

VEM motors GmbH Elektromotorenwerk Wernigerode	Factory standard Type designation Current design series	EW-N 1002 Sheet 13e Page 1
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binding

from: 1. 2. 2005
till:**General**

The type designation consists of 8 basic parts and special designations,

- code for **energy efficiency class**
- code for **design**,
- code for **design series/construction type**,
- code for **cooling type**,
- code for **shaft height**,
- code for **foot length** and the **additional designation for foot length for efficiency definition**
- code for **pole numbers**,
- code for **special designation**

These individual parts are put together and they are then used to characterize the motor completely, whereas not all of the different parts must be included. In the following the individual parts with the permissible combinations will be illustrated. **Deviations of this type designation system are only allowed for certified series! As example motors certified for CSA are only available as K11R (see no. 10 – design series).**

The type designation is valid for new identification numbers after issue date.

IE2	-	W	E	1	R		160	M	X	2		Ex ec II T3	IL	...	HW
1		2		3	4		5		6	7		8 ...10			

1. Energy efficiency class

	Description	Standard	Old name
	Not classified	-	-
IE1	Standard Efficiency	IEC/EN 60034-30	EFF 2
IE2	High Efficiency	IEC/EN 60034-30	EFF1
IE3	Premium Efficiency	IEC/EN 60034-30	
IE4	Super Premium Efficiency	IEC/EN 60034-30	
IE5	Ultra Premium Efficiency	IEC/EN 60034-30	

2. Design

	Description	
A	roller table motor	
B	motor with brake (squirrel-cage motor)	
C	slip-ring motor with brake	
G	asynchronous generator	
K	squirrel-cage motor	
M	compact drive with integrated frequency inverter	
P	permanent magnet synchronous motor	if it is a basic motor for compact drives the prefix "M" must be prefixed.
R	Synchronous-Reluctance motor	
S	slip-ring motor	
W	energy-efficient motor	
Y	squirrel-cage motor, motor with terminal box on non-drive end side of housing	

