



Product Service

Compliance Document

No. D 126875 0022 Rev. 00

Holder of Certificate: **Atmoce Holding B.V.**

Singel 250
1016 AB Amsterdam
THE NETHERLANDS

Product: **PV inverter
Microinverter**

Model(s): **MI-360, MI-380, MI-400, MI-425, MI-450, MI-500,
MI-525, MI-550, MI-575, MI-600, MI-625**

Parameters: See next pages.

Tested according to: PPDS Annex 4:2022

This Compliance document confirms the compliance with the listed standards on a voluntary basis. It refers only to the sample submitted for testing and certification and does not certify the quality or safety of the serial products. For details see: www.tuvsud.com/ps-cert

Test report no.: 704092520337-00

Date, 2025-04-29

(Zhengdong Ma)



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Model Name	MI-360	MI-380	MI-400
PV Input Parameters			
PV Max. Input Voltage	60 Vd.c.		
PV MPPT Range	16-60 Vd.c.		
Max. Input Continuous Current	16 Ad.c.		
Max. Input Short-circuit Current	20 Ad.c.		
A.C. Output Parameters			
Output Nominal Voltage	1/N ~ 230 V		
Output Nominal Frequency	50 Hz		
Max. Output Continuous Power	360 W	380 W	400 W
Max. Output Continuous Current	1.64 Aa.c	1.73 Aa.c.	1.83 Aa.c.
Power Factor	0.8(leading)-0.8(lagging)		

Model Name	MI-425	MI-450	MI-500
PV Input Parameters			
PV Max. Input Voltage	60 Vd.c.		
PV MPPT Range	16-60 Vd.c.		
Max. Input Continuous Current	16 Ad.c.		
Max. Input Short-circuit Current	20 Ad.c.		
A.C. Output Parameters			
Output Nominal Voltage	1/N ~ 230 V		
Output Nominal Frequency	50 Hz		
Max. Output Continuous Power	425 W	450 W	500 W
Max. Output Continuous Current	1.94 Aa.c	2.05 Aa.c.	2.28 Aa.c.
Power Factor	0.8(leading)-0.8(lagging)		

Model Name	MI-525	MI-550	MI-575
PV Input Parameters			
PV Max. Input Voltage	60 Vd.c.		
PV MPPT Range	16-60 Vd.c.		
Max. Input Continuous Current	16 Ad.c.		
Max. Input Short-circuit Current	20 Ad.c.		
A.C. Output Parameters			
Output Nominal Voltage	1/N ~ 230 V		
Output Nominal Frequency	50 Hz		
Max. Output Continuous Power	525 W	550 W	575 W
Max. Output Continuous Current	2.40 Aa.c	2.51 Aa.c.	2.63 Aa.c.
Power Factor	0.8(leading)-0.8(lagging)		



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Model Name	MI-600	MI-625
PV Input Parameters		
PV Max. Input Voltage	60 Vd.c.	
PV MPPT Range	16-60 Vd.c.	
Max. Input Continuous Current	16 Ad.c.	
Max. Input Short-circuit Current	20 Ad.c.	
A.C. Output Parameters		
Output Nominal Voltage	1/N ~ 230 V	
Output Nominal Frequency	50 Hz	
Max. Output Continuous Power	600 W	625 W
Max. Output Continuous Current	2.72 Aa.c	2.72 Aa.c
Power Factor	0.8(leading)-0.8(lagging)	

Power categories of generating plants (generating modules)				
Generati ng module category	Limit	subcategory	PGS boundaries	Most important requirements
A	800 W	☒ A1	$\geq 800 \text{ W}$ $\leq 11 \text{ kW}$	According to Article 13 for generating module A
		☒ A2	$> 11 \text{ kW}$ $< 100 \text{ kW}$	According to Article 13 for generating modules A and Articles 14.2, 14.3, 14.4, 14.5 for generating modules B and Article 20 for non-synchronous generating modules of category B
B	1 MW	☐ B1	$\geq 100 \text{ kW}$ $< 1 \text{ MW}$	According to Article 14 for generating modules B and Article 17 for synchronous generating modules B and Article 20 for non-synchronous generating modules of category B
		☐ B2	$\geq 1 \text{ MW}$ $< 30 \text{ MW}$	According to Article 14 for generating modules B and Articles 17 for synchronous generating modules B and Article 15.2, 15.3, 15.4, 15.5a, 15.5b, 15.5c, 15.6a, 15.6b, 15.6c for generating modules C, according to Art. 18 for synchronous generating modules C and according to Article 21 for non-synchronous generating modules of category C
C	50 MW	☐ C	$\geq 30 \text{ MW}$ $< 75 \text{ MW}$	according to Article 15, Article 18 and Article 21
D	75 MW	☐ D	$\geq 75 \text{ MW}$	according to Article 16, Article 19 and Article 22
As requested by manufacturer, requirements of subcategory A1 and A2 is applicable.				



