

Proximity Magnetic Sensors

Magnetic units

CL Series

CARLO GAVAZZI



- Rectangular, cylindrical or trapezoidal housing
- Several dimensions
- Side or front operating mode

Product Description

The CL magnetic units, used for operating magnetic proximity sensors, consist of permanent magnets sharply sized for the job they are intended. Their shape can be rectangular, cylindrical or trapezoidal.

Block-shaped magnetic units must be placed on non-magnetic supports. Their minimum thickness must be in accordance with the one listed in the table "Type Selection", in parallel to the switch longitudinal axis.

Ordering Key

CL 2

Magnetic unit Type

General Specification

Shape	Housing material	Magnetic material*	Minimum separation**	Reference
Rectangular	Plastic	Alnico	10	CL1
	Plastic	Alnico	20	CL2
	Plastic	Alnico	30	CL3
	Plastic	Alnico	50	CL4
Cylindrical	Plastic	Alnico	Not mandatory	CL10
	Plastic	Alnico	Not mandatory	CL11
	-	Ferrite	Not mandatory	CL18
	-	Ferrite	Not mandatory	CL23
	-	Ferrite	Not mandatory	CL31
	-	Ferrite	Not mandatory	CL20S1
Trapezoidal	Plastic	Ferrite	Not mandatory	CL20S3
	Plastic	Alnico	Not mandatory	CL90

Distances are specified in millimeters (mm)

* see Magnetic Material Description table for more details.

** minimum distance required between two magnetic units on the same axis.

Magnetic Material Description

The principal materials, by which the above mentioned magnetic units are realized, can be classified in:

- **Ferrite:** is a mixture made of iron oxide and barium carbonate (or strontium) and is obtained through a dry or wet way sintering process.

- **Alnico:** is a mixture made of iron, aluminum, nickel, cobalt and other elements in lower percentage; it is obtained through fusion and its principal features

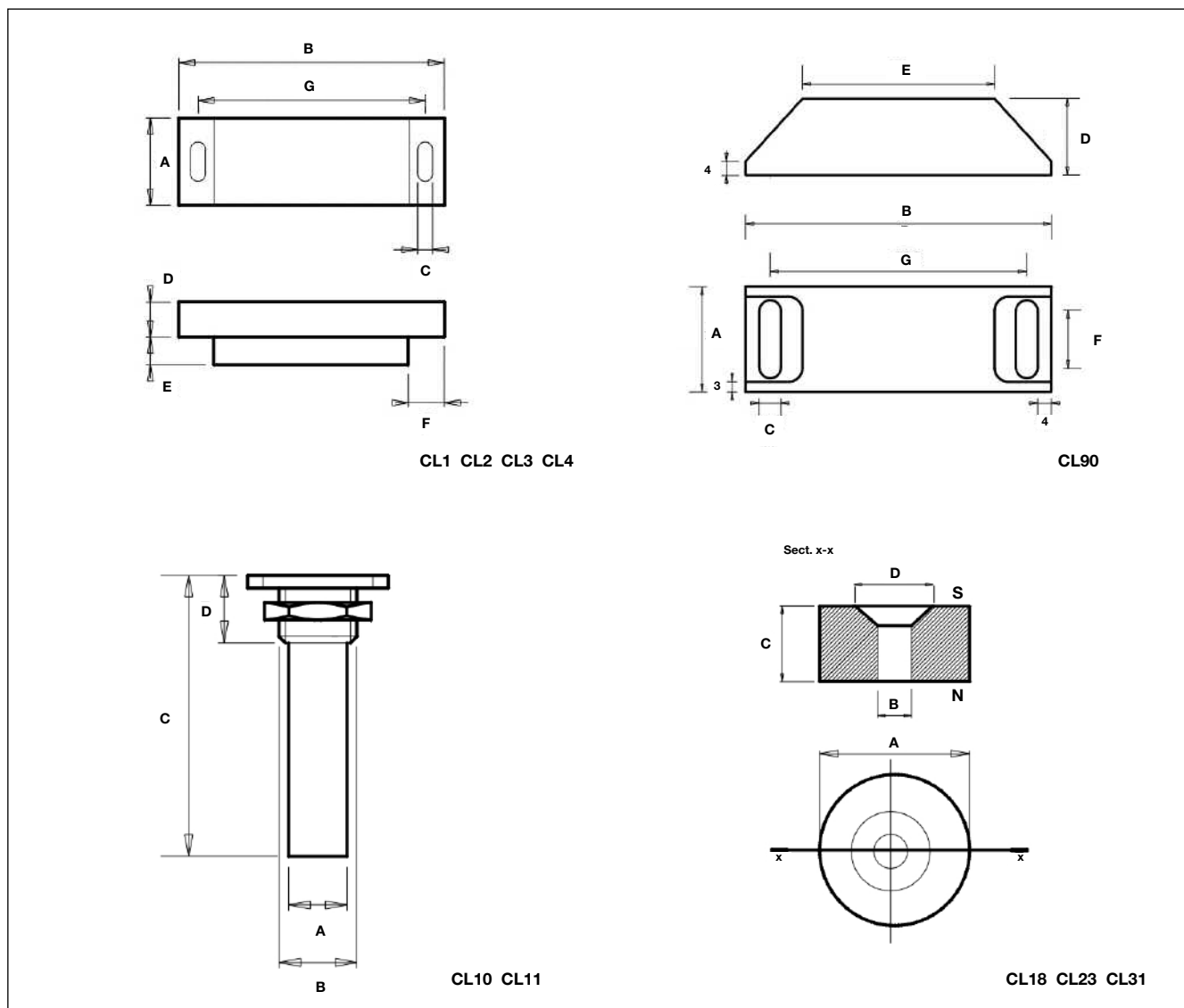
are the hardness and the relative resistance to hits, the high value of magnetization and the possibility to be used at high temperatures.