Erarb.	Gepr.	Genehm.	Änderungszustand
Schube		F. Steuer	

Continued on page 2

3. Construction type

	Description
10	Construction type 1, progressive IEC-series
11	Construction type 1, IEC/DIN-series
12	Construction type 1, IEC/DIN-series, deviating allocation of basic types
20	Construction type 2, progressive IEC-series
21	Construction type 2, IEC/DIN-series
21	In connection with design W, energy efficient series with efficiency class IE2, no longer in use
22	Construction type 2, Transnorm series
23	Construction type 2, Transnorm series, increased output
25	Construction type 2, progressive series, DIN-shaft height/allocation of output
2B	Housing without cooling fins, for internal cooling
2C	Housing without cooling fins, for tangential internal cooling
30	Without housing, tangential cooling, progressive IEC-series, not available anymore
31	Without housing, tangential cooling, IEC/DIN-series, not available anymore
33	Without housing, progressive power allocation (LDW series A5L)
41	Energy efficient series with efficiency class IE3
42	Energy efficient series with efficiency class IE3, Transnorm motors with internal cooling
42	Energy efficient series with efficiency class IE3, Standard motors, modified electrical design
43	Energy efficient series with efficiency class IE3, optimized motor series
45	Energy efficient series with efficiency class IE3, DIN-shaft height/allocation of output
46	Energy efficient series with efficiency class IE3, different basic type 60 Hz
61	Energy efficient series with efficiency class IE4 / IE5
62	Energy efficient series with efficiency class IE4 / IE5, Transnorm motors with internal cooling
63	Energy-efficient series with efficiency class IE4, optimized series
5	HV design for 2.2 up to 6.6 kV
52	HV design, Transnorm motors upto shaft height 400
57	High voltage motors, self-ventilated, purchase from AEM
72	HV design, Transnorm motors shaft height 450
81	Purchase of motors in type of protection flameproof enclosure „d/de“ from ATB Motorentchnik, version 1, not available anymore
82	Purchase of motors in type of protection flameproof enclosure „d/de“ from ATB Motorentchnik, version 2
85	Purchase of IEC standard motors/transnorm motors from Schorch
86	Purchase of motors incl. type of protection increased safety „e“, Siemens AG
87	Purchase of IEC standard motors/transnorm motors from AEM Dessau
8A	Purchase of IEC standard motors/transnorm motors, ATS-Elbtalwerk GmbH
8C	Purchase of roller table motors, Electro ADDA, Housing with circular rib design, In connection with 2nd position A, roller table motor for inverter operation, cooling type IC 410, 4 th position is omitted
8E	Purchase of motors from EMZ
8U	Purchase of motors in type of protection flameproof enclosure „d/de“ from UMEB S.A. Romania
8M	Purchase of standard motors/transnorm motors from company Menzel
8K	Purchase of motors from company KONCAR
8O	Purchase of motors from company OMEC
8S	Purchase of motors from company SEC
E1	Energy efficient series with efficiency class EFF1, IE2 / synchronous motor design IE4 acc. to IEC DTS 60034-30-2 TS 2016
E2	Energy efficient series with efficiency class IE2, construction type 2 (all shaft heights/pole numbers) synchronous motor design IE4 acc. to IEC DTS 60034-30-2 TS 2016
E3	Energy efficient series with efficiency class IE2, optimized motor series
E6	Energy efficient series with efficiency class IE2, different basic type 60 Hz
R4	reluctance motor as basis in efficiency class IE4
R5	reluctance motor as basis in efficiency class IE5
S1/S2	Energy efficient series with efficiency class IE5, shell magnets (surface magnets)
T1	Energy efficient series with efficiency class IE5, bag magnets (buried magnets)
U0	Construction type 2, progr. IEC-series, inverter operation, curve A, DIN VDE 0530-25:2009
U1	Construction type 2, IEC/DIN-series, inverter operation, curve A, DIN VDE 0530-25:2009
U2	Construction type 2, Transnorm series, inverter operation, curve A, DIN VDE 0530-25:2009
U3	Energy efficient series with efficiency class IE3, optimized motor series, inverter operation, curve A, DIN VDE 0530-25:2009
U5	Construction type 2, progressive series, DIN-shaft height/allocation of output, inverter operation, curve A, DIN VDE 0530-25:2009
V0	Construction type 2, progr. IEC-series, inverter operation, curve B, DIN VDE 0530-25:2009
V1	Construction type 2, IEC/DIN-series, inverter operation, curve B, DIN VDE 0530-25:2009
V2	Construction type 2, Transnorm series, inverter operation, curve B, DIN VDE 0530-25:2009
V3	Energy efficient series with efficiency class IE3, optimized motor series, inverter operation, curve B, DIN VDE 0530-25:2009
V4	Construction type 2, DIN-series, inverter operation, curve B, DIN VDE 0530-25:2009
V5	Construction type 2, progressive series, DIN-shaft height/allocation of output, inverter operation, curve B, DIN VDE 0530-25:2009
P	With 2 nd letter S, slip-ring motors
PE	With 2 nd letter S, slip-ring motors, DIN motors
RB	In connection with 2nd position A, roller table motor for mains operation, cooling type IC 410, 4 th position is omitted
RC	Housing with circular rib design, In connect. with 2nd position A, roller table motor for inverter op., cooling type IC 410, 4 th position is omitted
RG	Housing with circular rib design, In connect. with 2nd position A, geared roller table motor for inverter op., cooling type IC 410,

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4. Cooling type

4.1 Standard design series

	Description	Cooling type
A	Internal cooling (self-cooling, external cooling)	IC 01, IC 06
B	Water cooling	IC 31W
C	Internal cooling with built up water heat exchanger,	IC 86W
D	External internal cooling with pipe connection	IC 17
F	Rib cooling with forced ventilation	IC 416
O	Rib cooling without self ventilation	IC 410
R	Rib cooling with self ventilation	IC 411
U	Circulation cooling	IC 511
V	Rib cooling with self ventilation, IP56	IC 411

Q = not used anymore, only in connection with K2.Q/IBExU02ATEX1019

V = not used anymore

4.2 Slip-ring motors, design for cranes and metallurgical plants

	Description	Cooling type
E	Rib cooling with forced ventilation	IC 416
C	Rib cooling with internal fan, protection class IP 65	IC 411
H	Rib cooling with self ventilation	IC 411
T	Rib cooling without self ventilation	IC 410
D	Rib cooling with self ventilation, IP 55	IC 411

D = not used anymore

5. Shaft height in mm

112, 132, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450

ARB: 22 (132), 33 (125), 54 (170) and 65 (200) values in brackets: shaft height mm

6. Foot length

Foot length	Description
S	short
M	medium
L	long

Additional designation for foot length for efficiency definition

Additional designation	Description
X	Increased output for two powers/foot length
Y	Output decrease *)
Z	Increased output for three powers/foot length

