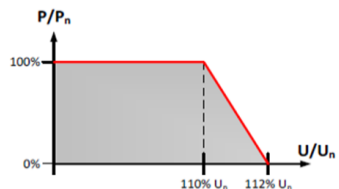


Inverter settings for the grid of "Elektrozpredelenie South" EAD

		Type A - LV	Type A end B - MV
4.4.2 Operating frequency range	47,0 – 47,5 Hz Duration	0 s	0 s
	47,5 – 48,5 Hz Duration	30 min	30 min
	48,5 – 49,0 Hz Duration	30 min	30 min
	49,0 – 51,0 Hz Duration	unlimited	unlimited
	51,0 – 51,5 Hz Duration	30 min	30 min
	51, 5 – 52 Hz Duration	0 s	0 s
4.4.3 Minimal requirements for active power delivery at underfrequency	Reduction threshold	49,5 Hz	49,5 Hz
	Reduction rate	10% P _M /Hz	10% P _M /Hz
4.4.4 Continuous voltage operation range	Upper limit	110% U _n	110% U _n
	Lower limit	85% U _n	85% U _n
4.5.2 Rate of change of frequency (ROCOF)	ROCOF withstand capability (defined with a sli	2,5 Hz/s	2,5 Hz/s
4.5.3.2 UVRT	Maximum power resumption time	1s	1s
	Voltage-Time-Diagram	Time, s / U, p.u.	Time, s / U, p.u.
		0/0,15	0/0,05
		0,15/0,15	0,15/0,05
		1,5/0,85	0,7/0,15
			1,0/0,5
			1,5/0,85
4.5.4 OVRT	Voltage-Time-Diagram	Time, s / U, p.u.	Time, s / U, p.u.
		-	-
		-	-
		-	-
		-	-

		-	-
		-	-
		-	-
4.6.1 Power response to over frequency	Threshold frequency f1	52 Hz (disabled)	52 Hz (disabled)
	Droop	5%	5%
	Power reference	P _M	P _M
	Intentional delay	0 s	0 s
	Deactivation threshold fstop	deactivated	deactivated
	Deactivation time tstop	-	-
	Acceptance of staged disconnection	yes	yes
4.6.2 Power response to under frequency	Threshold frequency f1	46 Hz (disabled)	46 Hz (disabled)
	Droop	5%	5%
	Power reference	P _{max}	P _{max}
	Intentional delay	0 s	0 s
4.7.2.2 Capabilities	Active factor range overexcited	disabled	disabled
	Active factor range underexcited	disabled	disabled
4.7.2.3. Control modes General	Enabled control mode	-	-
4.7.2.3.2 Setpoint control modes	Q setpoint and excitation	0	0
	cos φ setpoint and excitation	1	1
4.7.2.3.3 Voltage related control modes	Characteristic curve	-	-
	Time constant	-	-
	Min cos φ	-	-
	Lock in power	-	-
	Lock out power	-	-
4.7.2.3.4 Power related control modes	Characteristic curve	-	-
4.7.4.2.1 Voltage support during faults and voltage steps - General	Enabling	disabled	disabled
	Static voltage range overvoltage	-	110% Un
	Static voltage range undervoltage	-	85% Un

	Intensivity range $\Delta U_{50\text{per}}$	-	5%
	Gradient k1	-	2
	Gradient k2	-	2
4.7.4.2.1.2 Optional modes	Active power priority		disabled
	Reactive current limitation (% rated current)		disabled
	Zero current threshold		disabled
4.7.4.2.2 Zero current mode	Enabling	disabled	disabled
	Static voltage range overvoltage	120% Un	-
	Static voltage range undervoltage	50% Un	50% Un
4.9.2 (4.9.3) Requirements on voltage and frequency protection	Threshold for protection as dedicated device [in A or kW, kVA]		
	Undervoltage threshold stage 1	0,8 Un	0,8 Un
	Undervoltage operate time stage 1	1,5 s	1,5 s
	Undervoltage threshold stage 2	0,25 Un	-
	Undervoltage operate time stage 2	0,5 s	-
	Overvoltage threshold stage 1	1,11 Un	1,11 Un
	Overvoltage operate time stage 1	60 s	60 s
	Overvoltage threshold stage 2	1,15 Un	1,15 Un
	Overvoltage operate time stage 2	0,1 s	0,1 s
	Overvoltage threshold 10 min mean protection	1,11 Un	1,11 Un
	Underfrequency threshold stage 1	47,5 Hz	47,5 Hz
	Underfrequency operate time stage 1	0,1 s	0,1 s
	Underfrequency threshold stage 2	-	-
	Underfrequency operate time stage 2	-	-
	Overfrequency threshold stage 1	50,3 Hz	50,3 Hz
	Overfrequency operate time stage 1	1 s	1 s
When is available second stage	Overfrequency threshold stage 2	51,5 Hz	51,5 Hz
	Overfrequency operate time stage 2	0,1 s	0,1 s
4.10.2 Automatic reconnection after tripping	Lower frequency	47,6 Hz	47,6 Hz
	Upper frequency	50,2Hz	50,2Hz
	Lower voltage	85% Un	85% Un

	Upper voltage	109% Un	109% Un
	Observation time	600 s	600 s
	Active power increase gradient	10%/min	10%/min
4.10.3 Starting to generate electrical power	Lower frequency	47,6 Hz	47,6 Hz
	Upper frequency	50,2Hz	50,2Hz
	Lower voltage	85% Un	85% Un
	Upper voltage	109% Un	109% Un
	Observation time	60 s	60 s
	Active power increase gradient	disabled	disabled
4.11.1 Active power reduction by setpoint		no	yes
4.11.2 Ceasing active power (Logic interface)		yes	yes
4.12 Remote information exchange	Remote information exchange required	yes	no
P(U) 	P0 (P%;V%) P1 (P%;V%) P2 (P%;V%)	100%;100% 100%;110% 0%;112%	0%, 30%, 60%; 100%