UPS Systems Q/E-Matrix



Model:				Nominal active pow	/er	(P ₁	_{Nom}):	kW
Manufacturer:			Nominal apparent power (S _{Nom}): kVA					
Circuit arrangement:							kW	
Classification code:			at capacitive load					
	during normal opera ng to EN 50160)	ition		Output voltage of	the	UP	S	
Voltage 230 V +/- 10 % Frequency 50 Hz +/- 1.0 %			The output voltage of the UPS has to be within U_{Norm} in all mode of operation as normal mode, bypass mode and stored energy mode.					
Mains disturbances (Input) Disturbance (Testing procedure) Range		Normal mode (operation throu		•	hrough UPS Path) (operation through bypass I mains disturbance)			
$\operatorname{All}_{\operatorname{All}}$	Outage (Chap. 2) t _{UI} > 1 s	Yes/No			Yes/I	No		
	Voltage interruption (Chap. 4.1, 4.4 – 4.5) $t_{UI} < 1 s$	Yes/No			Yes/N	No		
	Over- and undervoltages (Chap. $3.1 - 3.3$) $\Delta U_I = +/- 10 \%$ $\Delta U_I = +/- 25 \%$	Yes/No			Yes/N	No		
	Voltage sags / brownouts (Chap. 4.1 - 4.3) Δ U _I = - 30 % Δ U _I = - 60 %	Yes/No			Yes/N	No		
	Harmonic voltages (Chap. 5) Distortion level class 3 according to IEC 61000-4-13	Yes/No			Yes/I	No		
	$\begin{array}{l} \mbox{Frequency variations} \\ (Chap. 3.1; 3.4 - 3.5) \\ \Delta f_{IStep} &= +/- \ 10 \ \% \\ \Delta f_{ICont} &= +/- \ 10 \ \% \end{array}$	Yes/No			Yes/N	No		
	Transients (Chap. 6 & 7) Fast transients according to IEC 61000-4-4	Yes/No			Yes/I	No		
VVVVV	Energy loaded transients according to IEC 61000-4-5	Yes/No			Yes/N	No		

Legend:

Normal voltage according to EN 50160 UNORM (230 V +/- 10 %; 50 Hz +/- 1.0 %) Max. continuous nominal output power $\mathsf{P}_{\mathsf{Nom}}$ at linear ohmic load Max. continuous nominal output power S_{Nom} at non-linear load according to IEC 62040-3 Max. continuous output power at linear $\mathsf{P}_{\mathsf{Max}_\mathsf{Cap}}$ capacitive load with $\cos \phi = 0.9 \text{ cap}$

Circuit arrangement and Classification code: according to IEC 62040-3 Load:

100 % linear ohmic or apparent load The transients are measured at 100 % linear apparent load or at a load of maximum 16 A / phase at UPS-Systems with a power higher than 20 kVA



