



Asynchronous generators

Contents

Product description _____	13/2
Overview of technical data _____	13/3

Motor selection data

Series G4.R on the basis of Premium Efficiency IE3 _____	13/4
Series GE.R on the basis of High Efficiency IE2 _____	13/6
Series G2.R on the basis of Standard Efficiency IE1 _____	13/8

Terminal boxes

Identical to terminal boxes of standard motors
see Chapter 2

Bearings

Identical to bearings of standard motors
see Chapter 2

Dimensions

Identical to dimensions of standard motors
see Chapter 2 and assignment tables _____ 13/10

Product description

Past industrial development has always correlated closely with advances in large power systems. In the meantime, however, the focus is shifting increasingly towards environment-friendly and renewable energy sources, leading to the growing acceptance of power generation plants with low to medium outputs. Examples of renewable energy sources

are wind and hydro power, and these are preferred fields of application for the asynchronous generator. It is a reliable, cost-effective and low-maintenance alternative to a classic synchronous generator. Asynchronous generators are operated either in isolation or parallel to an already existing mains supply, depending on the individual application.

Asynchronous generators for mains-parallel operation

When a three-phase asynchronous motor is driven oversynchronously by a drive machine, the negative slip also results in reversal of the energy flow. The motor begins to act as a generator and supplies energy to the mains. In this case,

the generator draws the necessary reactive power from the mains and no additional excitation systems are necessary. The mains holds the voltage and frequency, and thus separate regulators are similarly not required.

Asynchronous generators for isolated operation

When asynchronous generators are operated in isolation, the excitation is achieved through parallel connection of a capacitor bank. The dimensioning is dependent on the generator output, the generator parameters and the connected consumers. This mode of operation is significantly

more complex than mains-parallel operation and is only chosen for smaller outputs. It must also be pointed out that a generator operating in isolation reacts sensitively to inductive consumers and to load and speed changes.

Explanation of the symbols used in the selection data

P_B	Electrical active power output in kW	Q_B	Reactive power consumption at full load in kVAR
P_{auf}	Mechanical power input in kW	J	Moment of inertia in kgm^2
S	Electrical apparent power output in kVA	m	Mass in kg
n	Speed in rpm	n	Max. mechanical limit speed in rpm
η	Efficiency in %	I_B	Rated generator current
$\cos \phi$	Power factor	I_A/I_B	Relative starting current (motor value)
M_K/M_B	Relative generator pull-out torque		

Certificates of conformity in accordance with VDE-AR-N 4105:2011-08

The VDE application guide VDE-AR-N 4105:2011-08 and the associated test standard DIN VDE V 0124-100:2012-07 are intended to facilitate the improved integration of decentralised generation systems such as co-generation plants, wind turbines, hydropower plants and photovoltaic systems. Since 01.07.2012, the application guide has been binding for all power generation systems connected to the low-voltage distribution network (see VDE infosheet on VDE AR-N 4105).

The following documents must be presented when registering generation systems:

Block diagram:

- All equipment of the generation system from the main feeder box
- Existing meters (e.g. for supply) and planned metering points (generation, feed-in)
- Protective devices
- Generating units, with number, type, output, planned conductor connection
- Provisions for power reduction or limitation

For the generation system:

- Application form G.1 as per VDE-AR-N 4105
- Data sheet F.2 as per VDE-AR-N 4105 (separate data sheet for each generating unit [type])

For each generating unit:

- Certificate of conformity G.2 as per VDE-AR-N 4105
- Corresponding test report F.3 as per VDE-AR-N 4105

For the mains and system protection:

- Description of protective devices in accordance with section 6 of VDE-AR-N 4105
- Certificate of conformity G.3 as per VDE-AR-N 4105
- Corresponding test report F.4 as per VDE-AR-N 4105

Generation and mains security management:

Description of the implementation of section 5.7.3.2 of VDE-AR-N 4105 or § 6 EEG (where applicable)

It is the responsibility of the generation system operator to provide the above documents. In this context, it must be taken into account that an asynchronous generator must not be operated on the mains without appropriate control and regulation provisions and is also not to be viewed as a generating unit. The measurements required to be able to produce test reports F.3 und F.4 must be performed on the complete generation system. VEM motors – here purely a component manufacturer – provides performance characteristics, short-circuit characteristics and temperature-rise documentation.

All tests required in accordance with VDE application guide VDE-AR-N 4105:2011-08 must be performed on the complete generation system (generating unit).

In Germany, corresponding test services are offered by VDE Prüf- und Zertifizierungsinstitut GmbH.

Overview of technical data

The most important technical data are summarised in the following table. Further information can be taken from the catalogue section "introduction" (chapter 1).

Product group	Squirrel-cage rotor, IEC/EN
Rated output	5.5 to 710 kW
Sizes	132 to 400
Housing material	Grey cast iron
Rated torque	0.4 to 5800 Nm
Efficiency classification/ efficiency determination	IEC/EN 60034-30-1 / IEC/EN 60034-2-1, ≤ 1 kW direct measurement, > 1 kW residual loss method
Method of connection	Single-speed motors are designed in Δ/Y configuration as standard.
Stator winding insulation	Thermal class 155, optional 155 [F(B)], 180 to IEC/EN 60034-1
Degree of protection	IP 55 to IEC/EN 60034-5
Type of cooling	IC 411, IC 416, IC 71W (IC 31W) to IEC/EN 60034-6
Coolant temperature/ installation altitude	Standard -20 °C to +40 °C, Altitude 1000 m above sea level
Rated voltage	Standard voltages to EN 60038 50 Hz: 230 V, 400 V, 500 V, 690 V 60 Hz: 275 V, 460 V, 480 V, 600 V Voltage ranges A and B to IEC/EN 60034-1 (Prior consultation necessary regarding 230 V, 50 Hz and 275 V, 60 Hz for motors from size 315)
Duty types	S1, continuous duty Short-time duty S2, 10/30/60 min Duty type S3/S6, 25/40/60 %c.d.f.
Types of construction	IM B3, IM B35, IM B5 and derived types to IEC/EN 60034-7
Paint finish	Normal finish "Moderate", colour RAL 7031, blue-grey Special finish "Worldwide", colour RAL 7031, blue-grey
Vibration severity grade	Grade "A" as standard for machines with no special vibration requirements
Shaft ends	to DIN 748 (IEC 60072), balanced with half-key
Limit speeds	Please refer to the section of "Limit speeds" in catalogue section "Motors for converter-fed operation", Chapter 4.
Bearing design	Please refer to the tables of "Bearing design data" in catalogue section "Standard motors", Chapter 2.
Motor mass	Please refer to the technical selection lists.
Terminal boxes	Please refer to the section "Terminal boxes" in catalogue section "Standard motors", Chapter 2.
Documentation	An operating and maintenance manual, a terminal plan and a safety data sheet are supplied with each motor.
Tolerances	Please refer to the section "Tolerances" in catalogue section "Introduction", Chapter 1.
Options	Please refer to the section "Overview of modifications" in the catalogue section "Introduction", Chapter 1.

