

4.4.09-01/15 High-pass and low-pass filters



What you can learn about ...

- Circuit
- Resistance
- Capacitance
- Inductance
- Capacitor
- Coil
- Phase displacement
- Filter
- Kirchhoff's laws
- Bode diagram

Principle:

A coil, a capacitor, an ohmic resistance and combinations of these components are investigated for their filter characteristics as a function of frequency. The phase displacement of the filters is determined also as a function of frequency.

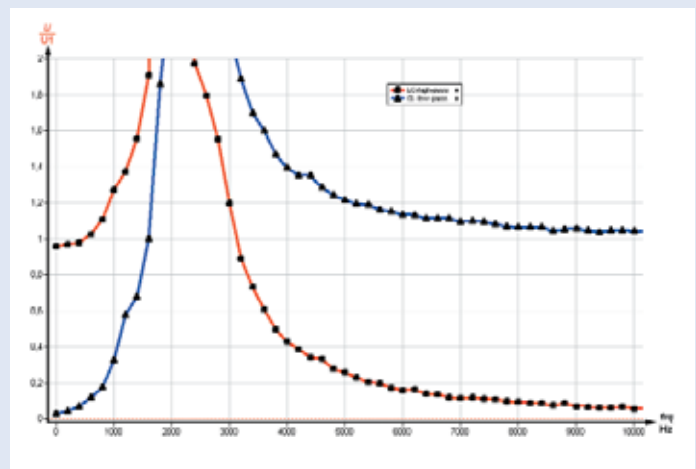
Set-up of experiment P2440915 with FG-Module

What you need:

Experiment P2440915 with FG-Module
 Experiment P2440901 with oscilloscope

Function generator	13652.93	1
Oscilloscope 30 MHz, 2 channels	11459.95	1
Digital counter, 4 decades	13600.93	1
Difference amplifier	11444.93	1
Screened cable, BNC, $l = 750$ mm	07542.11	2
Connecting cable, 4 mm plug, 32 A, blue, $l = 10$ cm	07359.04	1
Coil, 300 turns	06513.01	1 1
Carbon resistor 47 Ω , 1W, G1	39104.62	1 1
Carbon resistor 1 k Ω , 1W, G1	39104.19	2 2
Capacitor 1 microF/ 250 V, G2	39113.01	1 1
Capacitor 4,7microF/ 250 V, G2	39113.02	1 1
Connecting cable, 4 mm plug, 32 A, red, $l = 50$ cm	07361.01	4 2
Connecting cable, 4 mm plug, 32 A, blue, $l = 50$ cm	07361.04	4 2
Connection box	06030.23	1 1
Cobra3 BASIC-UNIT	12150.00	1
Power supply 12V/2A	12151.99	2
Data cable 2 x SUB-D, plug/socket, 9 pole	14602.00	1
Software Cobra3 PowerGraph	14525.61	1
Software Cobra3 Universal recorder	14504.61	1
Measuring module Function Generator	12111.00	1
Connecting cable, 4 mm plug, 32 A, red, $l = 25$ cm	07360.01	1
Connecting cable, 4 mm plug, 32 A, blue, $l = 25$ cm	07360.04	1
PC, Windows® 95 or higher		

Complete Equipment Set, Manual on CD-ROM included
 High-pass and low-pass filters P24409 01/15

 U_2/U_1 as a function of the frequency with the LC and CL network.

Tasks:

1. RC/CR network,
2. RL/LR network,
3. CL/LC network,
4. Two CR networks connected in series.
5. Determination of the phase displacement with the RC/CR network.
6. Determination of the phase displacement with two CR networks connected in series.