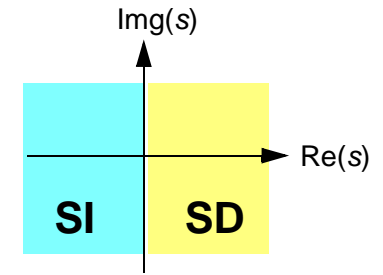


$$H(s) = \frac{N(s)}{D(s)} = K \cdot \frac{\prod_{i=1}^a s \prod_{i=1}^b \left(1 + \frac{s}{\omega_{z_i}}\right) \prod_{i=1}^c \left(1 + \frac{s}{\omega_{oz_i} Q_{z_i}} + \frac{s^2}{\omega_{oz_i}^2}\right)}{\prod_{j=1}^d s \prod_{j=1}^e \left(1 + \frac{s}{\omega_{p_j}}\right) \prod_{j=1}^f \left(1 + \frac{s}{\omega_{op_j} Q_{p_j}} + \frac{s^2}{\omega_{op_j}^2}\right)}$$

$a + b + 2c = n$   
 $d + e + 2f = N$   
 $n \leq N$   
 $Q = \frac{1}{2\xi}$



← SEMIPLANO IZQUIERDO →

	$K > 0$	POLO EN DC	CERO EN DC	POLO REAL $\omega_p > 0$		CERO REAL $\omega_z > 0$		POLOS COMPLEJOS $Q_p > 0$		CEROS COMPLEJOS $Q_z > 0$					
<b>MAG.</b>	$20\log K $	-20dB/dec	+20dB/dec	0	-3dB	-20dB/dec	0	+3dB	+20dB/dec	0	+20log(  $Q_p$  )	-40dB/dec	0	-20log(  $Q_z$  )	+40dB/dec
<b>FASE</b>	0	-90°	+90°	0	-45°	-90°	0	+45°	+90°	0	-90°	-180°	0	+90°	+180°

← SEMIPLANO DERECHO →

	$K < 0$			POLO REAL $\omega_p < 0$		CERO REAL $\omega_z < 0$		POLOS COMPLEJOS $Q_p < 0$		CEROS COMPLEJOS $Q_z < 0$					
<b>MAG.</b>	$20\log K $			0	-3dB	-20dB/dec	0	+3dB	+20dB/dec	0	+20log(  $Q_p$  )	-40dB/dec	0	-20log(  $Q_z$  )	+40dB/dec
<b>FASE</b>	-180°			0	+45°	+90°	0	-45°	-90°	0	+90°	+180°	0	-90°	-180°