Motor selection data

Energy-optimised three-phase asynchronous generators

Active components, design for optimised efficiency based on Premium Efficiency IE3

Surface cooling, type of cooling IC 411, duty type S1, continuous duty,
thermal class 155 (F), degree of protection IP 55

Motor selection data														
Type	P _B	M _B	P _{auf}	S	n	η	cosφ _B	I _B	I _K /I _B	M _K /M _B	Q _n	n _{max}	J	m
IEC/DIN	kW	Nm	kW	kVA	rpm	%	-	A	-	-	kVAr	-	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version														
G41R 132 S4	5.5	34	6.1	6.6	1530	90.6	0.83	9.6	7.9	5.4	3.6	3600	0.035	90
G41R 132 M4	7.5	47	8.3	9.1	1530	90.9	0.82	13	8.3	5.5	5.2	3600	0.043	100
G41R 160 M4	11.0	69	12.2	13.4	1530	90.5	0.82	19.5	6.9	4.2	7.7	3000	0.078	125
G41R 160 L4	15.0	95	16.5	18.3	1515	91	0.82	26.5	10	5.4	10.5	3000	0.1567	175
G41R 180 M4	18.5	116	19.8	22.3	1520	93.4	0.83	32	7.8	4.2	12.5	3000	0.168	210
G41R 180 L4	22.0	138	23.7	26.5	1524	92.9	0.83	38.5	7.3	3.3	14.8	3000	0.203	240
G41R 200 L4	30.0	189	31.8	36.1	1512	94.2	0.83	52	7.2	3.5	20.1	3000	0.411	327
G41R 225 S4	37.0	233	39.6	43.5	1518	93.4	0.85	63	6.6	3.1	22.9	3000	0.4675	367
G41R 225 M4	45.0	284	47.6	53.6	1515	94.6	0.84	77.5	7.9	3.3	29.1	3000	0.619	450
G41R 250 M4	55.0	347	57.9	65.5	1514	95	0.84	94.5	7.6	2.6	35.6	3000	0.95	550
G41R 280 S4	75.0	474	78.7	90.4	1512	95.3	0.83	130	8.4	3.2	50.5	3000	1.1	605
G41R 280 M4	90.0	568	94.4	110	1512	95.3	0.82	158	8.8	3	63.0	3000	1.96	785
G41R 315 S4	110.0	694	115	138	1513	95.7	0.8	198	9.8	3.6	83.0	3000	1.96	760
G41R 315 M4	132.0	835	138	163	1510	95.5	0.81	235	8.5	3.2	96.0	3000	2.27	850
G42R 315 MX4	160.0	1013	167	190	1508	95.6	0.84	275	7.7	2.7	102	3000	4.02	1070
G41R 315 MY4	200.0	1263	208	235	1512	96	0.85	340	9.8	3.6	123	3000	4.82	1250
G41R 315 L4	250.0	1580	261	284	1511	95.8	0.88	410	8.8	3	135	3000	5.93	1450
G41R 315 LX4	315.0	1992	329	362	1510	95.7	0.87	523	10	3.4	178	3000	6.82	1630
G41R 355 M4	355.0	2247	368	413	1509	96.5	0.86	596	6.8	3.1	211	3000	7.90	2150
G42R 355 MX4	400.0			465								3000	9.5	2400
G42R 355 L4	500.0			559								3000	10	2500
Synchronous speed 1000 rpm – 6-pole version														
G41R 132 S6	3.0			4.0								2400	0.029	70
G41R 132 M6	4.0	37	4.6	5.4	1030	87	0.74	7.8	4.9	3.7	3.6	2400	0.043	75
G41R 132 MX6	5.5	51	6.2	7.4	1025	89	0.74	10.5	6	4.6	5	2400	0.053	105
G41R 160 M6	7.5	70	8.4	9.5	1025	89.5	0.79	13.5	5.8	3.7	5.8	2000	0.145	145
G41R 160 L6	11.0	103	12	12.6	1015	91.5	0.87	18	7.2	3.9	6.1	2000	0.166	168
G41R 180 L6	15.0	141	16.4	18.1	1013	91.7	0.83	26	7.0	3.9	10.1	2000	0.3396	214
G41R 200 L6	18.5	174	20.2	21.5	1018	91.6	0.86	31	7.2	4.1	11	2000	0.514	310
G41R 200 LX6	22.0	208	23.7	25.0	1010	92.7	0.88	36	8.5	5	11.9	2000	0.6476	321
G41R 225 M6	30.0	282	32.3	34.9	1016	92.9	0.86	50.5	7.7	3.9	17.8	2000	0.92	400
G41R 250 M6	37.0	349	39.8	43.0	1013	93	0.86	62.0	6.9	3.1	21.9	2000	1.48	545
G41R 280 S6	45.0	427	48	54.0	1006	93.5	0.84	77.5	9	3.8	30.0	2000	2.63	695
G41R 280 M6	55.0	521	58	65.0	1008	94.1	0.84	95	9.5	4.3	35.0	2000	3.33	815
G42R 315 S6	75.0	713	79	93.0	1005	94.5	0.81	134	8.5	3.5	55	2000	5.55	1060
G41R 315 M6	90.0	855	95	110.0	1005	95	0.82	158	8.8	3.6	63	2000	6	1140
G41R 315 MX6	110.0	1042	115	128.0	1008	95.3	0.86	185	8.2	3.2	65	2000	6.67	1210
G41R 315 L6	132.0	1253	139	153.0	1006	95	0.86	222	10.5	3.8	77	2000	8.6	1550
G41R 355 M6	160.0	1511	168	190.0	1011	95.3	0.84	275	6.8	2.8	102	2000	8.2	1850
G42R 355 MX6	200.0	1900	209	241.0	1005	95.5	0.83	348	9.7	2.8	134	2000	12.1	2340
G42R 355 LY6	250.0			305.0								2000	14	2400
G42R 355 L6	315.0			380.0								2000	14	2400

Energy-optimised three-phase asynchronous generators

Active components, design for optimised efficiency based on Premium Efficiency IE3

Surface cooling, type of cooling IC 411, duty type S1, continuous duty, thermal class 155 (F), degree of protection IP 55

