$$F_{sin} \rightarrow \boxed{\uparrow 3} \rightarrow \boxed{H_1(z)} \rightarrow \boxed{\downarrow 2} \xrightarrow{F_{int}} \boxed{\uparrow 3} \rightarrow \boxed{H_2(z)} \rightarrow \boxed{\downarrow 4} \xrightarrow{F_{sout}}$$