

Asynchronous electric motors designed to operate hydraulic pumps for mineral oil – Series AT 90 – HYD, AR 90 – HYD, ARR 90 - HYD

1. APPLICATION

To operate hydraulic pumps for mineral oil.

2. TECHNICAL DATA

The motors from the series AT 90 – HYD are 3-phase asynchronous electric motors.

The motors from the series AR 90 – HYD are single-phase asynchronous motors with capacitors.

Finally, the motors from the series ARR 90 –HYD are single-phase asynchronous motors with capacitors and an increased starting torque.

The output power of the motor shaft is determined under the following conditions:

- Nominal voltage indicated on motor nameplate with a tolerance of $\pm 10\%$
- Frequency of the supply voltage with a tolerance of $\pm 1\%$
- Ambient temperature - to 40°C
- Height above sea level to 1000m
- Duty Cycles

Type S1 - continuous operation according to EN 60034 -1.

Type S2 – 2 min short-time according to EN 60034 -1.

Type S3 40% - Intermittent periodic duty

DEGREE OF PROTECTION: IP - The motors are supplied in IP54 according to IEC/ISO 34-5.

THERMAL INSULATION CLASS - The thermal class of insulation is F (155°C).

3. CONSTRUCTION – INT – square flange

The motors are produced in aluminum body, aluminum rear bearing shield, and aluminum square flange. The flange is type B5. The driving shaft end is split, the width of the split is 8 mm. The pump unit is mounted to the motor via a connector. The motor has its own ventilation system. A plastic ventilator is mounted on the shaft of the motor. The fan cover is made of galvanized steel sheets with thickness 0.8 or 1 mm. The terminal box is placed on top of the body and is made from special plastic. The rotor winding of the single-phase motors is made from aluminum alloy with a high electrical resistance. The rotor cage of the three-phase motors is made of aluminum A6, A7 or A7E. The shaft is directly put in the rotor with an assemble, guaranteeing the rotating torque of the motor. The axial freedom of the rotor is compensated by a spring shim, attached to the side of the bearing that is opposite to the driving shaft end. The windings of the motors are made of enameled copper wire with a thermal class of insulation F or H. The winding is single-layered, split, concentric with a diametrical step. In single-phase motors, the proportion of the working channels to the capacitor's wire is 2:1. The motors are not painted.

