

PROTECT 8

INDUSTRIAL UPS

PROTECT 8.31 | 216 VDC | SINGLE PHASE OUTPUT



MODEL	P8.31-10	P8.31-20	P8.31-30	P8.31-40	P8.31-60	P8.31-80	P8.31-100	P8.31-120
Nominal rating (at cos φ 0.8 lag) in kVA	10	20	30	40	60	80	100	120
RECTIFIER UNIT								
Input nominal voltage	3 x 400 V (3 x 380 V, 3 x 415 V)							
Operating range (min./max.)	340 V – 460 V							
Frequency	50/60 Hz ±10 %							
Input current in A at nominal load	16	35	56	68	100	134	166	200
Charging characteristic to IEC 478-10	IU							
Nominal DC voltage	220 V							
Rectifier type								
- Standard	6 pulse Filter	6 pulse Filter	6 pulse 12 pulse	6 pulse 12 pulse	6 pulse 12 pulse	6 pulse 12 pulse	6 pulse 12 pulse	6 pulse 12 pulse
- Optional								
INVERTER UNIT								
DC input	216 V ±20 %							
Nominal AC voltage	230 V (220 V, 240 V)							
Output voltage static response	<±1 %							
Output voltage dynamic response	<±2 %							
Recovery time	1 ms							
Frequency	50/60 Hz							
Frequency tolerance without mains	±0.1 %							
Frequency synchronization range	±1 % (±2 %, ±3 %)							
Power factor range	0.0 lagging to 0.0 leading							
Output phase current in A	43	87	130	174	261	348	435	522
Voltage wave form	sinusoidal							
Voltage distortion	≤3 %							
Crest factor	max. 3							
Overload response 1 min.	150 %							
Overload response 10 min.	125 %							
Short circuit response	>3 x I nominal							
STATIC BYPASS SWITCH								
AC voltage	230 V (220 V, 240 V)							
Frequency	50/60 Hz							
Nominal power in kVA	10	20	30	40	60	80	100	120
GENERAL DATA								
Efficiency (AC to AC)	up to 90 % / >95 % with ECO mode							
Noise level depending on rating	<55 – 70 dB (A)							
EMC compatibility	EN 62040-2							
Air cooling with redundant and monitored fans	yes							
Operating temperature range min./max. (without de-rating)	-5 °C / +40 °C							
Storage temperature range min./max.	-30 °C / +75 °C							
Maximum altitude without de-rating	1000 m							
Protection degree IEC 529/EN 60529 standard system	IP20, IP21 and IP43 (>IP43 possible)							
Equipment color	RAL 7035							
WEIGHTS AND DIMENSIONS								
Height standard UPS (mm)	1810	1810	1810	1810	1810	1810	1810	1810
Height with max. options (mm)	1915	1915	1915	1915	2015	2015	2015	2015
Width (mm)	600	900	900	900	1200	1500	1800	1800
Depth (mm)	600*/860	860	860	860	860	860	860	860
Weight (kg) ~	340	500	700	700	1000	1200	1500	1500