Motor selection data														
Type	P_B	M_B	P_{auf}	S	n	η	$\cos\phi_B$	I_B	I_K/I_B	M_K/M_B	Q_n	n_{max}	J	m
IEC/DIN	kW	Nm	kW	kVA	rpm	%	-	A	-	-	kVAr	-	kgm ²	kg
Synchronous speed 750 rpm – 8-pole version														
G41R 132 M8	3.0	36.5	3.6	4.5	785	82.2	0.66	6.6	3.5	2.48	3.4	1800	0.043	74
G41R 160 M8	4.0	49.6	4.6	6.0	770	87.3	0.67	8.6	5.1	3.6	4.5	1800	0.113	114
G41R 160 MX8	5.5			8.5								1500	0.145	143
G41R 160 L8	7.5			10.0								1500	0.166	155
G41R 180 L8	11.0	136	12.2	15.3	770	89.8	0.72	22	4.8	3.1	10.6	1500	0.228	175
G41R 200 L8	15.0	186	16.6	19.5	772	90.2	0.77	28	4.9	3.1	12.5	1500	0.324	235
G41R 225 S8	18.5	230	20.5	24.0	768	90.4	0.77	34.5	5.8	2.6	15.3	1500	0.514	310
G41R 225 M8	22.0	275	24.0	29.7	764	91.8	0.74	43.0	6.1	3.1	20.0	1500	0.825	360
G41R 250 M8	30.0	374	32.6	39.5	767	92	0.76	57.0	5.6	2.8	25.7	1500	0.939	405
G41R 280 S8	37.0	465	40.0	48.0	760	92.8	0.77	69.5	5.9	3	30.6	1500	1.55	555
G41R 280 M8	45.0	565	48	56.0	760	93.5	0.8	81	8.8	3	33	1500	2.63	700
G42R 315 S8	55.0	695	59	72.0	756	94	0.76	104	7.3	3.3	46	1500	3.33	805
G41R 315 M8	75.0	945	79	96.0	758	94.9	0.78	139	7.3	2.9	60	1500	5.55	1120
G41R 315 MX8	90.0	1140	95	122.0	754	94.5	0.74	176	8.7	3.8	82	1500	6	1100
G41R 315 MY8	110.0	1382	116	138.0	760	94.6	0.8	198	6.8	2.7	83	1500	6.76	1250
G41R 315 L8	132.0	1665	139	171.0	757	94.7	0.77	247	8	3.2	109	1500	8.71	1180
G41R 355 M8	200.0	2533	210	263.0	754	95.4	0.76	380	7	3.3	171	1500	9.5	1850
G42R 355 MX8	250.0			300.0								1500	13.4	2200
G42R 355 L8	280.0			370.0								1500	15.8	2400

Energy-optimised three-phase asynchronous generators
Active components, design for optimised efficiency based on High Efficiency IE2

Surface cooling, type of cooling IC 411, duty type S1, continuous duty,
 thermal class 155 (F), degree of protection IP 55

Motor selection data														
Type	P _B	M _B	P _{auf}	S	n	η	cosφ _B	I _B	I _A /I _B	M _K /M _B	Q _n	η _{max}	J	m
IEC/DIN	kW	Nm	kW	kVA	rpm	%	-	A	-	-	kVAr	-	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version														
GE1R 112 M4	4.0	25	4.55	5.1	1531	87.9	0.78	7.4	8.3	8.7	3.2	3.600	0.017	56
GE1R 132 S4	5.5	35	6.1	6.2	1535	90.1	0.85	8.9	6.5	6.5	2.9	3.600	0.035	89
GE1R 132 M4	7.5	46.5	8.3	9.7	1530	90.3	0.78	14	7.7	6.5	6.2	3.600	0.035	88
GE1R 160 M4	11.0	68.8	12.18	13.4	1527	90.3	0.82	19.5	7.5	4.6	7.7	3.000	0.078	122
GE1R 160 L4	15.0	94	16.4	18.0	1524	91.2	0.84	26.0	8.6	5.2	9.9	3.000	0.115	160
GE1R 180 M4	18.5	116.2	19.9	22.2	1520	93.0	0.84	32.0	7.5	4.0	12.2	3.000	0.168	207
GE1R 180 L4	22.0	137.8	23.6	26.0	1525	93.1	0.85	37.5	5.8	3.7	13.9	3.000	0.168	215
GE1R 200 L4	30.0	188.1	32.1	35.2	1523	93.6	0.85	51.0	6.2	3.1	18.4	3.000	0.275	277
GE1R 225 S4	37.0	231.7	39.7	43.6	1525	93.2	0.85	63.0	6.2	3.1	23.2	3.000	0.313	313
GE1R 225 M4	45	281	48.3	57.5	1530	93.1	0.84	83	7.9	2.4	35.8	3.000	0.525	390
GE1R 250 M4	55	345	58.5	70.0	1522	94.0	0.84	101	8.0	2.3	43.3	3.000	0.95	535
GE1R 280 S4	75	472	79.6	94.9	1519	94.2	0.84	137	7.2	2.1	58.2	3.000	0.95	550
GE1R 280 M4	90	565	95.4	114	1520	94.3	0.84	164	7.6	2.3	70.0	3.000	1.10	610
GE1R 315 S4	110	695	116	141	1512	94.8	0.82	204	8.5	2.7	88.2	3.000	1.96	760
GE1R 315 M4	132	830	139	168	1519	95.0	0.83	242	8.2	2.3	104	3.000	2.27	850
GE1R 315 MX4	160	1007	168	200	1517	95.0	0.84	289	7.4	2.2	120	3.000	2.73	975
GE1R 315 MY4	200	1259	210	242	1517	95.1	0.87	349	8.5	2.5	136	3.000	4.82	1270
GE1R 315 L4	250	1579	262	298	1512	95.4	0.88	430	9.0	2.7	162	3.000	5.93	1450
GE1R 315 LX4	315	1991	330	376	1511	95.4	0.88	542	9.0	2.6	205	3.000	6.82	1630
GE2R 355 M4	355	2248	372	427	1508	95.5	0.87	617	8.0	2.7	237	3.000	7.90	2150
GE2R 355 MX4	400	2531	419	476	1509	95.5	0.88	687	8.5	3.0	258	3.000	9.50	2400
GE2R 355 LY4	450	2852	471	548	1507	95.5	0.86	791	8.5	2.9	313	3.000	10.00	2500
GE2R 355 L4	500	3164	524	624	1509	95.5	0.84	900	8.0	3.0	373	3.000	10.00	2500
Synchronous speed 1000 rpm – 6-pole version														
GE1R 132 S6	3.0	27.7	3.58	4.2	1035	83.8	0.72	6	4.6	5.1	2.9	2.400	0.023	55
GE1R 132 M6	4.0	37.1	4.6	5.5	1030	87.1	0.72	8	4.6	3.5	3.8	2.400	0.043	74
GE1R 132 MX6	5.5	51.1	6.4	7.3	1028	85.9	0.76	10.5	5.2	3.8	4.7	2.400	0.053	87
GE1R 160 M6	7.5	70	8.56	10.0	1023	87.6	0.75	14.5	5.82	4.0	6.7	2.400	0.113	118
GE1R 160 L6	11.0	102.5	12.4	14.0	1025	89.0	0.78	20.5	5.7	3.6	8.7	2.000	0.145	137
GE1R 180 L6	15.0	139.8	16.7	17.0	1025	89.7	0.88	24.5	5.8	3.4	8.0	2.000	0.228	185
GE1R 200 L6	18.5	172.5	20.4	21.5	1024	90.7	0.86	31.0	6	3.4	11.0	2.000	0.268	208
GE1R 200 LX6	22.0	205.4	24	24.9	1023	91.6	0.88	36.0	6.1	3.3	11.7	2.000	0.443	272
GE1R 225 M6	30.0	282.3	32.4	35.7	1015	92.5	0.84	51.5	7.17	3.6	19.3	2.000	0.825	365
GE1R 250 M6	37	346	40.1	47.1	1021	92.2	0.85	68	6.4	2.4	29.2	2.000	1.28	480
GE1R 280 S6	45	421	48.4	55.8	1020	93.0	0.87	80.5	6.5	2.4	32.9	2.000	1.48	560
GE1R 280 M6	55	516	58.8	69.3	1018	93.5	0.85	100	7.6	2.5	42.2	2.000	2.63	710
GE1R 315 S6	75	706	79.9	92.1	1014	93.9	0.87	133	7.8	2.5	53.5	2.000	3.33	804
GE1R 315 M6	90	851	95.7	109	1010	94.0	0.88	157	7.5	2.5	61.5	2.000	3.60	865
GE1R 315 MX6	110	1036	117	134	1014	94.3	0.87	194	7.5	2.3	76.5	2.000	6.67	1210
GE1R 315 MY6	132	1248	140	160	1010	94.6	0.87	231	7.5	2.2	90.4	2.000	6.67	1250
GE1R 315 L6	160	1510	169	192	1012	94.8	0.88	277	7.5	2.4	106	2.000	8.60	1430
GE1R 315 LX6	200	1885	211	245	1013	95.0	0.86	353	7.0	2.2	142	2.000	8.60	1460
GE2R 355 M6	250	2371	263	313	1007	95.0	0.84	452	7.0	2.2	188	2.000	8.20	1850
GE2R 355 MX6	315	2973	331	385	1012	95.2	0.86	555	7.0	2.2	221	2.000	12.1	2200
GE2R 355 LY6	355	3367	374	485	1007	95.0	0.77	700	7.5	2.6	330	2.000	14.0	2400

