

To All Partners and Customers

Teningen, August 2018

New features for the PQC in firmware V2.1

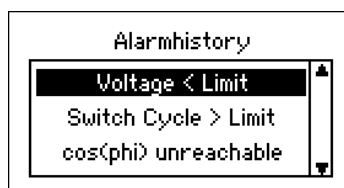
Dear Partners and Customers,

With this announcement we would like to inform you about new functions of the PQC (Power Quality Controller), that we have integrated into the new firmware V2.1, which will be delivered beginning in August 2018. Beside some minor optimizations, we integrated three new features such as the alarm history, a min/max memory and the advanced controller profile switching.

The **alarm history** displays the last 10 alarms of the PQC in plain text (see figure). With some alarms you will also receive further information such as the phase number in which the alarm occurred.

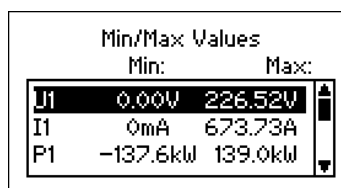
A second new feature we are introducing is the **min/max memory** (see figure 2). Here the PQC displays the min and max values for certain parameters such as voltage, current, power (P & Q), cos phi, as well as the individual harmonics of voltage and current. PQC controllers, equipped with the TEMP I/O module, will also display the measured temperatures.

The third new feature included with the new firmware V2.1 is the **advanced controller profile switching**. It enables the customer to switch the control profiles in different ways. The profiles can be activated or changed by external signals, via the inputs on the Temp-I/O module or via settable parameters/thresholds for voltage or active power (see figure 3). Profile switching by voltage or active power, also known as Q(V) or Q(P) control is often required for grid-feeding systems.



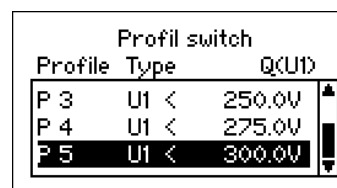
Alarmhistory	
Voltage < Limit	▲
Switch Cycle > Limit	
cos(phi) unreachable	▼

Figure 1 | Alarmhistory



Min/Max Values		
	Min:	Max:
U1	0.00V	226.52V
I1	0mA	673.73A
P1	-137.6kW	139.0kW

Figure 2 | Min/Max memory



Profil switch		
Profile	Type	Q(U)
P 3	U1 <	250.0V
P 4	U1 <	275.0V
P 5	U1 <	300.0V

Figure 3 | Q(V) control parameters

PQC's delivered after August 2018, will be equipped with the new V2.1 firmware. All other (older) PQC's can be updated to the new firmware. Our customer service department can assist you with instructions for making the update.

For any other questions regarding the new features, please do not hesitate to get in touch with your responsible contact person.

Best regards,

FRAKO Kondensatoren- und Anlagenbau GmbH