SEMIPOL™ PRODUCT DATASHEET

Static excitation equipment data

Parameter	Value
Input	
Incoming supply voltage	**10-960V AC**
Maximum supply voltage variation	**+10%**
Mains frequency	**50/60Hz**
Auxiliary supply	**3AC 380-480V/50/60Hz, 2×220VDC, 1×230VAC**
Output	
Rated excitation current	**10–7400 A DC (higher on request)[1)]**
Motor type	**Synchronous**
Efficiency (converter)	**>98.5%**
Mechanical	
Degree of protection	**Standard: IP31; IP32, IP41, IP42 on request**
Installation site	**Indoor installation**
Color	**RAL 7035**
Cubicles	**Fa. Rittal, type VX25**
Environment	
Cooling	**Air-cooled**
Environmental temperature	**Operation: +5 ... +40°C[2)]** **Storage: -20 ... +65°C**
Installation altitude	**≤1000m above MSL (mean sea level)[3)]**
Environmental class	**EN 60721-3-3:2002 3K3 (no occurrence of salt fog)/3M2/3C2EN 60721-3-2:1998 2K2/2M1**
Air humidity	**5–85% relative humidity[4)]** **max. 25 g/m³**
Insulation coordination	**Pollution degree 2 according to IEC 60664-1 and UL840**
Seismic requirements	**Up to 0.35g**
Certification	
Approvals	**EN, IEC, CE**
Standard	**IEC 61800-5-1:2016** **IEC 61800-3:2017[5)]** **EN 50581:2012**

1) DC currents dependent on machine and plant conditions
2) Up to 45°C optional with derating 1% per K
3) Up to 2000m with derating 1.3% per 100m
4) Condensate in the converter & operating room must be avoided
5) Applies not in full for devices with restricted availability that are installed in fixed installations

GEA34912 (07/2024)

	1 PA56		
	840/1200	660/1350	540/1550
Input			
Maximum supply voltage [Vac] without 10% tolerance	**840**	**660**	**540**
Plafond voltage if type voltage is used [Vac]	**1089**	**855**	**700**
Power electronics design	**PA56**	**PA56**	**PA56**
Output			
Rated excitation current [Adc]	**1200**	**1350**	**1550**
Surge excitation current factor for 10 sec	**1635**	**1838**	**2115**
Short circuit current [kA]	**18**	**20,2**	**23,2**
Number of bridges without redundancy	**1×100%**	**1×100%**	**1×100%**
Number of bridges with redundancy	**2×100%**	**2×100%**	**2×100%**
Air flow			
Air flow [m³/hour] without redundancy	**2.500**	**2.500**	**2.500**
Air flow [m³/hour] with redundancy	**2.500**	**2.500**	**2.500**
Air flow direction input	**Front+back**	**Front+back**	**Front+back**
Air flow direction output	**Back**	**Back**	**Back**
Environment			
Sound pressure level [dB(A)] without redundancy[1)2)]	**70**	**70**	**70**
Sound pressure level [dB(A)] with redundancy[1)2)]	**70**	**70**	**70**
Access			
Cable inlet	**Bottom**	**Bottom**	**Bottom**
Access	**Front+back, front only (option)**	**Front+back, front only (option)**	**Front+back, front only (option)**
Distance front [mm]	**1000**	**1000**	**1000**
Distance back [mm]	**600**	**600**	**600**
Distance top [mm]	**500**	**500**	**500**
Dimensions			
Dimensions cabinets without fans (LxDxH) [mm][3)4)] without redundancy	**2300×1000 x2200**	**2300×1000 x2200**	**2300×1000 x2200**
Dimensions cabinets without fans (LxDxH) [mm][3)4)] with redundancy	**2300×1000 x2200**	**2300×1000 x2200**	**2300×1000 x2200**
Additional height IP3x fans [mm]	**212**	**212**	**212**
Base frame (on request) [mm]	**160 (option)**	**160 (option)**	**160 (option)**

1) Measured at 1m distance, 1.6m height
2) Sound pressure level 50 Hz
3) With regulator cabinet; without base frame, packaging
4) Without option “access front only”

GEA34912 (07/2024)