Energy-optimised three-phase asynchronous generators

Active components, design for optimised efficiency based on High Efficiency IE2

Surface cooling, type of cooling IC 411, duty type S1, continuous duty,
thermal class 155 (F), degree of protection IP 55

Motor selection data														
Type	P_B	M_B	P_{auf}	S	n	η	$\cos\phi_B$	I_B	I_A/I_B	M_K/M_B	Q_n	η_{max}	J	m
IEC/DIN	kW	Nm	kW	kVA	rpm	%	-	A	-	-	kVAr	-	kgm ²	kg
Synchronous speed 750 rpm – 8-pole version														
GE1R 132 S8	2.20	26.6	2.86	3.74	790	76.8	0.59	5.40	3.40	3.60	3.00	1.800	0.023	53
GE1R 132 M8	3.00	36.6	3.73	4.85	783	80.5	0.62	7.00	3.60	2.80	3.80	1.800	0.043	70
GE1R 160 M8	4.00	48.9	4.91	6.58	781	81.5	0.61	9.50	4.50	3.30	4.50	1.800	0.053	86
GE1R 160 MX8	5.50	67.7	6.47	8.66	776	85.0	0.63	12.50	4.20	2.90	6.70	1.800	0.113	114
GE1R 160 L8	7.5	92.9	8.67	11.1	771	86.5	0.68	16.0	4.5	3.2	8.2	1.500	0.145	136
GE1R 180 L8	11.0	136.3	12.3	13.6	771	89.6	0.81	19.5	4.9	2.9	8.0	1.500	0.228	175
GE1R 200 L8	15.0	185.8	16.8	18.7	771	89.5	0.80	27.0	4.9	3.0	11.2	1.500	0.228	200
GE1R 225 S8	18.5	230	23.1	23.1	768	90.8	0.80	33.5	5.4	3.2	14.5	1.500	0.440	265
GE1R 225 M8	22	273	24.3	31.2	770	90.6	0.78	45	5.6	2.6	22.1	1.500	0.825	380
GE1R 250 M8	30	374	32.6	41.2	767	92.1	0.79	59.5	5.0	2.1	28.3	1.500	1.350	480
GE1R 280 S8	37	462	40.1	50.9	765	92.2	0.79	73.5	6.0	2.5	35.0	1.500	1.55	550
GE1R 280 M8	45	563	48.5	61.3	763	92.7	0.79	88.5	6.7	2.5	41.6	1.500	2.63	690
GE1R 315 S8	55	696	59.7	74.8	755	92.2	0.80	108	6.3	2.3	50.7	1.500	2.63	690
GE1R 315 M8	75	942	80.2	99.1	760	93.5	0.81	143	6.0	2.1	64.8	1.500	3.6	880
GE1R 315 MX8	90	1131	97.7	121	760	92.1	0.81	174	6.0	2.2	80.9	1.500	6	1050
GE1R 315 MY8	110	1382	117	145	760	93.8	0.81	209	6.5	2.4	94.5	1.500	6.76	1250
GE1R 315 L8	132	1659	140	168	760	94.4	0.83	243	7.5	2.5	104	1.500	8.71	1430
GE1R 315 LX8	160	2011	170	212	760	94.2	0.80	306	7.2	2.5	139	1.500	8.71	1430
GE2R 355 M8	200	2530	211	274	755	94.7	0.77	396	a.A.	a.A.	187	1.500	9.5	1850
GE2R 355 MX8	250	3158	261	315	756	95.8	0.83	454	7.0	2.6	192	1.500	13.4	2200
GE2R 355 LY8	280	3532	295	379	757	94.8	0.78	547	a.A.	a.A.	255	1.500	15.8	2400

Three-phase asynchronous generators

Surface cooling, type of cooling IC 411, duty type S1, continuous duty, thermal class 155 (F), degree of protection IP 55