* with reduced depth, without line filter and only IP20

PROTECT 8.33 | 216 VDC | THREE PHASE OUTPUT

MODELL	P8.33-10	P8.33-20	P8.33-30	P8.33-40	P8.33-60	P8.33-80	P8.33-100	P8.33-120
Nominal rating (at cos φ 0.8 lag) in kVA	10	20	30	40	60	80	100	120
RECTIFIER UNIT								
Input nominal voltage	3 x 400 V (3 x 380 V, 3 x 415 V)							
Operating range (min./max.)	340 V – 460 V							
Frequency	50/60 Hz \pm 10 %							
Input current in A at nominal load	16	35	56	68	100	134	166	200
Charging characteristic to IEC 478-10	IU							
Nominal DC voltage	220 V							
Rectifier type								
- Standard	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse
- Optional	Filter	Filter	12 pulse	12 pulse	12 pulse	12 pulse	12 pulse	12 pulse
INVERTER UNIT								
DC input	216 V \pm 20 %							
Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)							
Output voltage static response	< \pm 1 %							
Output voltage dynamic response	< \pm 2 %							
Recovery time	1 ms							
Frequency	50/60 Hz							
Frequency tolerance without mains	\pm 0.1 %							
Frequency synchronization range	\pm 1 % (\pm 2 %, \pm 3 %)							
Power factor range	0.0 lagging to 0.0 leading							
Output phase current in A	14	29	43	58	87	116	145	173
Voltage wave form	sinusoidal							
Voltage distortion	\leq 3 %							
Crest factor	max. 3							
Overload response 1 min.	150 %							
Overload response 10 min.	125 %							
Short circuit response	>3 x I nominal							
STATIC BYPASS SWITCH								
AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)							
Frequency	50/60 Hz							
Nominal power in kVA	10	20	30	40	60	80	100	120
GENERAL DATA								
Efficiency (AC to AC)	up to 90 % / >95 % with ECO mode							
Noise level depending on rating	<55 – 70 dB (A)							
EMC compatibility	EN 62040-2							
Air cooling with redundant and monitored fans	Yes							
Operating temperature range min./max. (without de-rating)	-5 °C / +40 °C							
Storage temperature range min./max.	-30 °C / +75 °C							
Maximum altitude without de-rating	1000 m							
Protection degree IEC 529/EN 60529 standard system	IP20, IP21 and IP43 (>IP43 possible)							
Equipment color	RAL 7035							
WEIGHTS AND DIMENSIONS								
Height standard UPS (mm)	1810	1810	1810	1810	1810	1810	1810	1810
Height with max. options (mm)	1915	1915	1915	1915	2015	2015	2015	2015
Width (mm)	900	900	900	900	1200	1500	1800	1800
Depth (mm)	860	860	860	860	860	860	860	860
Weight (kg) ~	600	600	700	700	1100	1100	1700	1700

PROTECT 8.31 | 384 VDC | SINGLE PHASE OUTPUT

MODELL	P8.31-10	P8.31-20	P8.31-30	P8.31-40	P8.31-60
Nominal rating (at $\cos \varphi$ 0.8 lag) in kVA	10	20	30	40	60
RECTIFIER UNIT					
Input nominal voltage	3 x 400 V (3 x 380 V, 3 x 415 V)				
Operating range (min./max.)	340 V – 460 V				
Frequency	50/60 Hz ± 10 %				
Input current in A at nominal load	17	33	50	66	98
Charging characteristic to IEC 478-10	IU				
Nominal DC voltage	384 V				
Rectifier type - Standard - Optional	6 pulse Filter	6 pulse Filter	6 pulse Filter	6 pulse 12 pulse	6 pulse 12 pulse
INVERTER UNIT					
DC input	384 V ± 20 %				
Nominal AC voltage	230 V (220 V, 240 V)				
Output voltage static response	$< \pm 1$ %				
Output voltage dynamic response	$< \pm 2$ %				
Recovery time	1 ms				
Frequency	50/60 Hz				
Frequency tolerance without mains	± 0.1 %				
Frequency synchronization range	± 1 % (± 2 %, ± 3 %)				
Power factor range	capacitive to inductive over entire $\cos \varphi$ -range				
Unbalanced-load response	at 100 % unbalanced load: voltage deviation < 2 %; angle deviation < 2 degrees el.				
Output phase current in A	43	87	130	174	261
Voltage wave form	sinusoidal				
Voltage distortion	≤ 3 %				
Crest factor	max. 3				
Overload response 1 min.	150 %				
Overload response 10 min.	125 %				
Short circuit response	short circuit proof, short circuit current $2.7 \times I_{nom}$				
STATIC BYPASS SWITCH					
AC voltage	230 V (220 V, 240 V)				
Frequency	50/60 Hz				
Nominal power in kVA	10	20	30	40	60
GENERAL DATA					
Efficiency (AC to AC)	up to 92 %				
Noise level depending on rating	$< 55 - 65$ dB (A)				
EMC compatibility	EN 62040-2				
Air cooling with redundant and monitored fans	yes				
Operating temperature range min./max. (without de-rating)	-5 °C / $+40$ °C				
Storage temperature range min./max.	-30 °C / $+75$ °C				
Maximum altitude without de-rating	1000 m				
Protection degree IEC 529/EN 60529 standard system	IP20 / optional IP21, IP31				
Equipment color	RAL 7035				
WEIGHTS AND DIMENSIONS					
Height standard UPS (mm)	1810	1810	1810	1810	1810
Height with max. options (mm)	1915	1915	1915	1915	1915
Width (mm)	600	600	750	1200	1200
Depth (mm)	860	860	860	860	860
Weight (kg) ~	275	325	375	550	650