Type Selection

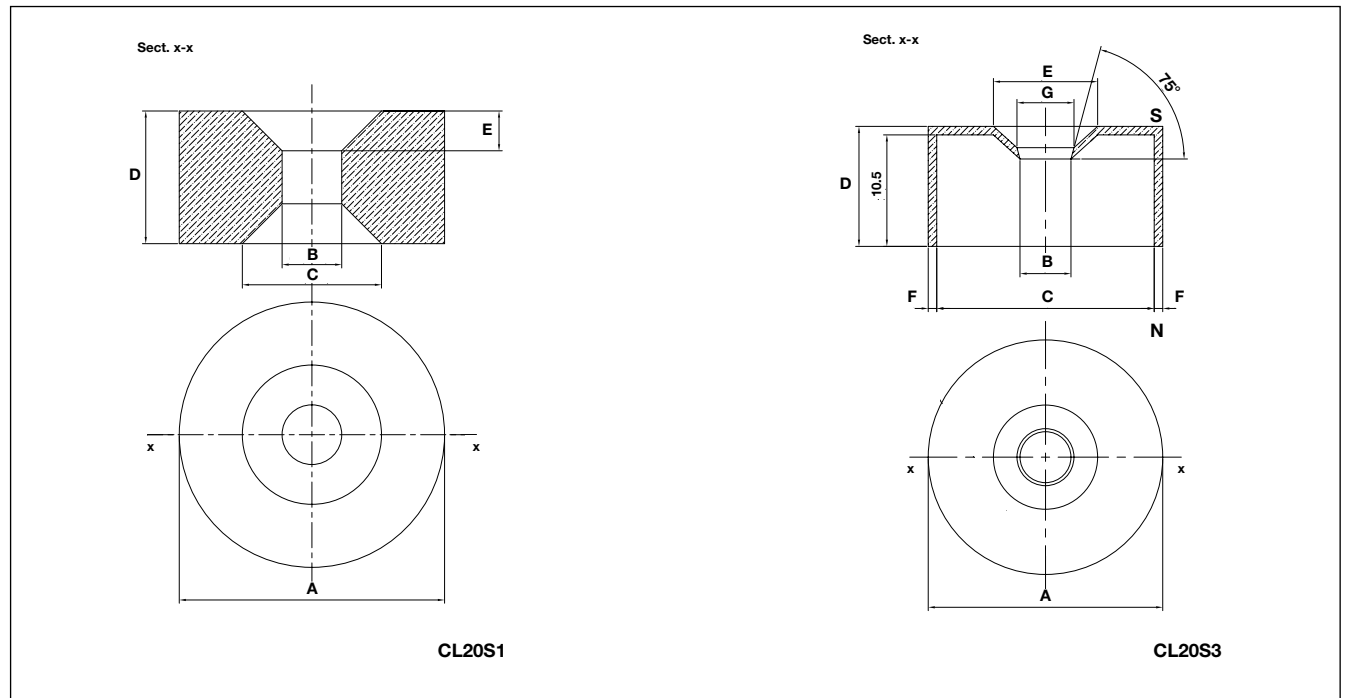
Shape	A	B	C	D	E	F	G	Reference
Rectangular	14	25	2.7	8	-	-	16	CL1
	12	44.5	2.5	9	-	-	35.5	CL2
	18	59	3.0	9	-	-	50	CL3
	25	76	4.2	10	8	10	65	CL4
Cylindrical	Ø9.3	M12x1.25	32	10.5	-	-	-	CL10
	Ø13.5	M18x1.5	65	11	-	-	-	CL11
	18	3	6	6	-	-	-	CL18
	23	4.5	9	8.5	-	-	-	CL23
	31	4.5	10	10	-	-	-	CL31
	20	4.5	10.5	10	3	-	-	CL20S1
	22.1	4.8	20.5	11.3	9.8	0.8	5.37	CL20S3
Trapezoidal	31	90	6.5	22.5	54	16.5	75.5	CL90

Dimensions are specified in millimeters (mm)

Dimensions



Dimensions (cont.)



North / South pole reference

The label clearly identifies the polarity of the magnet: the letter “N” stands for “North pole” and the letter “S” for “South pole”.



CL10/11



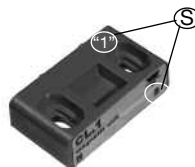
CL90



CL20S3

For the following magnets the “South pole” is also identified by a number printed on the plastic housing:

“1” for CL1; “2” for CL2; “3” for CL3; “4” for CL4



CL1, CL2, CL3, CL4

For the following magnets which don't have any label applied on them the South pole is identified by the white coloured area for the CL20S1 and the countersink for the CL18, CL23 and CL31:



CL20S1



CL18, CL23, CL31