Motor selection data														
Typ		P _B	P _{auf}	S	n	η	cosφ _B	I _B	I _A /I _B	M _K /M _B	Q _n	n _{max}	J	m
IEC/DIN	progressive	kW	kW	kVA	rpm	%	-	A	-	-	kVAr	-	kgm ²	kg
Synchronous speed 3000 rpm – 2-pole version														
G21R 132 S2	G20R 112 MY2	5.5	6.58	7.3	3115	83.55	0.76	10.5	5.6	6.2	4.8	7.000	0.0081	52
G21R 132 SX2	G20R 112 M2	7.5	8.6	9.7	3087	87.21	0.77	14.0	7.3	6.9	6.2	7.000	0.011	57
G21R 160 M2	G20R 132 M2	11.0	12.63	12.5	3087	87.11	0.88	18.1	6.5	5.23	6.0	6.000	0.0258	81
G21R 160 MX2	G20R 160 S2	15.0	16.85	16.9	3081	89.03	0.89	24.3	5.5	3.52	7.7	6.000	0.0575	118
G21R 160 L2	G20R 160 M2	18.5	20.56	19.8	3059	90	0.93	28.6	7.4	4.33	7.2	6.000	0.0675	134
G21R 180 M2	G20R 180 S2	22.0	24.05	24.9	3055	91.47	0.88	36.0	7.2	4.7	11.8	6.000	0.105	165
G21R 200 L2	G20R 180 M2	30.0	32.57	34.1	3065	92.1	0.88	49.0	7.2	3.1	16.2	5.000	0.128	195
G21R 200 LX2	G20R 200 M2	37.0	39.74	42.3	3046	93.1	0.87	61.1	6.2	3.7	20.5	5.000	0.193	255
G21R 225 M2	G20R 200 L2	45.0	48	49.9	3050	93.75	0.90	72.0	7.7	4.4	21.5	5.000	0.22	290
Synchronous speed 1500 rpm – 4-pole version														
G21R 132 S4	G20R 112 M4	5.5	6.45	6.62	1548	85.23	0.83	9.6	6.0	7	3.7	3.600	0.01500	50
G21R 132 M4	G20R 132 S4	7.5	8.72	9.41	1553	86	0.80	13.6	4.6	3.3	5.7	3.600	0.0280	70
G21R 160 M4	G20R 132 M4	11.0	12.47	13.58	1544	88.25	0.81	19.6	5.8	4.7	8.0	3.600	0.0350	92
G21R 160 L4	G20R 160 S4	15.0	16.72	17.95	1535	89.7	0.84	25.9	5.8	3.7	9.9	3.600	0.0780	120
G21R 180 M4	G20R 160 M4	18.5	20.72	22.7	1532	89.3	0.81	32.8	6.6	4	13.2	3.000	0.0900	136
G21R 180 L4	G20R 180 S4	22	24.06	26.9	1536	91.46	0.82	38.8	5.1	2.9	15.5	3.000	0.1380	170
G21R 200 L4	G20R 180 M4	30	33	36.28	1537	91.63	0.83	52.4	5.1	2.7	20.4	3.000	0.1680	200
G21R 225 S4	G20R 200 M4	37	40	44.63	1530	92.83	0.83	64.4	5.4	2.7	25.0	3.000	0.2750	270
G21R 225 M4	G20R 200 L4	45	48	53.79	1530	93.25	0.84	77.6	5.5	2.7	29.5	3.000	0.3130	300
G21R 250 M4	G20R 225 M4	55	59	65.5	1522	93.5	0.84	94.5	7.0	3.1	35.6	3.000	0.5250	375
G21R 280 S4	G20R 250 S4	75	80	89.5	1519	94.1	0.84	129.0	7.0	2.9	48.8	3.000	0.9500	520
G21R 280 M4	G20R 250 M4	90	95	106	1520	94.6	0.85	153.0	7.0	2.9	56.0	3.000	1.10	580
G21R 315 S4	G20R 280 S4	110	117	134	1512	94.4	0.82	194.0	10.5	3.8	77.0	3.000	1.96	740
G21R 315 M4	G20R 280 M4	132	140	155	1519	94.5	0.85	224.0	6.6	2.2	81.0	3.000	2.27	840
G21R 315 MX4	G20R 315 S4	160	168	188	1517	95	0.85	272.0	7.5	2.5	99.0	3.000	2.73	1000
G21R 315 MY4	G20R 315 M4	200	211	233	1517	95	0.86	336.0	6.7	2.4	120.0	3.000	4.82	1200
G21R 315 L 4	G20R 315 L4	250	262	287	1512	95.5	0.87	415.0	8.0	2.7	141.0	3.000	5.93	1450
G21R 315 LX4	G20R 315 LX4	315	329	366	1511	95.8	0.86	529.0	8.3	3	186.0	3.000	6.82	1630
G22R 355 MY4		315	330	389	1508	95.5	0.81	561.0	7.0	3.5	228	3.000	5.60	1950
G22R 355 M4		355	372	413	1509	95.5	0.86	596.0	6.8	3.1	211	3.000	7.9	2150
G22R 355 MX4		400	419	465	1507	95.5	0.86	671.0	8.6	3.9	273	3.000	9.5	2400
G22R 355 LY4		420	437	505	1509	96.2	0.83	730.0	8.5	3.5	282	3.000	10.0	2500
Synchronous speed 1000 rpm – 6-pole version														
G21R 132 S6	G20R 112 M6	3.0	3.74	4.54	1040	80.24	0.66	6.6	5.0	5.5	3.4	2.400	0.0180	46
G21R 132 M6	G20R 112 MX 6	4.0	4.89	5.9	1037	81.88	0.68	8.5	5.2	5.5	4.3	2.400	0.0230	53
G21R 132 MX6	G20R 132 S6	5.5	6.62	7.89	1033	83.03	0.70	11.4	4.5	3.7	5.7	2.400	0.0430	70
G21R 160 M6	G20R 132 M6	7.5	8.81	9.94	1036	85.15	0.75	14.4	4.6	3.6	6.5	2.400	0.0530	86
G21R 160 L6	G20R 160 S6	11.0	12.74	13.49	1035	86.34	0.82	19.5	4.6	2.8	7.8	2.400	0.1130	114
G21R 180 L6	G20R 160 M6	15.0	17.08	18.29	1032	87.8	0.82	26.4	4.9	3.2	10.5	2.000	0.1450	136
G21R 200 L6	G20R 180 S6	18.5	20.77	21.37	1029	89.07	0.87	30.8	5.2	3.2	10.7	2.000	0.2280	175
G21R 200 LX6	G20R 180 M6	22	24.6	27.14	1027	89.42	0.81	39.2	5.4	3.4	15.9	2.000	0.2680	200
G21R 225 M6	G20R 200 M6	30	33.12	34.93	1029	90.57	0.86	50.4	5.4	3.1	17.9	2.000	0.4430	284
G21R 250 M6	G20R 225 M6	37	40	43.4	1021	91.8	0.85	63.0	6.0	3.7	22.7	2.000	0.8250	375
G21R 280 S6	G20R 250 S6	45	49	55	1020	92	0.83	78.5	6.0		31.6	2.000	1.28	465
G21R 280 M6	G20R 250 M6	60	65	69.1	1018	91.2	0.86	101.0	6.0	2.5	34.3	2.000	1.48	575
G21R 315 S6	G20R 280 S6	75	80	87	1014	93.5	0.86	126.0	6.5	2.9	44.0	2.000	2.63	690
G21R 315 M6	G20R 280 M6	90	96	107	1010	93.8	0.84	155.0	7.2	3.1	58.0	2.000	3.33	800
G21R 315 MX6	G20R 315 S6	110	116	126	1014	94.5	0.87	182.0	6.5	2.7	61.0	2.000	3.60	880
G21R 315 MY6	G20R 315 M6	132	140	157	1010	94.5	0.84	227.0	6.6	2.6	85.0	2.000	6.00	1050
G21R 315 L6	G20R 315 L6	160	169	188	1012	94.5	0.85	272.0	6.5	2.5	99.0	2.000	6.67	1250
G21R 315 LX6	G20R 315 LX6	200	211	235	1013	95	0.85	340.0	7.7	2.6	124.0	2.000	8.6	1460
G22R 355 MY6		200	209	235	1007	95.5	0.85	340.0	6.9	2.5	124	2.000	8.1	1550
G22R 355 M6		250	264	305	1012	94.8	0.82	440.0	7.0	2.8	175	2.000	8.2	1650
G22R 355 MX6		315	329	375	1007	95.7	0.84	541.0	7.9	3	203	2.000	12.1	2200
G22R 355 LY6		355	371	418	1007	95.8	0.85	603.0	8.0	3	220	2.000	14.0	2400

Three-phase asynchronous generators

Surface cooling, type of cooling IC 411, duty type S1, continuous duty, thermal class 155 (F), degree of protection IP 55

