔ Available ☰ On request

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