	2 PA56		
	840/1650	660/1850	540/2000
Input			
Maximum supply voltage [Vac] without 10% tolerance	840	660	540
Plafond voltage if type voltage is used [Vac]	1089	855	700
Power electronics design	PA56	PA56	PA56
Output			
Rated excitation current [Adc]	1650	1850	2000
Surge excitation current factor for 10 sec	2250	2520	2723
Short circuit current [kA]	24,7	27,7	29,9
Number of bridges without redundancy	2×50%	2×50%	2×50%
Number of bridges with redundancy	3×50%	3×50%	3×50%
Air flow			
Air flow [m³/hour] without redundancy	2.500	2.500	2.500
Air flow [m³/hour] with redundancy	5.000	5.000	5.000
Air flow direction input	Front+back	Front+back	Front+back
Air flow direction output	Back	Back	Back
Environment			
Sound pressure level [dB(A)] without redundancy[1)2)]	70	70	70
Sound pressure level [dB(A)] with redundancy[1)2)]	73	73	73
Access			
Cable inlet	Bottom	Bottom	Bottom
Access	Front+back, front only (option)	Front+back, front only (option)	Front+back, front only (option)
Distance front [mm]	1000	1000	1000
Distance back [mm]	600	600	600
Distance top [mm]	500	500	500
Dimensions			
Dimensions cabinets without fans (LxDxH) [mm][3)4)] without redundancy	2300×1000 x2200	2300×1000 x2200	2300×1000 x2200
Dimensions cabinets without fans (LxDxH) [mm][3)4)] with redundancy	2900×1000 x2200	2900×1000 x2200	2900×1000 x2200
Additional height IP3x fans [mm]	212	212	212
Base frame (on request) [mm]	160 (option)	160 (option)	160 (option)

1) Measured at 1m distance, 1.6m height
2) Sound pressure level 50 Hz
3) With regulator cabinet; without base frame, packaging
4) Without option “access front only”

GEA34912 (07/2024)

	3 PA56	4 PA56
	840/2000	660/3600
Input		
Maximum supply voltage [Vac] without 10% tolerance	**840**	**660**
Plafond voltage if type voltage is used [Vac]	**1089**	**855**
Power electronics design	**PA56**	**PA56**
Output		
Rated excitation current [Adc]	**2000**	**3600**
Surge excitation current factor for 10 sec	**2723**	**4905**
Short circuit current [kA]	**29,9**	**53,9**
Number of bridges without redundancy	**2×50%**	**3×33%**
Number of bridges with redundancy	**3×50%**	**4×33%**
Air flow		
Air flow [m^3/hour] without redundancy	**5.000**	**7.500**
Air flow [m^3/hour] with redundancy	**7.500**	**10.000**
Air flow direction input	**Front+back**	**Front+back**
Air flow direction output	**Back**	**Back**
Environment		
Sound pressure level [dB(A)] without redundancy[1)2)]	**73**	**75**
Sound pressure level [dB(A)] with redundancy[1)2)]	**75**	**79**
Access		
Cable inlet	**Bottom**	**Bottom**
Access	**Front+back, front only (option)**	**Front+back, front only (option)**
Distance front [mm]	**1000**	**1000**
Distance back [mm]	**600**	**600**
Distance top [mm]	**500**	**500**
Dimensions		
Dimensions cabinets without fans (LxDxH) [mm][3)4)] without redundancy	**2900×1000×2200**	**3500×1000×2200**
Dimensions cabinets without fans (LxDxH) [mm][3)4)] with redundancy	**3500×1000×2200**	**4100×1000×2200**
Additional height IP3x fans [mm]	**212**	**212**
Base frame (on request) [mm]	**160 (option)**	**160 (option)**

1) Measured at 1m distance, 1.6m height
2) Sound pressure level 50 Hz
3) With regulator cabinet; without base frame, packaging
4) Without option “access front only”

GEA34912 (07/2024)

