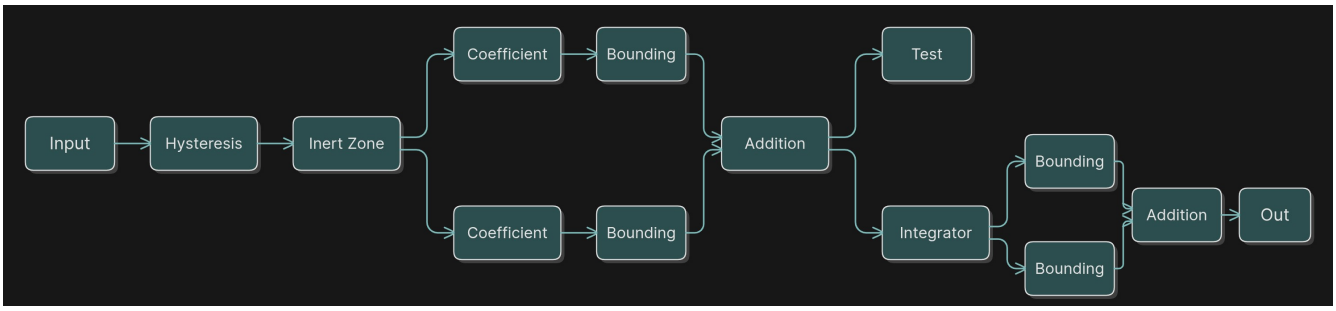
**“ COMPONENTE SERVORELÈ TYPE *SR* ” SPECIFICATIONS**

**BOLOGNA’S PHILBRICK INSTALLATION**

In his 1951 55-page booklet Zanobetti describes an additional, out-of catalog, K4-sized component used in the Bologna Philbrick analog computer. This unit was designed to model a complex servo-control incorporating bounding, limiting and integral control.
The block diagram, very complex, is as shown below:




It uses the following quantities of K3 Black boxes:

- (2) K3-C Coefficients
- (1) K3-H Hysteresis
- (1) K3-Z Inert Zone
- (4) K3-B Bounding Component
- (1) K3-J Integrating Component
- (2) K3-A Adding Component

For a total of eleven K3 Components for this special arrangement. Actual transfer function is hard to determine mathematically given the nonlinear Bounding, Hysteresis and Dead Zone components. Zanobetti himself does not attempt a mathematical derivation; he instead opts to gives the block diagram as reproduced above. The “Test” jack allow the operator to check the output prior to its integration, allowing a static check of the bound-limits settings.
It is not known whether this component was manufactured in-house by Philbrick or constructed directly by the University of Bologna. Further documentation may eventually clarify the applications and provenance of this unit.