Motor selection data														
Typ		P_B	P_{auf}	S	n	η	$\cos\phi_B$	I_B	I_A/I_B	M_A/M_B	Q_n	n_{max}	J	m
IEC/DIN	progressive	kW	kW	kVA	rpm	%	-	A	-	-	kVAr	-	kgm ²	kg
Synchronous speed 750 rpm – 8-pole version														
G21R 132 S8	G20R 112 M8	2.2	3.1	4.3	793	70.3	0.51	6.2	4.0	6.3	3.0	1.800	0.01800	46
G21R 132 M8	G20R 112 MX8	3.0	3.6	5.5	793	84	0.54	8.0	4.0		4.6	1.800	0.0230	53
G21R 160 M8	G20R 132 S8	4.0	5.1	6.7	787	77.9	0.59	9.8	4.0	3.5	5.4	1.800	0.0430	70
G21R 160 MX8	G20R 132 M8	5.5	6.9	8.9	790	80	0.62	13.0	4.0		7.0	1.800	0.0530	86
G21R 160 L8	G20R 160 S8	7.5	9.3	12.4	777	80.3	0.60	18.0	4.5	3.9	9.9	1.800	0.1130	114
G21R 180 L8	G20R 160 M8	11.0	13.3	17.6	781	82.7	0.62	25.5	4.5	3.7	13.7	1.500	0.1450	136
G21R 200 L8	G20R 180 S8	15.0	17.4	22.3	774	86.1	0.67	32.5	5.0	3.6	16.5	1.500	0.228	175
	G20R 180 M8	18.5	21	26.3	780	88	0.70	38.0	5.0		18.7	1.500	0.268	200
G21R 225 S8		18.5	21	26.3	780	88	0.70	38.0	5.0		18.7	1.500	0.440	265
G21R 225 M8	G20R 200 M8	22	25	30.9	770	89	0.71	44.5	5.0		21.7	1.500	0.440	265
G21R 250 M8	G20R 225 M8	30	33.5	39.8	767	89.5	0.75	57.5	5.5	3.8	26.2	1.500	0.825	360
G21R 280 S8	G20R 250 S8	37	41	50	765	91	0.74	72.0	5.5		33.6	1.500	1.35	465
G21R 280 M8	G20R 250 M8	45	49	60	763	92	0.75	86.5	5.5	3.4	39.7	1.500	1.55	520
G21R 315 S8	G20R 280 S8	55	59	75	755	93	0.73	109.0	6.7	4.5	51.0	1.500	2.63	690
G21R 315 M8	G20R 280 M8	75	80	97	760	93.5	0.77	141.0	6.4	2.8	62.0	1.500	3.33	800
G21R 315 MX8	G20R 315 S8	90	96	120	760	93.5	0.75	173.0	6.0	2.6	79.0	1.500	3.60	880
G21R 315 MY8	G20R 315 M8	110	118	143	760	93.5	0.77	206.0	6.2	2.5	91.0	1.500	6.00	1050
G21R 315 L8	G20R 315 L8	132	141	165	760	93.5	0.80	238.0	6.5	2.7	99.0	1.500	6.76	1250
G21R 315 LX8	G20R 315 LX8	160	170	200	760	94	0.80	289.0	7.0	2.7	120.0	1.500	8.71	1430
G22R 355 MY8		160	168	213	755	95.2	0.75	308.0	7.0	3	141	1.500	9.3	1500
G22R 355 M8		200	211	256	756	94.8	0.78	370.0	6.0	2.9	160	1.500	9.5	1600
G22R 355 MX8		250	262	298	757	95.3	0.84	361.0	5.7	2.6	162	1.500	13.4	2200
G22R 355 LY8		280	295	394	756	95	0.71	569.0	7.2	3	278	1.500	15.8	2400

Terminal boxes, bearings and dimensions

The asynchronous generators G4.R are identical to the series IE3-W4.R.

For further information regarding the terminal boxes, bearings and dimensions, please refer to Chapter 2.

Assignment table			
Type	Type	J	m
G41R	IE3-W4.R	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version			
G41R 112 M4	IE3-W41R 112 M4	0.02	65
G41R 132 S4	IE3-W41R 132 S4	0.035	90
G41R 132 M4	IE3-W41R 132 M4	0.043	100
G41R 160 M4	IE3-W41R 160 M4	0.078	125
G41R 160 L4	IE3-W41R 160 L4	0.1567	175
G41R 180 M4	IE3-W41R 180 M4	0.168	210
G41R 180 L4	IE3-W41R 180 L4	0.203	240
G41R 200 L4	IE3-W41R 200 L4	0.411	327
G41R 225 S4	IE3-W41R 225 S4	0.4675	367
G41R 225 M4	IE3-W41R 225 M4	0.619	450
G41R 250 M4	IE3-W41R 250 M4	0.95	550
G41R 280 S4	IE3-W41R 280 S4	1.1	617
G41R 280 M4	IE3-W41R 280 M4	1.96	785
G41R 315 S4	IE3-W41R 315 S4	1.96	760
G41R 315 M4	IE3-W41R 315 M4	2.27	850
G42R 315 MX4	IE3-W42R 315 MX4	4.02	1070
G41R 315 MY4	IE3-W41R 315 MY4	4.82	1250
G41R 315 L4	IE3-W41R 315 L4	5.93	1450
G41R 315 LX4	IE3-W41R 315 LX4	6.82	1630
G41R 355 M4	IE3-W41R 355 M4	7.90	2150
G42R 355 MX4	IE3-W42R 355 MX4	9.5	2400
G42R 355 L4	IE3-W42R 355 L4	10	2500

Synchronous speed 750 rpm – 8-pole version			
G41R 132 M8	IE3-W41R 132 M8	0.043	74
G41R 160 M8	IE3-W41R 160 M8	0.113	114
G41R 160 MX8	IE3-W41R 160 MX8	0.145	143
G41R 160 L8	IE3-W41R 160 L8	0.166	155
G41R 180 L8	IE3-W41R 180 L8	0.228	175
G41R 200 L8	IE3-W41R 200 L8	0.324	235
G41R 225 S8	IE3-W41R 225 S8	0.514	310
G41R 225 M8	IE3-W41R 225 M8	0.825	360
G41R 250 M8	IE3-W41R 250 M8	0.92	400
G41R 280 S8	IE3-W41R 280 S8	1.55	520
G41R 280 M8	IE3-W41R 280 M8	2.63	700
G42R 315 S8	IE3-W42R 315 S8	3.33	800
G41R 315 M8	IE3-W41R 315 M8	5.55	1060
G41R 315 MX8	IE3-W41R 315 MX8	6	1100
G41R 315 L8	IE3-W41R 315 L8	6.76	1180
G41R 355 M8	IE3-W41R 355 M8	8.71	1450
G42R 355 MX8	IE3-W42R 355 MX8	13.4	2200
G42R 355 L8	IE3-W42R 355 L8	15.8	2400

Type	Type	J	m
G41R	IE3-W4.R	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version			
G41R 132 S6	IE3-W41R 132 S6	0.029	70
G41R 132 M6	IE3-W41R 132 M6	0.043	75
G41R 132 MX6	IE3-W41R 132 MX6	0.053	105
G41R 160 M6	IE3-W41R 160 M6	0.145	145
G41R 160 L6	IE3-W41R 160 L6	0.166	168
G41R 180 L6	IE3-W41R 180 L6	0.3396	214
G41R 200 L6	IE3-W41R 200 L6	0.514	310
G41R 200 LX6	IE3-W41R 200 LX6	0.6476	321
G41R 225 M6	IE3-W41R 225 M6	0.92	400
G41R 250 M6	IE3-W41R 250 M6	1.48	545
G41R 280 S6	IE3-W41R 280 S6	2.63	695
G41R 280 M6	IE3-W41R 280 M6	3.33	815
G42R 315 S6	IE3-W42R 315 S6	5.55	1060
G41R 315 M6	IE3-W41R 315 M6	6	1100
G41R 315 MX6	IE3-W41R 315 MX6	6.67	1210
G41R 315 L6	IE3-W41R 315 L6	8.6	1550
G41R 355 M6	IE3-W41R 355 M6	8.2	1850
G42R 355 MX6	IE3-W42R 355 MX6	12.1	2200
G42R 355 LY6	IE3-W42R 355 LY6	14	2400
G42R 355 L6	IE3-W42R 355 L6	14	2400

The asynchronous generators GE.R are identical to the series IE2-WE.R.