*) for size 315 increased output

7. Pole number

2p=	Synchronous speed n (at 50 Hz)
	[r.p.m.]
2	3.000
4	1.500
6	1.000
8	750
10	600
12	500
16	375
20	300
24	250

Pole number separated by hyphen, bigger pole number first for pole-changing motors

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8. Short sign for special design

8.1 Type of protection for explosion-protected equipment (always listed first after the pole number!)

Short sign	Type of protection
Ex eb IIC T1/T2, T3 or T4	Increased safety „eb“ (old: „e“)
Ex ecnA IIC T1/T2, T3 or T4	Non sparking „ec“ (old: „nA“)
Ex II 2D	Protection by enclosure „tb“ (Zone 21)
Ex II 3D	Protection by enclosure „tc“ (Zone 22)
Ex eb IIC T. 2D	Increased safety „eb“ (old „e“) or Zone 21
Ex eb IIC T. 3D	Increased safety „eb“ (old „e“) or Zone 22
Ex ecnA IIC T. 2D	Non sparking „ec“ (old „nA“) or Zone 21
Ex ecnA IIC T. 3D	Non sparking „ec“ (old „nA“) or Zone 22
Ex db, db eb (e) IIC T4, T5 oder T6	Flameproof enclosure „db bzw. db eb (alt: „d“ bzw. „de“)

8.2 Efficiency class for certified designs where the designation complying with #1 is not possible. The designation from table 1 is added at the end.

8.3 Classification of combustion gas

VEM category	Class acc. to EN 12101-3	Operating time/temperature load in case of emergency operation
FV (former FV0)	without	1 hour at 200°C
FV1	F200	2 hours at 200°C
	-	1 hour at 250°C
FV2 / FV2-1	F300	1 hour at 300°C
	-	2 hours at 250°C
FV3 / FV3-1	without	2 hours at 300°C
FV4-2	F400	2 hours at 400°C
	-	1,5 hours at 400°C
	-	1 hour at 400°C
FV4-3 / FV4-4	F400	2 hours at 400°C
FV5 / FV5X	F600	1 hour at 600°C

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9. Special mark for special requirements

AAC	Design according to Anglo-American Corporation, RSA
AH	Design series of Motors from AEM Dessau, open circuit cooled, deep-bar rotor
AK	Design series of Motors from AEM Dessau, double-cage rotor on request
AL	Aluminium design
ANL	motor with starter
AS	Design series of Motors from AEM Dessau, slip-ring rotor on request
AVM	design version for Kali und Salz AG
B	dredger version
BA	Railway application
BIN	built-on brake Binder
BM	auxiliary traction motor
BMU	auxiliary traction motor for inverter-fed operation
BUB	disk brake Bubbenzer
BZF	built-on double-face brake IP56
C	Die cast copper rotor
CG	Frequency inverter Crompton Greaves (Emotorn)
CN	VEMoContact, Main connection system via terminal block system (without bolt terminals board)
DIAC	Motor version with VEMoDIAC measuring module
DES	built-on brake Dessau BZFM (from 1. 12. 98 SMG)
DK	Version without breathing hole up to shaft height 180, for terminal box 200 and 400A glands only, no sealing connection pipe
DL	sense of rotation counter-clockwise
DR	sense of rotation clockwise
DKT	flange and shaft for K20R acc. to DIN, foot fixing dimensions remain unchanged
DW	built-on speed controller/centrifugal switch/speed switch
E	built-in motor
EB	Components for built-in motors, also CKD
EE	Energy saving motor acc. to EISA, different basic types for 60 Hz
E1	right after pole number for efficiency motor in ship classification, basis WE1R
E2	right after pole number for efficiency motor in ship classification, basis WE2R
EH	built-in motor half hermetic
EP	WE1R electric design acc. to NEMA
EW	increased efficiency, based on W21R
FAN	design for jet fans or duct fans or cooled by external air flow (always without self-ventilation)
FBF	separately driven fan unit Fischer (for Stöber)
FBI	separately driven fan unit Maier Motorpress GmbH
FBW	separately driven fan unit Wistro
FBZ	separately driven fan unit Ziehl-Abegg
FD	fixed bearing D-side (only when not using standard design)
FL	for forced ventilated motors in CSA-version
FN	fixed bearing N-side (only when not using standard design)
FO	Without fixed bearing (floating bearing)
FU	inverter insulation, invalid, is not been used any more! See TU, TV
FV	fan motor for fire and smoke exhausting fans, different designs are indicated with subsequent figures
FWN	flange and shaft end acc. to NEMA
FX	Flex conversion system
G	low-noise motor
GEN	permanent magnet synchronous generator, for Ex-motors and slip-ring motors generator operation
GF	version Grundfos – for M21R, M21F
GV	global version, old, not in use anymore!
H	increased accuracy
HB	anti-condensation heating
HD	main drive turning machine (forced ventilation with speed sensor)
HK	increased accuracy KSB
HL	manual release (brake motor)
HS	special balancing for inverter operation
HV	high voltage design version, when purchased, for example K86R
HW	half key balancing