		er 8)		1				
Normal mode (ope	eration throug	h UPS Pat	h)	Load	d at the o	utput		
Power factor	THDi of the		ndividual harmo- iic currents					
$\lambda =$	k =	%		at 10	00 % linear of	nmic load (P _{Nn}	om)	
$\lambda =$	k =	%		at 10	00 % non-line	ar load accord	ding to IEC 62040	-3 (S _{Nom})
$\lambda =$	k =	%		at m	naximum outpu	t current (Pow	ver factor $\lambda =$)
$\lambda =$	k = %			at 0-10 %, 50 %, 100 %, asymmetric non-linear load according to IEC 62040-3				
Bypass mode (op	eration throug	gh bypass)		Loa	d at the o	utput		
Power factor	THDi of the	-	Individual harmo- nic currents					
$\lambda =$	k =	%		at 10	00 % linear of	nmic load (P _{Nn}	om)	
λ =	k =	%		at 10	00 % non-line	ar load accord	ding to IEC 62040	-3 (S _{Nom})
λ =	k =	%		at m	naximum outpu	t current (Pow	ver factor $\lambda =$)
<u>م</u>								
λ= Losses and efi	ficiency d	%	ormal operat	n	-10 %, 50 %, 1 on-linear load a		etric	
Losses and eff (Input voltage (Testing procec	f iciency d U _I = 230 \ lure chapt	luring no / +/- 10 9 er 9)	%)	n			etric	
Losses and eff (Input voltage (Testing procec	ficiency d U _I = 230 V lure chapt eration throug	luring n / +/- 10 er 9) h UPS Pat	%)	ion	on-linear load a	according to IE	etric EC 62040-3	with
Losses and eff (Input voltage (Testing procec Normal mode (ope	ficiency d U _I = 230 V lure chapt eration throug	luring no / +/- 10 ^o er 9) ^{gh UPS Pat} s (in W) an	%)	ion	on-linear load a	according to IE	etric EC 62040-3	-linear
Losses and ef (Input voltage (Testing procec Normal mode (ope	ficiency d U _I = 230 V lure chapt eration throug Losse	luring no / +/- 10 ^o er 9) ^{gh UPS Pat} s (in W) an	h) d efficiency (in % Non-linear load according to IEC 62040-3	ion	on-linear load a	according to IE	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to	-linear
Losses and eff (Input voltage (Testing procec Normal mode (ope Power	ficiency d U _I = 230 V lure chapt eration throug Losses	luring no / +/- 10 ° er 9) h UPS Pat s (in W) an	h) d efficiency (in % Non-linear load according to IEC 62040-3 6 W	ion) during	on-linear load a	according to IE	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to	-linear o
Losses and eff (Input voltage (Testing procec Normal mode (ope Power 25 % Nom. power	ficiency d U _I = 230 V lure chapt eration throug Losses Linear ohmic	Iuring no / +/- 10 ^o er 9) h UPS Pat s (in W) an c load	h) d efficiency (in % Non-linear load according to IEC 62040-3 6 W 6 W	ion) during	g normal ope Maximum ou (λ =)	eration throut tput current	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to IEC 62040-3 	-linear o
Losses and eff (Input voltage (Testing procec Normal mode (ope Power 25 % Nom. power 50 % Nom. power	ficiency d U _I = 230 V lure chapt eration throug Losses Linear ohmic W	Iuring no / +/- 10 ° er 9) gh UPS Pat s (in W) an c load	h) d efficiency (in % Non-linear load according to IEC 62040-3 6 W 6 W	ion) during	g normal ope Maximum ou (λ =)	eration throut tput current	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to IEC 62040-3 	-linear o %
Losses and eff (Input voltage (Testing proced Normal mode (ope Power 25 % Nom. power 50 % Nom. power 75 % Nom. power	ficiency d U _I = 230 V lure chapt eration throug Losses Linear ohmic W W	Iuring no / +/- 10 ° er 9) gh UPS Pat s (in W) an c load 9 9	h) d efficiency (in % Non-linear load according to IEC 62040-3 6 W 6 W) during	on-linear load a	eration throut tput current	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to IEC 62040-3 	-linear o %
Losses and eff (Input voltage (Testing procect Normal mode (ope Power 25 % Nom. power 50 % Nom. power 75 % Nom. power 100 % Nom. power Standby Losses: Bypass mode (ope	ficiency d U _I = 230 V dure chapt eration throug Losses Linear ohmic W W W W W	Iuring no / +/- 10 ° er 9) gh UPS Pat s (in W) an cload %	h) d efficiency (in % Non-linear load according to IEC 62040-3 6 W 6 W 6 W 6 W 6 W 76 W 76 W	ion) during % % % t = 0 A	g normal ope Maximum our (λ =) W	eration throut tput current	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to IEC 62040-3 W	-linear o %
Losses and eff (Input voltage (Testing procect Normal mode (ope Power 25 % Nom. power 50 % Nom. power 75 % Nom. power 100 % Nom. power Standby Losses: Bypass mode (ope	ficiency d U _I = 230 V dure chapt eration throug Losses Linear ohmic W W W W W	luring no / +/- 10 ° er 9) h UPS Pat s (in W) an c load % % % % % % % % % % % % % % % % % % %	d efficiency (in % d efficiency (in % Non-linear load according to IEC 62040-3 6 W 6 W 6 W 6 W 6 W 6 W	ion) during % % % t = 0 A	g normal ope Maximum our (λ =) W	eration throut tput current	etric EC 62040-3 ugh UPS-Path Asymmetric non load according to IEC 62040-3 W	-linear o % rith -linear
Losses and eff (Input voltage (Testing procect Normal mode (ope Power 25 % Nom. power 50 % Nom. power 75 % Nom. power 100 % Nom. power	ficiency d U _I = 230 V Jure chapt eration throug Losses Linear ohmic W W W W W W Eration throug	luring no / +/- 10 ° er 9) /h UPS Pat s (in W) an c load % % % % % % % % % % % % % % % % % % %	h) d efficiency (in % Non-linear load according to IEC 62040-3 W W W W W W M minal voltage and I _{ou} Non-linear load according to IEC 62040-3	ion) during % % % t = 0 A	on-linear load a g normal ope Maximum ou (λ =) W ag normal op Maximum ou	eration throut tput current	etric EC 62040-3 Ugh UPS-Path Asymmetric non load according to IEC 62040-3 W W Asymmetric non load according to Asymmetric non load according to	-linear o % rith -linear
Losses and eff (Input voltage (Testing procect Normal mode (ope Power 25 % Nom. power 50 % Nom. power 75 % Nom. power 100 % Nom. power Standby Losses: Bypass mode (op Power	ficiency d U _I = 230 V Jure chapt eration throug Losses Linear ohmic W W W W eration throug Losses Linear ohmic	Iuring no / +/- 10 ° er 9) yh UPS Pate s (in W) an c load %	h) d efficiency (in % Non-linear load according to IEC 62040-3 6 W 6 W 6 W minal voltage and low nd efficiency (in % Non-linear load according to IEC 62040-3 6 W	ion) during % % % t = 0 A %) durin	on-linear load a g normal ope Maximum ou (λ =) W ag normal op Maximum ou	eration throut tput current % Deration throut tput current	etric EC 62040-3 Ugh UPS-Path Asymmetric non load according to IEC 62040-3 W W Asymmetric non load according to IEC 62040-3	-linear o % rith linear o