PROTECT 8.33 | 384 VDC | THREE PHASE OUTPUT

MODELL	P8.33-10	P8.33-20	P8.33-30	P8.33-40	P8.33-60	P8.33-80	P8.33-100	P8.33-120
Nominal rating (at cos φ 0.8 lag) in kVA	10	20	30	40	60	80	100	120
RECTIFIER UNIT								
Input nominal voltage	3 x 400 V (3 x 380 V, 3 x 415 V)							
Operating range (min./max.)	340 V – 460 V							
Frequency	50/60 Hz ±10 %							
Input current in A at nominal load	17	33	50	66	98	130	163	195
Charging characteristic to IEC 478-10	IU							
Nominal DC voltage	384 V							
Rectifier type								
- Standard	6 pulse Filter	6 pulse Filter	6 pulse Filter	6 pulse Filter	6 pulse Filter	6 pulse 12 pulse	6 pulse 12 pulse	6 pulse 12 pulse
- Optional								
INVERTER UNIT								
DC input	384 V ±20 %							
Nominal AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)							
Output voltage static response	<±1 %							
Output voltage dynamic response	<±2 %							
Recovery time	1 ms							
Frequency	50/60 Hz							
Frequency tolerance without mains	±0.1 %							
Frequency synchronization range	±1 % (±2 %, ±3 %)							
Power factor range	capacitive to inductive over entire cos φ-range							
Unbalanced-load response	at 100 % unbalanced load: voltage deviation <2 %; angle deviation <2 degrees el.							
Output phase current in A	14	29	43	58	87	116	145	173
Voltage wave form	sinusoidal							
Voltage distortion	≤3 %							
Crest factor	max. 3							
Overload response 1 min.	150 %							
Overload response 10 min.	125 %							
Short circuit response	short circuit proof, short circuit current 2.7 x I _{nom}							
STATIC BYPASS SWITCH								
AC voltage	400 V (380 V, 415 V)							
Frequency	50/60 Hz							
Nominal power in kVA	10	20	30	40	60	80	100	120
GENERAL DATA								
Efficiency (AC to AC)	up to 94 %							
Noise level depending on rating	<55 – 65 dB (A)							
EMC compatibility	EN 62040-2							
Air cooling with redundant and monitored fans	yes							
Operating temperature range min./max. (without de-rating)	-5 °C / +40 °C							
Storage temperature range min./max.	-30 °C / +75 °C							
Maximum altitude without de-rating	1000 m							
Protection degree IEC 529/EN 60529 standard system	IP20 / optional IP21, IP31							
Equipment color	RAL 7035							
WEIGHTS AND DIMENSIONS								
Height standard UPS (mm)	1810	1810	1810	1810	1810	1810	1810	1810
Height with max. options (mm)	1915	1915	1915	1915	1915	1915	1915	1915
Width (mm)	600	600	600	600	750	1200	1200	1200
Depth (mm)	860	860	860	860	860	860	860	860
Weight (kg) ~	370	390	470	490	570	820	920	940

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