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IE.	IE class, if IE. is not allowed in first position
IE3W3	Energy efficient series with efficiency class IE3, optimized motor series, Special mark directly behind the number of poles (only for ships and sea-going vessels)
IGR	incremental speed sensor
IL	insulated bearing
ILS	insulated bearing arrangement (with standard bearing)
KA	design version for power plants (VIK)
KEB	built-on brake Brinkmann
KKW	design version for nuclear power plants
KL	terminal box left hand side
KN	terminal box N-side
KOS	Frequency inverter KOSTAL
KR	terminal box right hand side
KS	design version for surface warships
KSL	Terminal box above, diagonally left hand side
KSR	Terminal box above, diagonally right hand side
KTY	temperature sensor KTY
KU	terminal box downwards (only valid for IM B5)
KV	terminal box supplied with cable glands
KX	Klixon switch
L	pole-changing motor, fan characteristics
LAU	design version for company LAUBAG, always directly behind pole number
LEN	built-on brake Lenze
LF	pole-changing motor, fan characteristics (increased output)
LK	motors for company Kolmeks (with windings, no shaft, loose insert of rotor body)
LL	easy bearing arrangement
LZ	pole-changing motor, fan characteristics, two windings
M	for inverter-fed operation with control panel
MAY	built-on brake Mayr
MM	memory motor
MO	design version for dairies
MP	for inverter-fed operation with interface for parameterisation
MT	microtherm switch
MV	for series KR delivery of complete built-in motors
NH	design version for company Norsk Hydro
NH0	motors with component preparation and colouring as for Norsk Hydro
NS	relubrication device
NWT	Slot resistance thermometer
O	for inverter-fed operation without control panel for non-ventilated motors with ship classification certificate (if O can not stand in 4 th position due to certificate requirements)
OA	bearing arrangement D-side protected against oil ingress
OB	without stator core
OD	oil tight bearing arrangement
OU	Without inverter, only for spare motors (compact drives)
OUA	Without inverter and without adapter, only for compact drives
OW	without winding
PIN	built-on brake Pintsch BAMAG
PMB	design version pad-mounted with bolts
PMW	design version pad-mounted with angles
PRE	built-on brake PRECIMA
PT	temperature monitoring resistance thermometer
RH	Design series of Motors from AEM Dessau, special deep bar rotor configuration
RK	Design series of Motors from AEM Dessau, rib-cooled double cage rotor
RS	resolver
RSK	Design series of Motors from AEM Dessau, special design for crane applications
RSL	reverse locking, sense of rotation left
RSR	reverse locking, sense of rotation right
RT	rotor with trapezoidal bars

