

COMMISSIONING OF ACTIVE FILTERS

1.- End user data

End user			
Location		Order No	

2.- Integrator data

Integrator			Area	
Hours worked		km	Commissioning date	

#	Name	ID number
1		
2		

3.- Active Filter data

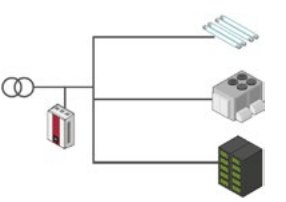
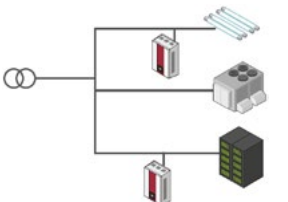
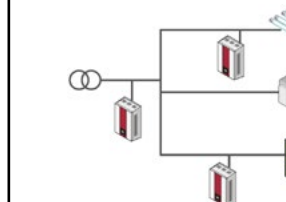
Model		Code	
Serial number		Manufacturing date	
ID number		Internal IP	

4.- Visual inspection of the device

Description	OK	NO OK
Visual inspection of the devices; no scratches or dented are visible...		
Check the absence of voltage and the impossibility to reconnect		
Ambient temperature within the working temperature range (-10 °C ... 45 °C)		
Verification of the cross section of the cables is in accordance with the device's specifications.		mm ²
Verification of the proper power connection (L1, L2, L3, N) and Earth.		
Verification of the communications' connection (if needed)		
<i>(Cabinet model active filter) Verify the 125 A fuses are installed in the connection module.</i>		
Check that the mains voltage is suitable for the filter's working range.		
Notes:		

5.- Installation inspection

	Location	Mains side	Load side	
Current transformers (CT)	Wiring and absence of the jumper bars in the terminal			
	Ratio		/ 5 A	
	Without reactors (not recommended)	Contact After Sales Service		
Capacitor banks	With detuned reactors to the 5th harmonic or higher.	<i>Disable 3rd harmonic in the Active Filter</i>		
	With detuned reactors to the 3rd harmonic or higher.			
	Type of connection			

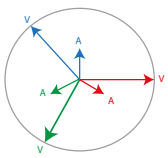
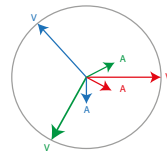
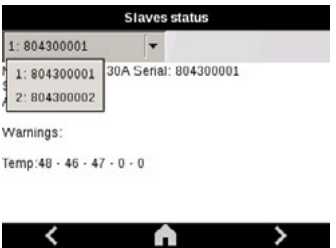
Protections	Verify the correct sizing of the protections		
	Circuit breaker (Caliber / Type / Programming) :		
	RCD (Caliber / Type / Programming) :		
Other Active Filters	Type of connection		
			
			<i>Contact After Sales Service</i>
Notes:			

6.- Electrical elements

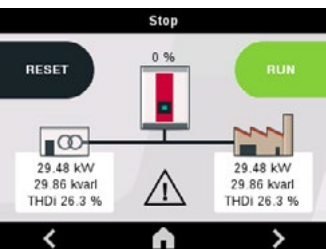
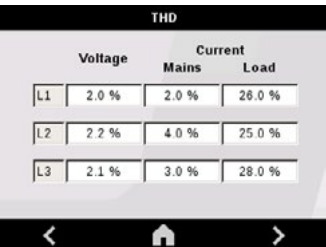
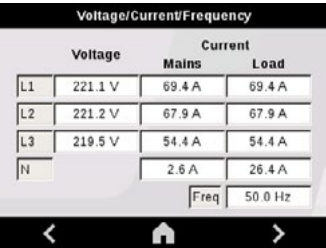
Verify phase sequences and correspondences with their CT	L1 / L2 / L3	OK	NO OK
	L1 (S1-S2) / L2 (S1-S2) / L3 (S1-S2)		
Check and note the tightening torque in the terminals:			
AFQe-xWF-030M	Power cable connections (Phases)	Normalized 1.5 ... 1.8 Nm	Checked
	Neutral cable connections	1.5 ... 1.8 Nm	
	Earth cables connections	2.2 ... 2.4 Nm	
	Connections of the terminals of the CT	0.5 ... 0.6 Nm	
AFQe-xWF-100C AFQe-xWF-200C	Power cable connections (Phases)	6 Nm	
	Neutral cable connections	35 Nm	
	Earth cables connections	35 Nm	
	Connections of the terminals of the CT	0.8 Nm	
AFQm-xxx-030M AFQm-xxx-060M	Power cable connections (Phases)	2.2 ... 2.4 Nm	
	Neutral cable connections	2.2 ... 2.4 Nm	
	Earth cables connections	2.2 ... 2.4 Nm	
	Connections of the terminals of the CT	0.5 ... 0.6 Nm	
AFQm-xxx-100M AFQm-xxx-100R	Power cable connections (Phases)	8 ... 10 Nm	
	Neutral cable connections	8 ... 10 Nm	
	Earth cables connections	10 ... 14 Nm	
	Connections of the terminals of the CT	0.5 ... 0.6 Nm	
AFQm-xxx-100C AFQm-xxx-200C AFQm-xxx-300C AFQm-xxx-400C	Power cable connections (Phases)	45 Nm	
	Neutral cable connections	45 Nm	
	Earth cables connections	45 Nm	
Notes:			