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Evaluated parameter and parameter range

Interface protection system default settings and power controls in inverter (based on EN 50549-1:2019 and PPDS Annex 4:2022)					
Clause(s) / subclause(s) of EN 50549-1:2019	Parameter	Remarks/ additional information	Configurable value range	Type A1 Value default	Type A2 Value default
4.4.2 Operating frequency range	47.0 – 47.5 Hz Duration	--	0 – 20 s	Unlimited with protection setting only	
	47.5 – 48.5 Hz Duration	--	30 – 90 min	Unlimited with protection setting only	
	48.5 – 49.0 Hz Duration	--	30 – 90 min	Unlimited	
	49.0 – 51.0 Hz Duration	--	not configurable	Unlimited	
	51.0 – 51.5 Hz Duration	--	30 – 90 min	Unlimited with protection setting only	
	51.5 – 52 Hz Duration	--	0 – 15 min	Unlimited with protection setting only	
4.4.3 Minimal requirement for active power delivery at underfrequency	Reduction threshold	--	not configurable	N/A	
	Maximum reduction rate	--	not configurable	N/A	
4.4.4 Continuous operating voltage range	Upper limit	--	not configurable	110%Un	
	Lower limit	--	not configurable	85%Un	
4.5.2 Rate of change of frequency (ROCOF) immunity	ROCOF withstand capability (defined with a sliding measurement window of 500 ms)	--	not configurable	non-synchronous generating technology: 2 Hz/s	
4.5.3.2 Under-voltage ride through (UVRT) Generating plant with non-synchronous generating technology	Maximum power resumption time	--	not configurable	1 s	
	Voltage-Time- Diagram	--	See figure 6 of EN 50549-1:2019	Time [s]	U [p.u.]
				0.0	0.05
				0.25	0.05
4.5.4 Over-voltage ride through (OVRT)	Voltage-Time- Diagram	--	not configurable See figure 8 of EN 50549- 1:2019	3	0.85
				Time [s]	U [p.u.]
				0.0	1.25
				0.1	1.25
				0.1	1.20
				5.0	1.20
				5.0	1.15
				60	1.15
4.6.1 Power response to overfrequency	Threshold frequency f_1	--	50.2 Hz – 52 Hz	50.2 Hz	
	Droop	--	2 % – 12 %	5 %	
	Power reference	--	P_M P_{max}	P_M	



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	Intentional delay	--	0 – 2 s	2 s
	Deactivation threshold f_{stop}	--	50.0 Hz – f_1	50.05 Hz
	Deactivation time t_{stop}	--	0 – 600 s	600
	Acceptance of staged disconnection	--	yes no	no
4.6.2 Power response to underfrequency	Threshold frequency f_1	--	49.8 Hz – 46 Hz	49.8 Hz
	Droop	--	2 – 12 %	5 %
	Power reference	--	P_M P_{max}	P_{max}
	Intentional delay	--	0 – 2 s	2 s
4.7.2.2 Voltage support by reactive power – Capabilities	Active factor / Reactive power (%Pd) range overexcited	--	0.8 – 1 / 60 % P_n – 0	1
	Active factor / Reactive power (%Pd) range underexcited	--	0.8 – 1 / 60 % P_n – 0	1
4.7.2.3 Voltage support by reactive power – Control modes	Enabled control mode	--	Q setp. Q(U) Cos ϕ setp. Cos ϕ (P)	Q set point.
4.7.2.3.2 Voltage support by reactive power – Setpoint control modes	Q setpoint and excitation	--	0 – 60 % P_n	0
	cos ϕ setpoint and excitation	--	-0.8, ..., +0.8	1
4.7.2.3.3 Voltage support by reactive power – Voltage related control modes	Characteristic curve – Q (U)	--	--	Indicate default characteristic
	Point a	--	50% U_n – 100% U_n	93 % U_n
	Point b	--	50% U_n – 100% U_n	94 % U_n
	Point c	--	100% U_n – 115% U_n	106% U_n
	Point d	--	100% U_n – 117% U_n	108 % U_n
	Min. reactive power	--	0 – 60 %Pd ($Q_{max\ under}$)	60 %Pd
	Max. reactive power	--	0 – 60 %Pd ($Q_{max\ over}$)	60 %Pd
	Time constant	--	3 s – 60 s	3.33 s
	Min cos ϕ	--	0.0 – 1	Deactivated
	Lock in power	--	0 % – 20 %	20%
	Lock out power	--	0 % – 20 %	5%
4.7.2.3.4 Voltage support by reactive power – Power related control mode	Characteristic Curve – Cos ϕ (P) Curve –Q(P)	--	--	Indicate default characteristic
	Point a	--	0 – 100% P_n / PF: -0.8, ..., +0.8	0% P_n /PF=1
	Point b	--	0 – 100% P_n / PF: -0.8, ..., +0.8	50% P_n /PF=1
	Point c	--	0 – 100% P_n / PF: -0.8, ..., +0.8	100% P_n /PF=-0.95
	Point d	--	0 – 100% P_n / PF: -0.8, ..., +0.8	N/A
	Cos ϕ	--	-0.8, ..., +0.8	0.8
	Time constant	--	3 s – 60 s	3.33 s
	Lock in voltage	--	105 % U_n	deactivated
	Lock out voltage	--	100 % U_n	deactivated
4.7.3 Voltage related active	Characteristic	--	--	Indicate default