TECHNICAL DATA TABLES

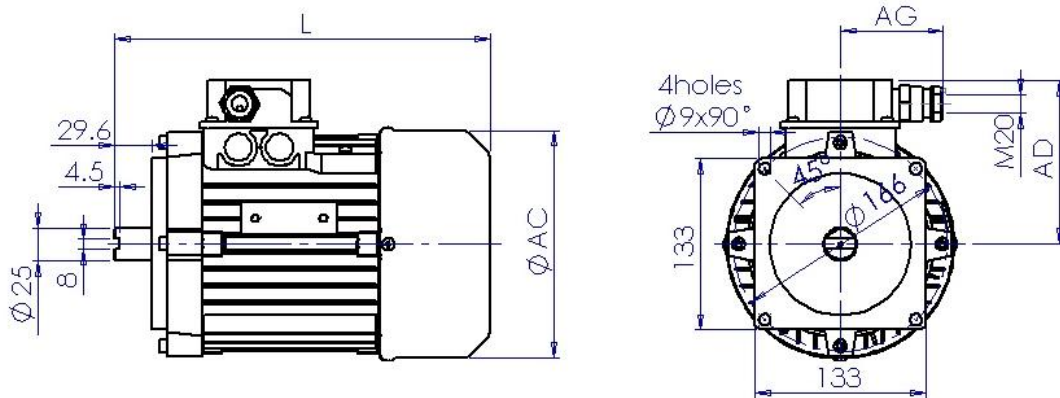
Series AT 90-HYD

TYPE TYP	Duty Cycle Betriebsarte	Rated Output Leistung		Parameters at Rated Output Nenndaten						Starting characteristics Anlaufverhalten			Weight Gewicht
		P _N		n _{N,50Hz}	n _{N,60Hz}	I _N		η	cosφ	I _s /I _N	M _s /M _N	M _{MAX} /M _N	G
		kW	HP	min ⁻¹	min ⁻¹	220 A	380 A	%	-	-	-	-	kg
3000min ⁻¹													
AT 90 S2HYD	S1	1.50	2.00	2800	3350	6.4	3.7	77	0.80	6,0	2,2	2.6	12.0
	S3-40%	2.20	3,00	2850	3410	9.5	5.5	77	0.79	4.0	1.5	1.8	
AT 90 L2HYD	S1	2.20	3,00	2850	3410	9.0	5.2	81	0.79	6,8	2,3	2.7	14.0
	S3-40%	3.00	4.00	2850	3410	12.3	7.1	81	0.79	5.0	1.7	1.9	
AT 90 LB2HYD	S1	3.00	4,00	2880	3450	11.7	6.8	83	0.81	6,5	2,3	2.8	15.5
	S3-40%	4.00	5.50	2880	3450	15.6	9.1	83	0.81	5.0	1.7	1.9	
1500min ⁻¹													
AT 90 S4HYD	S1	1.10	1.50	1400	1670	5.4	3.1	72	0.75	4,3	2,2	2.6	12.0
	S3-40%	1.50	2,00	1400	1670	7.3	4.2	72	0.75	3.2	1.6	1.9	
AT 90 L4HYD	S1	1.50	2,00	1400	1670	6.7	3.9	76	0.77	4,6	2,2	2.6	14
	S3-40%	2.20	3.00	1350	1610	9.9	5.7	76	0.77	4,6	1.5	1.8	
AT 90 LB4HYD	S1	2.20	3.00	1350	1610	9.9	5.7	76	0.77	4,6	2,1	2.3	15.2
	S3-40%	3.00	3.47	1350	1610	13.5	7.8	76	0.77	4,6	1.5	1.7	

