

Load Guard



The PIAB Load Guard is designed to provide reliable control switching against overtension.

For process control, overload alarm, stepped moment protection and load sensing systems.

The instruments have a high repeating accuracy and fully conform to the International Protection Specification Class IP 67

GIGAsense

Gigasense products within Force Measurement and Crane Safety are well known high quality products, built from many years' experience and used by leading heavy duty industry around the world.

Gigasense products meet the highest demands of performance level requirements.

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Load Guard



Technical Data

WORKING TEMPERATURE

Continuous operation up to +60°C. We supply specially designed PIAB Load Guards for temperatures up to +200°C.

REPEATABILITY

+/- 0,6% of max. capacity.

CONTACT LOAD

Max. 250VAC, 500VA, 3A.

CABLE AREA

Max. 4 mm².

MECHANICAL LIFE OF THE MICRO SWITCH

2 mill cycles.

PROTECTION CLASS

IP 67, IEC 529.

Range of application

The PIAB Load Guard is intended for use as an overload guard in cranes and lifts, for the automatic tensiing of belt conveyors and for other automatic power-sensing or load control.

Function

The movement of the pull rod operates the micro switches through spring loaded contact points. The power absorbing element consists of specially made Belleville washers dimensioned to resist fatigue. The spring washers cannot be overloaded.

Safety

The safety factor is 5:1 which gives guaranteed strength against breakage at least 5 times the maximum capacity. The PIAB Load Guard can be overloaded by 100% without interfering with the switch setting. As the transmission parts between the pull rod and the micro switch are spring loaded, the PIAB Load Guard can withstand severe shock loads and sudden unloading. The pull rod and upper bracket of the load guards types IMB-IG are made of drop forged steel SIS 2174 (St 52-3N acc. to DIN 17100, 50 D acc. to BS 4360) which has guaranteed impact strength down to -20°C.

Contact function

The PIAB Load Guard with one or two micro switches is supplied with alternative contact connections for each micro switch. PIAB Load Guards with three, four or five micro switches have either one breaking or closing function on each switch. These are normally set for the breaking function, i.e. closed contacts at rest, and for rising loads, unless otherwise ordered.

When set for falling load, e.g. control on the slack line, the micro switch is connected for the closing function, i.e. open contact at rest.

If you will use the PIAB Load Guard as safety application, the breaking function should always be used. The micro switches have gold-plated contacts, which make them suitable for operation on low current or Voltage, under 60mA or/and 10V.

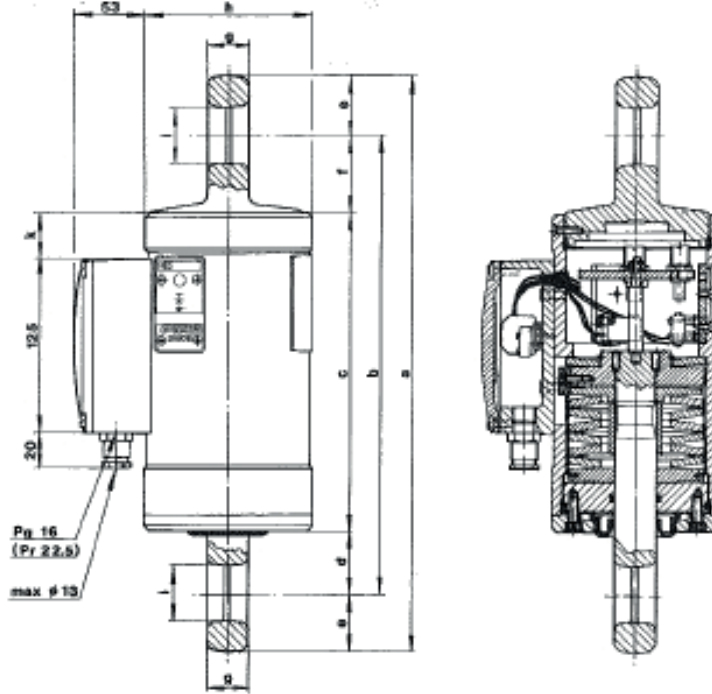
The difference between the switching value on rising and falling loads is approximately 3% of the max. capacity of the instrument. This hysteresis is somewhat reduced at lower loads and slightly increased at higher load values.

To avoid “chattering” of the contacts and contactors if the load should start to sway, a time relay to delay the reclosing of the hoisting circuit may be installed. When set for falling loads, special micro switches with reduced hysteresis are used. The switch levels are set by the factory to the required level.

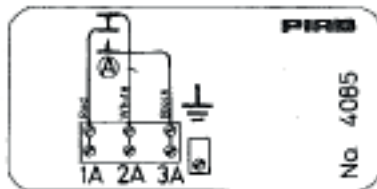


Protection against corrosion

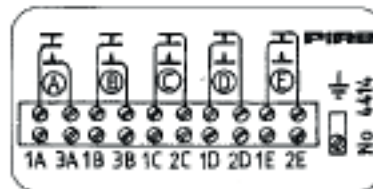
The PIAB Load Guard is fully pressure tight. Each instrument is tested under pressure. The external is Zink coated and white chromated and the terminal box is Polyester lacquered. If you plan to use the PIAB Load Guard in very corrosive environment, the complete instrument can be Polyester lacquered



Connection Diagram



One Microswitch



Five Microswitches

TYPE/ NUMBER OF SWITCHES	CAPACITY KG	DEAD WEIGHT KG	DIMENSIONS IN MM									
			a	b	c	d	e	f	g	h	i	k
IMB/1-3 IM/1-3 IO/1-3	1000 2000 3000	9,5	395	327	234	45	34	48	25	86	33	29
IQ/1-5	5000	17,5	413	329	230	45	42	45	30	122	40	35
IS/1-5	10000	29,5	495	385	260	60	55	65	45	149	56	40
IG/1-5	25000	81	675	505	300	102	85	103	70	228	81	64
IE/1-5	50000	129	831	631	387	123	100	121	95	234	115	74

The pull rod movement at full load is approximately 10 mm.



QUALITY AND SERVICE TAKEN SERIOUSLY

GIGAsense AB • STATIONSVÄGEN 16 • SE-18450 ÅKERSBERGA • SWEDEN
PHONE: +46 (0)8 540 839 00 • E-MAIL: INFO@GIGAsense.SE
www.gigasense.se