For further information regarding the terminal boxes, bearings and dimensions, please refer to Chapter 2.

Assignment table			
Type	Type	J	m
GE.R	IE2-WE.R	kgm ²	kg
Synchronous speed 1500 rpm – 4-pole version			
GE1R 112 M4	IE2-WE1R 112M 4	0.017	56
GE1R 132 S4	IE2-WE1R 132S 4	0.035	87
GE1R 132 M4	IE2-WE1R 132M 4	0.035	88
GE1R 160 M4	IE2-WE1R 160M 4	0.078	122
GE1R 160 L4	IE2-WE1R 160L 4	0.115	160
GE1R 180 M4	IE2-WE1R 180M 4	0.168	207
GE1R 180 L4	IE2-WE1R 180L 4	0.168	215
GE1R 200 L4	IE2-WE1R 200L 4	0.275	277
GE1R 225 S4	IE2-WE1R 225S 4	0.313	313
GE1R 225 M4	IE2-WE1R 225 M4	0.525	390
GE1R 250 M4	IE2-WE1R 250 M4	0.95	535
GE1R 280 S4	IE2-WE1R 280 S4	0.95	550
GE1R 280 M4	IE2-WE1R 280 M4	1.10	610
GE1R 315 S4	IE2-WE1R 315 S4	1.96	760
GE1R 315 M4	IE2-WE1R 315 M4	2.27	850
GE1R 315 MX4	IE2-WE1R 315 MX4	2.73	975
GE1R 315 MY4	IE2-WE1R 315 MY4	4.82	1270
GE1R 315 L4	IE2-WE1R 315 L4	5.93	1450
GE1R 315 LX4	IE2-WE1R 315 LX4	6.82	1630
GE2R 355 M4	IE2-WE2R 355 M4	7.90	2150
GE2R 355 MX4	IE2-WE2R 355 MX4	9.50	2400
GE2R 355 LY4	IE2-WE2R 355 LY4	10.00	2500
GE2R 355 L4	IE2-WE2R 355 L4	10.00	2500

Synchronous speed 750 rpm – 8-pole version			
GE1R 132 S8	IE2-WE1R 132S 8	0.023	53
GE1R 132 M8	IE2-WE1R 132M 8	0.043	70
GE1R 160 M8	IE2-WE1R 160M 8	0.053	86
GE1R 160 MX8	IE2-WE1R 160MX 8	0.113	114
GE1R 160 L8	IE2-WE1R 160L 8	0.145	136
GE1R 180 L8	IE2-WE1R 180L 8	0.228	175
GE1R 200 L8	IE2-WE1R 200L 8	0.228	200
GE1R 225 S8	IE2-WE1R 225S 8	0.440	265
GE1R 225 M8	IE2-WE1R 225 M8	0.825	380
GE1R 250 M8	IE2-WE1R 250 M8	1.350	480
GE1R 280 S8	IE2-WE1R 280 S8	1.55	550
GE1R 280 M8	IE2-WE1R 280 M8	2.63	690
GE1R 315 S8	IE2-WE1R 315 S8	2.63	690
GE1R 315 M8	IE2-WE1R 315 M8	3.6	880
GE1R 315 MX8	IE2-WE1R 315 MX8	6	1050
GE1R 315 MY8	IE2-WE1R 315 MY8	6.76	1250
GE1R 315 L8	IE2-WE1R 315 L8	8.71	1430
GE1R 315 LX8	IE2-WE1R 315 LX8	8.71	1430
GE2R 355 M8	IE2-WE2R 355 M8	9.5	1850
GE2R 355 MX8	IE2-WE2R 355 MX8	13.4	2200
GE2R 355 LY8	IE2-WE2R 355 LY8	15.8	2400

Type	Type	J	m
GE.R	IE2-WE.R	kgm ²	kg
Synchronous speed 1000 rpm – 6-pole version			
GE1R 132 S6	IE2-WE1R 132S 6	0.023	55
GE1R 132 M6	IE2-WE1R 132M 6	0.043	74
GE1R 132 MX6	IE2-WE1R 132MX 6	0.053	87
GE1R 160 M6	IE2-WE1R 160M 6	0.113	118
GE1R 160 L6	IE2-WE1R 160L 6	0.145	137
GE1R 180 L6	IE2-WE1R 180L 6	0.228	185
GE1R 200 L6	IE2-WE1R 200L 6	0.268	208
GE1R 200 LX6	IE2-WE1R 200LX 6	0.443	272
GE1R 225 M6	IE2-WE1R 225M 6	0.825	365
GE1R 250 M6	IE2-WE1R 250 M6	1.28	480
GE1R 280 S6	IE2-WE1R 280 S6	1.48	560
GE1R 280 M6	IE2-WE1R 280 M6	2.63	710
GE1R 315 S6	IE2-WE1R 315 S6	3.33	804
GE1R 315 M6	IE2-WE1R 315 M6	3.60	865
GE1R 315 MX6	IE2-WE1R 315 MX6	6.67	1210
GE1R 315 MY6	IE2-WE1R 315 MY6	6.67	1250
GE1R 315 L6	IE2-WE1R 315 L6	8.60	1430
GE1R 315 LX6	IE2-WE1R 315 LX6	8.60	1460
GE2R 355 M6	IE2-WE2R 355 M6	8.20	1850
GE2R 355 MX6	IE2-WE2R 355 MX6	12.1	2200
GE2R 355 LY6	IE2-WE2R 355 LY6	14.0	2400

The asynchronous generators G21R are identical to the series K21R.

For further information regarding the terminal boxes, bearings and dimensions, please refer to Chapter 2.