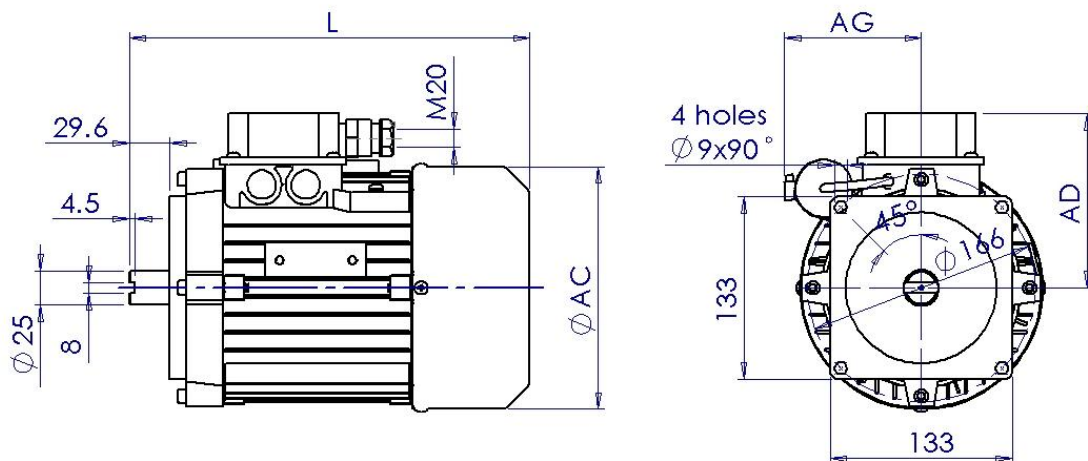
Series AR, ARR 90 HYD - 230V, 50Hz

TYPE TYP	Duty Cycle Betriebs-arte	Rated Output Leistung		Parameters at Rated Output Nenndaten				Starting characteristics Anlaufverhalten			G	CB μF/V
		P _N		n _N	I _N	η	cosφ	I _s /I _N	M _s /M _N	M _{MAX} /M _N		
		kW	HP	min ⁻¹	A	%	-	-	-	-		
3000 min ⁻¹												
AR 90 SA2HYD	S1	1.10	1.50	2800	7.0	76	0.94	5.4	0.65	1.9	11	40/450
AR 90 SA2HYDS3	S3 40%	1.50	2.00	2750	9.5	77	0.93	4.0	0.48	1.4		50/450
ARR 90 SA2HYDS3	S3 40%	1.50	2.00	2750	9.5	77	0.93	4.0	0.65	1.6		50/450
AR 90 SB2HYD	S1	1.50	2.00	2840	9.4	78	0.93	5.8	0.65	1.9	14	50/450
AR 90 SB2HYDS3	S3 40%	2.20	2.00	2760	13.6	79	0.93	4.0	0.44	1.3		50/450
ARR 90 SB2HYDS3	S3 40%	2.20	2.00	2760	13.6	79	0.93	4.0	0.65	1.6		50/450
AR 90 LB2HYD	S1	2.20	3.00	2840	13.4	80	0.93	5.4	0.65	1.7	16	60/450
AR 90 LB2HYDS3	S3 40%	3.00	4.00	2760	18.1	81	0.93	4.0	0.48	1.2		60/450
ARR 90 LB2HYDS3	S3 40%	3.00	4.00	2760	18.1	81	0.93	4.0	0.67	1.6		60/450
1500min ⁻¹												
AR 90 SA4HYD	S1	0.75	1.00	1400	5.5	65	0.95	3.5	0.60	1.9	11	30/450
AR 90 SA4HYDS3	S3 40%	1.10	1.50	1360	8.1	65	0.95	2.4	0.41	1.3		40/450
ARR 90 SA4HYDS3	S3 40%	1.10	1.50	1360	8.1	65	0.95	2.4	0.70	1.8		40/450
AR 90 SB4HYD	S1	1.10	1.50	1350	7.8	70	0.93	3.4	0.55	1.8	14	40/450
AR 90 SB4HYDS3	S3 40%	1.50	1.50	1250	11.5	65	0.91	2.3	0.40	1.3		50/450
ARR 90 SB4HYDS3	S3 40%	1.50	1.50	1250	11.5	65	0.91	2.3	0.65	1.7		50/450
AR 90 LB4HYD	S1	1.50	2.00	1400	9.9	72	0.96	3.5	0.55	1.9	16	50/450
AR 90 LB4HYDS3	S3 40%	2.20	3.00	1360	14.4	73	0.95	2.4	0.38	1.3		60/450
ARR 90 LB4HYDS3	S3 40%	2.20	3.00	1360	14.4	73	0.95	2.4	0.65	1.7		60/450

OVERALL AND JOINING DIMENSIONS



AT 90 HYD	OVERAL AND JOINING DIMENSIONS AUSSENABMESSUNGEN UND ANBAUMASSE			
Type, Typ	AC	AD	AG	L
AT 90 S2 HYD, AT 90 S4 HYD	177	130	80	292
AT 90 L2 HYD, AT 90 L4 HYD AT 90 LB2 HYD, AT 90 LB4 HYD				317



AR, ARR 90 HYD	OVERAL AND JOINING DIMENSIONS AUSSENABMESSUNGEN UND ANBAUMASSE			
Type, Typ	AC	AD	AG	L
AR, ARR 90 SA2 HYD; AR, ARR 90 SA4 HYD AR, ARR 90 SB2 HYD; AR, ARR 90 SB4 HYD	177	130	80	292
AR, ARR 90 LB2 HYD, AR, ARR 90 LB4 HYD AR, ARR 90 LB2 HYD, AR, ARR 90 LB4 HYD				317