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S	special rotor
SB	special sheet steel
SD	with sun protection cover
SF	SERMES/France, dust explosion protection, zone 22, old, not in use anymore!
SGR	low vibration, vibration class reduced acc. to DIN EN 60034-14:1996
SGS	low vibration, vibration class special acc. to DIN EN 60034-14:1996
SGP	low vibration, vibration class precision acc. to DIN EN 60034-14:1996
SGB	low vibration, vibration class B acc. to DIN EN 60034-14:2004
SH	design version acc. to Shell specifications
SKL	angular contact ball bearing
SL	special fan
SLH	special fan cover
SM	Special magnets
SMG	built-on brake Stromag (until 31. 1. 1998 DES)
SPEZ	special design version
SPM	prepared for use of vibration sensor at bearings
ST	Shaft with centre hole on N-side and thread M16 (design for stock motors as preparation for encoder fitting)
STW	automatic standstill controller
SW	special winding
SYN	Synchronized
T	for versions from Thurm (K21R 132T or M21R 132T) directly after pole number
TA	tachogenerator
TEM	built-on brake Temporiti (a.c. brake)
TEX	design version for textile industry
THE	thermo couple (in windings, bearings , etc.)
TU	insulation for inverter-fed operation >420V...500V, KU insulation system (only if ,U' not included in type designation)
TV	insulation for inverter-fed operation >500V...690V, KV insulation system (only if ,V' not included in type designation)
TWH	thermal winding protection NTC resistor
TPM	thermal winding protection PTC resistor
U	Non-ventilated
UH	Design series of Motors from AEM Dessau, circulation cooling, deep-bar rotor
US	Design series of Motors from AEM Dessau, circulation cooling, slip-ring rotor
VA	Frequency inverter VACON
VC	VEMoChem
VIB	vibration sensor VIB Prüftechnik
VIK	design version acc. to VIK recommendation
VL	heavy bearing arrangement
VSI	Frequency inverter VEM (former Transresch)
VSO	automatic controlled inverter, without control panel
VSM	automatic controlled inverter, with control panel
VOR	feedback controlled inverter, without control panel
VRM	feedback controlled inverter, with control panel
VZ	toothed shaft
WD	motors for solid wood dryers
WE	special shaft
WH	Design series of Motors from AEM Dessau, water-cooling, deep-bar rotor
Y2	Synonym for IE2 for Ex de motors (Ex-certificates)
Y3	Synonym for IE3 for Ex de motors (Ex-certificates)
YL	Motor in design for Ystral
Z	brake motor with brake Hze
ZW	pole-changing motor with two windings

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10. Overview design series:

Values in brackets ... possible types of cooling (O/F/B)

Basic design, motors

K21R (O/F/B)	Standard motor series up to size 315, IEC/DIN design
K22R (O/F/B)	Transnorm series from size 355, IEC shaft height
K20R (O/F)	Standard motor series with progressive output classification, IEC shaft height
K25R (O/F)	Standard motor series with progressive output classification, sizes/output classification according to DIN
K23B	Standard and Transnorm motor series, water-cooled with increased performance size classification according to DIN

Only for type of protection "ec" (old: „n“) and increased safety "eb" (old: „e“), marine version and CSA

K11R, K12R (O/F)	Standard motor series up to size 315, IEC/DIN design
K10R (O/F)	Standard motor series with progressive output classification, IEC shaft height

Basic design, asynchronous generators

G21R (O/F/B)	Asynchronous generators up to size 315, IEC/DIN design
G20R (O/F)	Asynchronous generators with progressive output classification, IEC shaft height
G22R (O/F/B)	Asynchronous generators from size 355, IEC design
GE.R (O/F/B)	Asynchronous generators based on energy saving motor design IE2
G4.R (O/F/B)	Asynchronous generators based on energy saving motor design IE3

Energy saving motors

IE1-K21R (O/F/B)	Efficiency class IE1 according to IEC/EN 60034-30, Standard motor series up to size 315, IEC/DIN design
IE1-K20R (O/F)	Efficiency class IE1 according to IEC/EN 60034-30, Standard motor series with progressive output classification, IEC shaft height
IE1-K22R (O/F/B)	Efficiency class IE1 according to IEC/EN 60034-30, Transnorm series from size 355, IEC shaft height
IE2-WE1R (O/F/B)	Efficiency class IE2 according to IEC/EN 60034-30, Standard motor series up to size 315, IEC/DIN design
IE2-WE2R (O/F/B)	Efficiency class IE2 according to IEC/EN 60034-30 (different mechanical and electrical design compared to W21R/WE1R), design version 2 IEC/DIN design
IE2-W21R (O/F/B)	Efficiency class IE2 according to IEC/EN 60034-30, except output range IE2-WE1R not in use anymore Transnorm series up to size 315, IEC shaft height

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IE2-W22R (O/F/B)	Efficiency class IE2 according to IEC/EN 60034-30, Transnorm series up to size 355, IEC shaft height
IE3-W41R (O/F/B)	Efficiency class IE3 according to IEC/EN 60034-30 Standard motor series up to size 355, IEC/DIN design
IE3-W42R (O/F/B)	Efficiency class IE3 according to IEC/EN 60034-30 Transnorm motor series from size 355, internal cooling circuit, IEC shaft height
IE4-W61R (O/F/B)	Efficiency class IE4 according to IEC/EN 60034-30 Standard motor series up to size 355, IEC/DIN design
IE3-W62R (O/F/B)	Efficiency class IE4 according to IEC/EN 60034-30 Transnorm motor series from size 355, internal cooling circuit, IEC shaft height