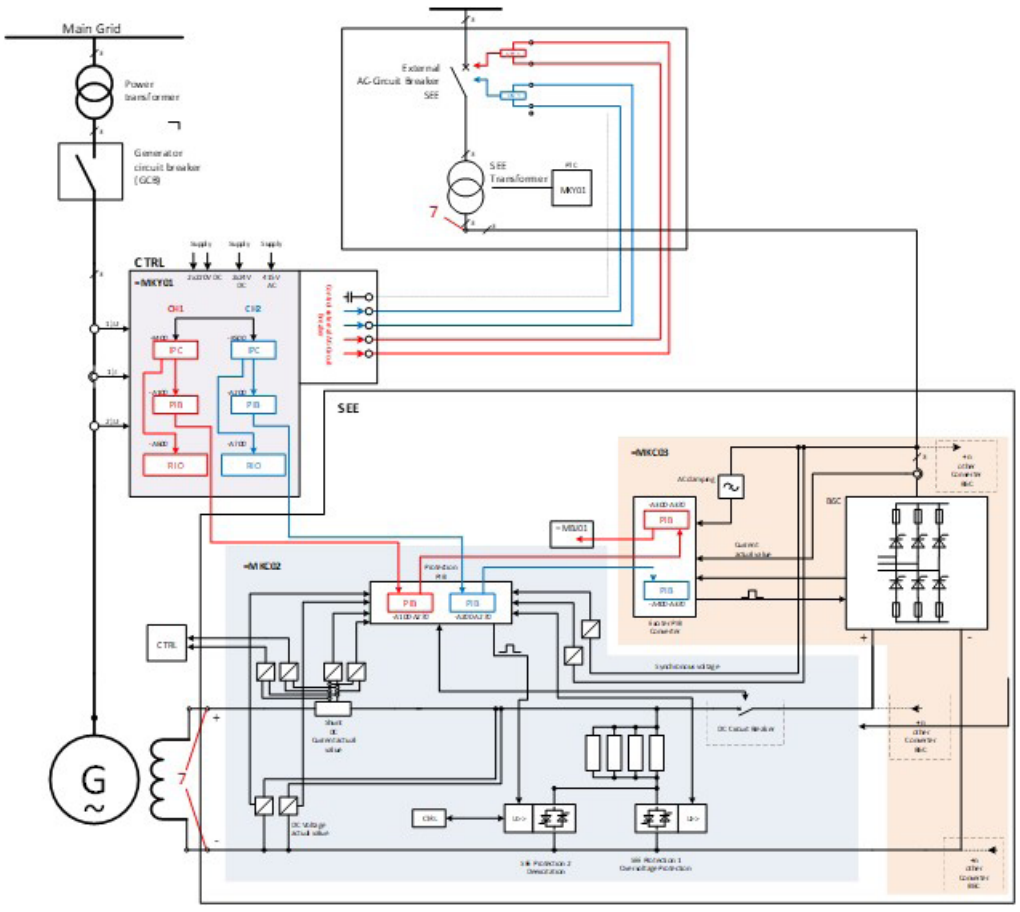
	5 PA75		6 PA75	
	840/2450	660/2750	840/4500	660/4900
Input				
Maximum supply voltage [Vac] without 10% tolerance	840	660	840	660
Plafond voltage if type voltage is used [Vac]	1089	855	1089	855
Power electronics design	PA75	PA75	PA75	PA75
Output				
Rated excitation current [Adc]	2450	2750	4500	4900
Surge excitation current factor for 10 sec	3308	3713	6075	6615
Short circuit current [kA]	36,7	41,2	67,4	73,3
Number of bridges without redundancy	1×100%	1×100%	2×50%	2×50%
Number of bridges with redundancy	2×100%	2×100%	3×50%	3×50%
Air flow				
Air flow [m^3/hour] without redundancy	5.000	5.000	10.000	10.000
Air flow [m^3/hour] with redundancy	10.000	10.000	15.000	15.000
Air flow direction input	Front+back	Front+back	Front+back	Front+back
Air flow direction output	Back	Back	Back	Back
Environment				
Sound pressure level [dB(A)] without redundancy[1)2)]	76	76	79	79
Sound pressure level [dB(A)] with redundancy[1)2)]	79	79	81	81
Access				
Cable inlet	Bottom	Bottom	Bottom	Bottom
Access	Front+back, front only (option)	Front+back, front only (option)	Front+back, front only (option)	Front+back, front only (option)
Distance front [mm]	1000	1000	1000	1000
Distance back [mm]	600	600	600	600
Distance top [mm]	500	500	500	500
Dimensions				
Dimensions cabinets without fans (LxDxH) [mm][3)4)] without redundancy	2600×1000 x2200	2600×1000 x2200	3500×1000 x2200	3500×1000 x2200
Dimensions cabinets without fans (LxDxH) [mm][3)4)] with redundancy	3500×1000 x2200	3500×1000 x2200	4400×1000 x2200	4400×1000 x2200
Additional height IP3x fans [mm]	212	212	212	212
Base frame (on request) [mm]	160 (option)	160 (option)	160 (option)	160 (option)

1) Measured at 1m distance, 1.6m height
2) Sound pressure level 50 Hz
3) With regulator cabinet; without base frame, packaging
4) Without option “access front only”

GEA34912 (07/2024)

Controller	
Semipol generation	**D4.2**
Controller platform	**PECe**
Cycling time	**380us**
Thyristor firing	**Pulse transformer**
Thyristor control modules (firing, actual values processing)	**PIBe (power interface board)**
Controller modules (PIBe) connection	**Fiber optic**
HMI based commissioning tool	**COMGUIDE**
Interface to DCS	**Profibus DP, Modbus (TCP, UDP, RTU), hardwired**
Interface to SFC	**Profibus DP, Modbus TCP, UDP, RTU, hardwired**
Remote monitoring connection	**Visor**
Options	
Excitation AC circuit breaker	**Emax 2 (3-pol), 1000A ... 5000A**
Excitation DC breaker	**Ge-Rapid (1-pol), 2000A ... 8000A, Emax 2 (4-pol)**
Power system stabilizer	**PSS2B/2C**
Initial excitation (field flashing)	**If exciter is connected on generator terminals[1)]**
Test excitation	

1) When connecting to the generator bus bar, an internal AC-CB is mandatory.
This extends the unit by 600 or 900mm



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