Assignment table

Type	Type	J	m		
IEC/DIN	Progressive assignment				
G21R/G22R	K21R/K22R	G20R	K20R		
Synchronous speed 3000 rpm – 2-pole version					
		kgm ²	kg		
G21R 132 S2	K21R 132 S2	G20R 112 MY2	K20R 112 MY2	0.0081	52
G21R 132 SX2	K21R 132 SX2	G20R 112 M2	K20R 112 M2	0.011	57
G21R 160 M2	K21R 160 M2	G20R 132 M2	K20R 132 M2	0.0258	81
G21R 160 MX2	K21R 160 MX2	G20R 160 S2	K20R 160 S2	0.0575	118
G21R 160 L2	K21R 160 L2	G20R 160 M2	K20R 160 M2	0.0675	134
G21R 180 M2	K21R 180 M2	G20R 180 S2	K20R 180 S2	0.105	165
G21R 200 L2	K21R 200 L2	G20R 180 M2	K20R 180 M2	0.128	195
G21R 200 LX2	K21R 200 LX2	G20R 200 M2	K20R 200 M2	0.193	255
G21R 225 M2	K21R 225 M2	G20R 200 L2	K20R 200 L2	0.22	290
Synchronous speed 1500 rpm – 4-pole version					
G21R 132 S4	K21R 132 S4	G20R 112 M4	K20R 112 M4	0.01500	50
G21R 132 M4	K21R 132 M4	G20R 132 S4	K20R 132 S4	0.0280	70
G21R 160 M4	K21R 160 M4	G20R 132 M4	K20R 132 M4	0.0350	92
G21R 160 L4	K21R 160 L4	G20R 160 S4	K20R 160 S4	0.0780	120
G21R 180 M4	K21R 180 M4	G20R 160 M4	K20R 160 M4	0.0900	136
G21R 180 L4	K21R 180 L4	G20R 180 S4	K20R 180 S4	0.1380	170
G21R 200 L4	K21R 200 L4	G20R 180 M4	K20R 180 M4	0.1680	200
G21R 225 S4	K21R 225 S4	G20R 200 M4	K20R 200 M4	0.2750	270
G21R 225 M4	K21R 225 M4	G20R 200 L4	K20R 200 L4	0.3130	300
G21R 250 M4	K21R 250 M4	G20R 225 M4	K20R 225 M4	0.5250	375
G21R 280 S4	K21R 280 S4	G20R 250 S4	K20R 250 S4	0.9500	520
G21R 280 M4	K21R 280 M4	G20R 250 M4	K20R 250 M4	1.10	580
G21R 315 S4	K21R 315 S4	G20R 280 S4	K20R 280 S4	1.96	740
G21R 315 M4	K21R 315 M4	G20R 280 M4	K20R 280 M4	2.27	840
G21R 315 MX4	K21R 315 MX4	G20R 315 S4	K20R 315 S4	2.73	1000
G21R 315 MY4	K21R 315 MY4	G20R 315 M4	K20R 315 M4	4.82	1200
G21R 315 L 4	K21R 315 L 4	G20R 315 L4	K20R 315 L4	5.93	1450
G21R 315 LX4	K21R 315 LX4	G20R 315 LX4	K20R 315 LX4	6.82	1630
G22R 355 MY4	K22R 355 MY4			5.60	1950
G22R 355 M4	K22R 355 M4			7.9	2150
G22R 355 MX4	K22R 355 MX4			9.5	2400
G22R 355 LY4	K22R 355 LY4			10.0	2500
Synchronous speed 1000 rpm – 6-pole version					
G21R 132 S6	K21R 132 S6	G20R 112 M6	K20R 112 M6	0.0180	46
G21R 132 M6	K21R 132 M6	G20R 112 MX 6	K20R 112 MX 6	0.0230	53
G21R 132 MX6	K21R 132 MX6	G20R 132 S6	K20R 132 S6	0.0430	70
G21R 160 M6	K21R 160 M6	G20R 132 M6	K20R 132 M6	0.0530	86
G21R 160 L6	K21R 160 L6	G20R 160 S6	K20R 160 S6	0.1130	114
G21R 180 L6	K21R 180 L6	G20R 160 M6	K20R 160 M6	0.1450	136
G21R 200 L6	K21R 200 L6	G20R 180 S6	K20R 180 S6	0.2280	175
G21R 200 LX6	K21R 200 LX6	G20R 180 M6	K20R 180 M6	0.2680	200
G21R 225 M6	K21R 225 M6	G20R 200 M6	K20R 200 M6	0.4430	284
G21R 250 M6	K21R 250 M6	G20R 225 M6	K20R 225 M6	0.8250	375
G21R 280 S6	K21R 280 S6	G20R 250 S6	K20R 250 S6	1.28	465
G21R 280 M6	K21R 280 M6	G20R 250 M6	K20R 250 M6	1.48	575
G21R 315 S6	K21R 315 S6	G20R 280 S6	K20R 280 S6	2.63	690
G21R 315 M6	K21R 315 M6	G20R 280 M6	K20R 280 M6	3.33	800
G21R 315 MX6	K21R 315 MX6	G20R 315 S6	K20R 315 S6	3.60	880
G21R 315 MY6	K21R 315 MY6	G20R 315 M6	K20R 315 M6	6.00	1050
G21R 315 L6	K21R 315 L6	G20R 315 L6	K20R 315 L6	6.67	1250
G21R 315 LX6	K21R 315 LX6	G20R 315 LX6	K20R 315 LX6	8.6	1460
G22R 355 MY6	K22R 355 MY6			8.1	1550
G22R 355 M6	K22R 355 M6			8.2	1650
G22R 355 MX6	K22R 355 MX6			12.1	2200
G22R 355LY6	K22R 355LY6			14.0	2400

The asynchronous generators G21R are identical to the series K21R.
For further information regarding the terminal boxes, bearings and dimensions, please refer to Chapter 2.

Assignment table					
Type		Type		J	m
IEC/DIN		Progressive assignment			
G21R/G22R	K21R/K22R	G20R	K20R	kgm ²	kg
Synchronous speed 750 rpm – 8-pole version					
G21R 132 S8	K21R 132 S8	G20R 112 M8	K20R 112 M8	0.01800	46
G21R 132 M8	K21R 132 M8	G20R 112 MX8	K20R 112 MX8	0.0230	53
G21R 160 M8	K21R 160 M8	G20R 132 S8	K20R 132 S8	0.0430	70
G21R 160 MX8	K21R 160 MX8	G20R 132 M8	K20R 132 M8	0.0530	86
G21R 160 L8	K21R 160 L8	G20R 160 S8	K20R 160 S8	0.1130	114
G21R 180 L8	K21R 180 L8	G20R 160 M8	K20R 160 M8	0.1450	136
G21R 200 L8	K21R 200 L8	G20R 180 S8	K20R 180 S8	0.228	175
		G20R 180 M8	K20R 180 M8	0.268	200
G21R 225 S8	K21R 225 S8			0.440	265
G21R 225 M8	K21R 225 M8	G20R 200 M8	K20R 200 M8	0.440	265
G21R 250 M8	K21R 250 M8	G20R 225 M8	K20R 225 M8	0.825	360
G21R 280 S8	K21R 280 S8	G20R 250 S8	K20R 250 S8	1.35	465
G21R 280 M8	K21R 280 M8	G20R 250 M8	K20R 250 M8	1.55	520
G21R 315 S8	K21R 315 S8	G20R 280 S8	K20R 280 S8	2.63	690
G21R 315 M8	K21R 315 M8	G20R 280 M8	K20R 280 M8	3.33	800
G21R 315 MX8	K21R 315 MX8	G20R 315 S8	K20R 315 S8	3.60	880
G21R 315 MY8	K21R 315 MY8	G20R 315 M8	K20R 315 M8	6.00	1050
G21R 315 L8	K21R 315 L8	G20R 315 L8	K20R 315 L8	6.76	1250
G21R 315 LX8	K21R 315 LX8	G20R 315 LX8	K20R 315 LX8	8.71	1430
G22R 355 MY8	K22R 355 MY8			9.3	1500
G22R 355 M8	K22R 355 M8			9.5	1600
G22R 355 MX8	K22R 355 MX8			13.4	2200
G22R 355 LY8	K22R 355 LY8			15.8	2400

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