Only for type of protection "ec" (old: „n“) and increased safety "eb" (old: „e“)

IE1-K11R, K12R(O/F)	Standard motor series up to size 315, IEC/DIN design Efficiency class IE1 according to IEC/EN 60034-30,
IE1-K10R (O/F)	Standard motor series with progressive output classification, IEC shaft height Efficiency class IE1 according to IEC/EN 60034-30,
IE2-K11R (O/F)	Standard motor series up to size 355, IEC/DIN design Efficiency class IE2 according to IEC/EN 60034-30,
IE3-K11R (O/F)	Standard motor series up to size 355, IEC/DIN design Efficiency class IE3 according to IEC/EN 60034-30,
IE4-K11R (O/F)	Standard motor series up to size 355, IEC/DIN design Efficiency class IE4 according to IEC/EN 60034-30,
IEEx-K42R	Transnorm motor series sizes 355-450, internal cooling circuit, Efficiency class IEx according to IEC/EN 60034-30-1

Compact drives

M21R (O/F)	Compact drive with IE1 (former EFF2) basic motor
ME1R (O/F)	Compact drive with IE2 basic motor

Roller table motors

A21R (O/F)	light duty roller table design, IEC shaft height
IE2-A21R (O/F)	light duty roller table design, efficiency class IE2 acc.to IEC/EN 60034-30, without output range IE2-AE1R, not in use anymore
IE2-AE.R (O/F)	light duty roller table design, efficiency class IE2 acc.to IEC/EN 60034-30
IE3-A4.R (O/F)	light duty roller table design, efficiency class IE3 acc.to IEC/EN 60034-30
A20R (O/F)	light duty roller table design, progressive output classification
ARC	heavy duty roller table design, IEC shaft height
ARG	heavy duty roller table design for inverter operation, IEC shaft height

BRC heavy duty roller table design with built-on brake for inverter operation,
 IEC shaft height

ARB heavy duty roller table design for mains application

Motors for inverter operation

KU1R (O/F/B) Standard motor series up to size 315, IEC/DIN design
 inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

KU2R (O/F/B) Transnorm series from size 355, IEC shaft height
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

KU0R (O/F) Standard motor series with progressive output classification, IEC shaft height
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

KV1R (O/F) Standard motor series up to size 315, IEC/DIN design
 Inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

KV4R (O/F) Standard motor series, shaft height/output classification according to DIN
 Inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

KV2R (O/F) Transnorm series from size 355, IEC shaft height
 Inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

KV0R (O/F) Standard motor series with progressive output classification, IEC shaft height
 Inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

IE1-KU1R (O/F/B) Efficiency class IE1 according to IEC/EN 60034-30,
 Standard motor series up to size 315, IEC/DIN design
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE1-KU0R (O/F) Efficiency class IE1 according to IEC/EN 60034-30,
 Standard motor series with progressive output classification, IEC shaft height
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE1-KU2R (O/F/B) Efficiency class IE1 according to IEC/EN 60034-30,
 Transnorm series from size 355, IEC shaft height
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE2-WU1R (O/F/B) Efficiency class IE2 according to IEC/EN 60034-30,
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE2-WU2R (O/F/B) Efficiency class IE2 according to IEC/EN 60034-30,
 Transnorm series from size 355, IEC shaft height
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE3-WU1R (O/F/B) Efficiency class IE3 according to IEC/EN 60034-30,
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE3-WU2R (O/F/B) Efficiency class IE3 according to IEC/EN 60034-30,
 Transnorm series from size 355, IEC- shaft height
 Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE4-WU1R (O/F/B) Efficiency class IE4 according to IEC/EN 60034-30,
Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

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IE3-WU2R (O/F/B) Efficiency class IE3 according to IEC/EN 60034-30,
Transnorm series from size 355, IEC- shaft height
Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE4-WU1R (O/F/B) Efficiency class IE4 according to IEC/EN 60034-30,
Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE4-WU2R (O/F/B) Efficiency class IE4 according to IEC/EN 60034-30,
Transnorm series from size 355, IEC- shaft height
Inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

IE1-KV1R (O/F/B) Efficiency class e IE1 according to IEC/EN 60034-30,
Standard motor series up to size 315, IEC/DIN design
Inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