UPS Systems Q/E-Matrix supplementary sheet for storages

Battery device (optionally be combined	ned with a flywheel)	
Тороюду	Technical data	
	Energy storage capacity	Ah
	Supply voltage	V DC
Manueller Wartungsbypass	Voltage ripple	%
	Max. charge current	Α
Automatischer Bypass mit elektronischer Schalter	Min. charge time from 0% to 100%	min.
Verbraucher	Max. discharge current	Α
	Min. discharge time	min.
(1) 「「「「「」」」 「」 「」 「」 「」 「」 」 「」 」 」 」 」 」	Continuous charge current	Α
	Efficiency of storage	%
Batterieanlage	Ambient temperature from to	°C
	Noise level	< 5 dB
	Max. number of charge/discharge cycles	



Kinetic module with synchronous made	chine (for diesel dynamic UPS systems)	
Тороlоду	Technical data	
	Energy storage capacity	kWI
Manueller Wartungsbroass	Supply voltage	V A
мыллене тапшуројулаз	Max. THD of voltage	9
Netz Drosal Kritische Verbraucher	Max. charge current Min. charge time from	
	0% to 100%	mir
~	Max. discharge current	
	Min. discharge time	mi
Dieselmotor Radr Radr	Continuous charge current	
	Efficiency of storage	(
Kinetisches Synchron-	Ambient temperature from to	0
Modul maschine	Noise level	d
	Max. number of charge/discharge	
	cycles	