7.- Verification of on-screen parameters

Close the device and power up

Description		OK	NO OK
Display responds			
No alarms or warnings are shown on-screen.			
Phase sequence	Sign of the active power (positive)		
	Cos φ between 0.7 (inductive) ... 0.98 (capacitive)		
	Phasor diagram is correct		
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>OK</p> </div> <div style="text-align: center;">  <p>NO OK</p> </div> </div>		
Verify whether all the slave devices have been detected. <i>Note: Wait 5 minutes after the connection between devices is done</i>		ID of slave devices:	
Notes:			

8.- Screen data with the Active Filter stopped

	Mains Active Power: Reactive Power: Current THD:	Load Active Power: Reactive Power: Current THD:
	Voltage L1 L2 L3	Current Mains Load L1 L1 L1 L2 L2 L2 L3 L3 L3
	Voltage L1 L2 L3 Frequency	Current Mains Load L1 L1 L1 L2 L2 L2 L3 L3 L3 N N

	<p style="text-align: center;">Mains power</p> <table border="1"> <thead> <tr> <th></th> <th>P</th> <th>Q</th> <th>S</th> <th>cos φ</th> </tr> </thead> <tbody> <tr> <td>L1</td> <td>9.9 kW</td> <td>0.7 kvar</td> <td>9.9 kVA</td> <td>1.00</td> </tr> <tr> <td>L2</td> <td>9.8 kW</td> <td>-1.7 kvar</td> <td>9.9 kVA</td> <td>0.99</td> </tr> <tr> <td>L3</td> <td>10.0 kW</td> <td>0.0 kvar</td> <td>10.5 kVA</td> <td>1.00</td> </tr> </tbody> </table>		P	Q	S	cos φ	L1	9.9 kW	0.7 kvar	9.9 kVA	1.00	L2	9.8 kW	-1.7 kvar	9.9 kVA	0.99	L3	10.0 kW	0.0 kvar	10.5 kVA	1.00	<p style="text-align: center;">Load power</p> <table border="1"> <thead> <tr> <th></th> <th>P</th> <th>Q</th> <th>S</th> <th>cos φ</th> </tr> </thead> <tbody> <tr> <td>L1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L3</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		P	Q	S	cos φ	L1					L2					L3																
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9.- Configuration Data

	<p style="text-align: center;">Specifications</p> <p>Model:</p> <p>Type:</p>	<p>Notes:</p>												
	<p style="text-align: center;">Installed units</p>	<p>Notes:</p>												
	<p style="text-align: center;">Working mode</p> <p>Mode</p> <p>Enable functions</p> <p>Harmonics Phase balance</p> <p>Priority Reactive</p>	<p>Notes:</p>												
	<p style="text-align: center;">Harmonics selection</p> <table border="1"> <tbody> <tr> <td>3</td><td>5</td><td>7</td><td>9</td><td>11</td><td>13</td> </tr> <tr> <td>15</td><td>17</td><td>19</td><td>21</td><td>23</td><td>25</td> </tr> </tbody> </table>	3	5	7	9	11	13	15	17	19	21	23	25	<p>Notes:</p>
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	<p style="text-align: center;">Limits</p> <p>Min current.</p> <p>Current limit</p> <p>Cos φ</p>	<p>Notes:</p>
	<p style="text-align: center;">Current transformer</p> <p>Num. Transformers</p> <p>Position</p> <p>Ratio</p> <p>Invert</p>	<p>Notes:</p>
	<p style="text-align: center;">Alarms</p> <p>Resonance</p>	<p>Notes:</p>
	<p style="text-align: center;">Communications</p> <p>IP Address</p> <p>Netmask</p> <p>Gateway</p> <p>DHCP</p>	<p>Notes:</p>
	<p style="text-align: center;">RS485</p> <p>Modbus device</p>	<p>Notes:</p>
	<p style="text-align: center;">Date/Time</p> <p>Time</p> <p>Date</p> <p>Time Zone</p> <p>Internet time</p>	<p>Notes:</p>

10.- Screen data with the Active Filter running

	<p>Mains Active Power: Reactive Power: Current THD:</p>	<p>Load Active Power: Reactive Power: Current THD:</p>
	<p>Voltage L1 L2 L3</p>	<p>Current Mains L1 L2 L3 Load L1 L2 L3</p>
	<p>Voltage L1 L2 L3 Frequency</p>	<p>Current Mains L1 L2 L3 Load L1 L2 L3 N N</p>
	<p>Mains power P Q S cos φ L1 L2 L3</p>	<p>Load power P Q S cos φ L1 L2 L3</p>
	<p>Load harmonics L1 L2 L3</p>	<p>3 5 7 9 11 13 15 17 19 21 23 25</p>

11.- Simplified single line diagram of the installation (with active filter)

Acceptance and Signatures	
Installer	Client