IE1-KV2R (O/F/B) Efficiency class IE1 according to IEC/EN 60034-30,
Transnorm series from size 355, IEC shaft height
Inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

Brake motors

B21R (O/F/B) Brake motors up to size 315, IEC/DIN design

B22R (O/F/B) Brake motors from size 355, IEC shaft height

B20R (O/F) Brake motors with progressive output classification, IEC shaft height

B25R (O/F) Brake motors with progressive output classification,
shaft height/output classification according to DIN

IE1-B21R (O/F/B) Brake motors, efficiency class IE1 according to IEC/EN 60034-30,
Standard motor series up to size 315, IEC/DIN design

IE1-B22R (O/F/B) Brake motors, efficiency class IE1 according to IEC/EN 60034-30,
Transnorm series from size 355, IEC shaft height

IE2-BE.R (O/F/B) Brake motors, efficiency class IE2 according to IEC/EN 60034-30,

IE3-B4.R (O/F/B) Brake motors, efficiency class IE3 according to IEC/EN 60034-30

IE3-B6.R (O/F/B) Brake motors, efficiency class IE4 according to IEC/EN 60034-30

Special designs

Y21R (O/F) Transnorm series up to size 315, IEC/DIN design, terminal box on N-side

Y22R (O/F) Transnorm series from size 355, IEC shaft height, terminal box on N-side

Y20R (O/F) Standard motor series with progressive output classification, IEC shaft height,
terminal box on N-side

Y25R (O/F) Standard motor series with progressive output classification, terminal box on N-side
shaft height/output classification according to DIN

IE1-Y21R (O/F) Standard motor series, efficiency class IE1 according to IEC/EN 60034-30, up to size 315, IEC/DIN design, terminal box on N-side

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IE1-Y22R (O/F) Standard motor series, efficiency class IE1 according to IEC/EN 60034-30, Transnorm series up to size 355, IEC shaft height, terminal box on N-side

IE1-Y20R (O/F) Standard motor series with progressive output classification, efficiency class IE1 according to IEC/EN 60034-30, IEC shaft height, terminal box on N-side

IE2-YE.R (O/F) Standard motors, efficiency class IE2 according to IEC/EN 60034-30, terminal box on N-side

IE3-Y4.R (O/F) Standard motors, efficiency class IE3 according to IEC/EN 60034-30, up to size 315, IEC/DIN design, terminal box on N-side

IE4-Y6.R (O/F) Standard motors, efficiency class IE4 according to IEC/EN 60034-30, up to size 315, IEC/DIN design, terminal box on N-side

Permanent-magnet synchronous motors

P21R (O/F/B) Permanent-magnet synchronous motors, maximum output or torque motors

PU1R (O/F/B) Permanent-magnet synchronous motors, maximum output or torque motors, inverter operation up to 500 V, curve A-DIN VDE 0530-25:2009

PV1R (O/F/B) Permanent-magnet synchronous motors, maximum output or torque motors, inverter operation up to 690 V, curve B-DIN VDE 0530-25:2009

PE1R (O/F/B) Energy saving motors based on permanent magnet synchronous motors

IE3-PE1R Permanent-magnet synchronous motors, efficiency class IE3 acc. to IEC/EN 60034-30

IE4-PE1R (F) Permanent-magnet synchronous motors, efficiency class IE4 acc. to IEC/EN 60034-30-1

IE4-PE2R (F) Permanent-magnet synchronous motors, efficiency class IE4 acc. to IEC/EN 60034-30-1, engineering design no. 2

Slip-ring motors

S11R (F/O) Standard motor series with slip-ring rotor, IEC/DIN design

S11H (E/T) Motor series with slip-ring rotor, IEC/DIN design, Design for cranes and metallurgical plant operation

SPR/S10R (F/O) Standard motor series with slip-ring rotor, with progressive output classification

SPH/S10H (E/T) Motor series with slip-ring rotor, Design for cranes and metallurgical plant operation, with progressive output classification

C11R (F/O) Slip-ring motor with Brake, IEC/DIN design

C11H (E/T) Slip-ring motor with Brake, IEC/DIN design
Design for cranes and metallurgical plant operation

CPR/S10R (F/O) Slip-ring motor with Brake, with progressive output classification

CPH/S10H (E/T)

Slip-ring motor with Brake, with progressive output classification
Design for cranes and metallurgical plant operation