

Data sheet
Powador-protect



Measuring. Controlling. Protecting.

Grid management with Powador-protect.

Powador-protect is a voltage and frequency protection device and a control unit for PV systems that feed into the medium- or low-voltage grid. If an interface protection test is not possible due to a large number of string inverters or lack of inverter test terminals, Powador-protect can be used as central interface protection according to VDE-AR-N 4105 and CEI 0-21. Powador-protect also offers the functionality for feed-in management. It evaluates potential free contacts provided by the control system of the distribution network operator and transmits configurable feed-in commands as defined by the distribution network operators.

As a protection device, Powador-protect constantly measures the voltage and frequency grid parameters. If a limit violation of grid parameters is detected, Powador-protect triggers the interface switch and disconnects the PV System from the grid. This function is available with inverters from any manufacturer. The best results are achieved when

Powador-protect is operated with KACO new energy three-phase inverters or transformerless single-phase inverters: KACO new energy inverters are equipped with internal interface switches that are controlled directly by Powador-protect.* No external interface switches are necessary.

As a voltage and frequency protection device, Powador-protect provides a single-fault tolerance (redundant design). This means that if a single error occurs in the device, the safety functions always remain intact; the fault is detected and signaled for maintenance.

For smaller systems, Powador-protect is the ideal solution because some distribution network operators require voltage drops between the inverter and meter to be taken into account. If there are long distances, shutdowns may occur in grids with high voltages because of the voltage drop between inverter and meter. Powador-protect is installed in the main distribution system and measures the

voltage directly at the meter. The internal protection setting on the inverter can therefore be set higher.

Powador-protect also offers another important feature: feed-in management. In some countries, law requires managed, remote-controlled power reduction of PV systems above a certain installed power. Formerly, a separate device was required for this purpose to send the corresponding signals of a ripple control receiver to the inverter as a control command. Powador-protect combines the functions of grid and system protection and feed-in management, saving space and money.

During feed-in management, Powador-protect can manage the signals of the ripple control receiver for up to 31 inverters.

* Please note the Application note "Powador protect" for compatibility.

Technical data

Powador-protect

Electrical data		Powador-protect
Supply		
Power supply	100–264 V AC	
Rated voltage	230 V AC	
Max. power consumption	2.5 W	
Measurement		
r.m.s. value of grid voltage	0 – 300 V AC	
Frequency	40-70 Hz	
Rated frequency	50 Hz	
Actuation of external tie circuit-breaker		
Max. AC current	2.0 A	
Max. AC voltage:	250 V	
Max. AC current	8.0 A	
Max. DC voltage:	30 V	
Mechanical data		
Interfaces		
Measurement	Screw terminals, 4-pole (L1/L2/L3/N)	
Switch contacts	2 changeover contacts for connecting external tie circuit-breakers	
Ripple control receiver	Screw terminals	
Inverter	Screw terminals for inverter off Screw terminals and RJ45 port for RS485	
General mechanical data		
Display	LCD 2 x 16 characters, 3 LEDs (operating status)	
Controls	2 control buttons, 1 release test	
Mounting	Top-hat rails or wall mounts	
Ambient temperature	-20 °C ... +70 °C	
Protection class	IP20	
Housing	Polycarbonate	
H x W x D	89.5 x 107 x 63 mm	
Weight	310 g	



Powador-protect

Grid and system protection as per VDE-AR-N 4105 and CEI 0-21

Individual voltage and frequency adjustment options via the "User Defined" menu selection

Triggers the inverter's integrated coupler circuit-breaker

Also as a supplement to Powador-proLOG

Temporary protection according to the German Medium Voltage Directives

Your retailer