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power reduction	curve - P (U)			characteristic
	Point a	--	0 – 100%P _n / U:100-125%U _n	100 % / 230 V
	Point b	--	0 – 100%P _n / U:100-125%U _n	100 % / 253 V
	Point c	--	0 – 100%P _n / U:100-125%U _n	0/264.5 V
	Point d	--	0 – 100%P _n / U:100-125%U _n	--
	Time constant	--	3 s – 60 s	3.33 s
4.7.4.2.2 Zero current mode for converter connected generating technology	Enabling	--	enable disable	disabled
	Static voltage range overvoltage	--	100 % U _n – 120 % U _n	120 % U _n
	Static voltage range undervoltage	--	20 % U _n – 100 % U _n	85 % U _n
4.9.3 Requirements on voltage and frequency protection	Threshold for protection as dedicated device [in A or kW. kVA]	--	16 A – 250 kVA	Interface protection system and interface switch was integrated in a dedicated device of model MC100-L, MR100-S or MR100-T.
	Undervoltage threshold stage 1	--	0.2 U _n – 1 U _n	0.85 U _n 0.7 U _n
	Undervoltage operate time stage 1	--	0.1 s – 100 s	1.5 s 1.6 s
	Undervoltage threshold stage 2	--	0.2 U _n – 1 U _n	- 0.45 U _n
	Undervoltage operate time stage 2	--	0.1 s – 5 s	- 0.25 s
	Overvoltage threshold stage 1	--	1.0 U _n – 1.2 U _n	1.15 U _n 1.2 U _n
	Overvoltage operate time stage 1	--	0.1 s – 100 s	1 s 5 s
	Overvoltage threshold stage 2	--	1.0 U _n – 1.3 U _n	1.20 U _n 1.25 U _n
	Overvoltage operate time stage 2	--	0.1 s – 5 s	0.1 s 0.1 s
	Overvoltage threshold 10 min mean protection	--	1.0 U _n – 1.15 U _n	1.10 U _n 1.15 U _n
	Underfrequency threshold stage 1	--	47.0 Hz – 50.0 Hz	47.50 Hz 47.50 Hz
	Underfrequency operate time stage 1	--	0.1 s – 100 s	0.5 s 0.1 s
	Underfrequency threshold stage 2	--	47.0 Hz – 50.0 Hz	- -
	Underfrequency operate time stage 2	--	0.1 s – 5 s	- -
	Overfrequency threshold stage 1	--	50.0 Hz – 52.0 Hz	52 Hz 51.5 Hz
	Overfrequency	--	0.1 s – 100 s	0.5 s 0.1 s



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	operate time stage 1				
	Overfrequency threshold stage 2	--	50.0 Hz – 52.0 Hz	-	-
	Overfrequency operate time stage 2	--	0.1 s – 5 s	-	-
4.10.2 Automatic reconnection after tripping	Lower frequency	--	47.0 Hz – 50.0 Hz	47.50 Hz	
	Upper frequency	--	50.0 Hz – 52.0 Hz	50.05 Hz	
	Lower voltage	--	50 %U _n – 100 %U _n	85%U _n	
	Upper voltage	--	100 %U _n – 120 %U _n	110%U _n	
	Observation time	--	10 s – 600 s	300 s	
	Active power increase gradient	--	5% – 3000%/min	10% P _n /min	
4.10.3 Starting to generate electrical power	Lower frequency	--	47.0 Hz – 50.0 Hz	47.50 Hz	
	Upper frequency	--	50.0 Hz – 52.0 Hz	50.05 Hz	
	Lower voltage	--	50 %U _n – 100 %U _n	85 %U _n	
	Upper voltage	--	100 %U _n – 120 %U _n	110%U _n	
	Observation time	--	10 s – 600 s	300 s	
	Active power increase gradient	--	5% – 3000 %/min	10% P _n /min	
4.11.1 Ceasing active power	Activation option	--	e.g. digital input		
4.11.2 Reduction of active power on set point	Activation option	--	e.g. digital input		
4.12 Remote information exchange	Available communication standards	--	Standardized communication protocol not provided by manufacturer		