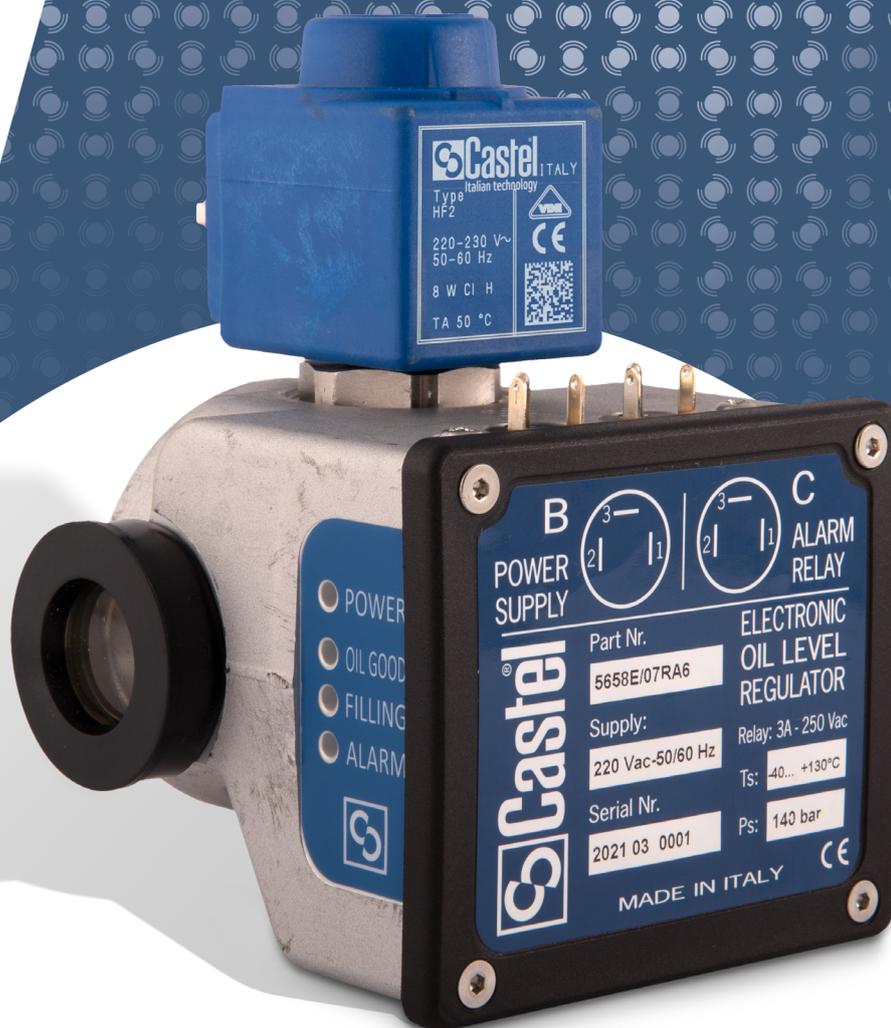


ELECTRONIC OIL LEVEL REGULATORS SERIES 56



CASTEL: LEAPING INTO TECHNOLOGY

We support the growth of our customers with reliable, durable, quality and technologically advanced products. With our electronic oil level regulators, adapters and range of orifices, you'll be able to select the products you require for every brand of compressor and operating pressure required by the system.

OIL LEVEL REGULATORS ALSO FOR CO₂

GO GREEN

R744 • NATURAL REFRIGERANT

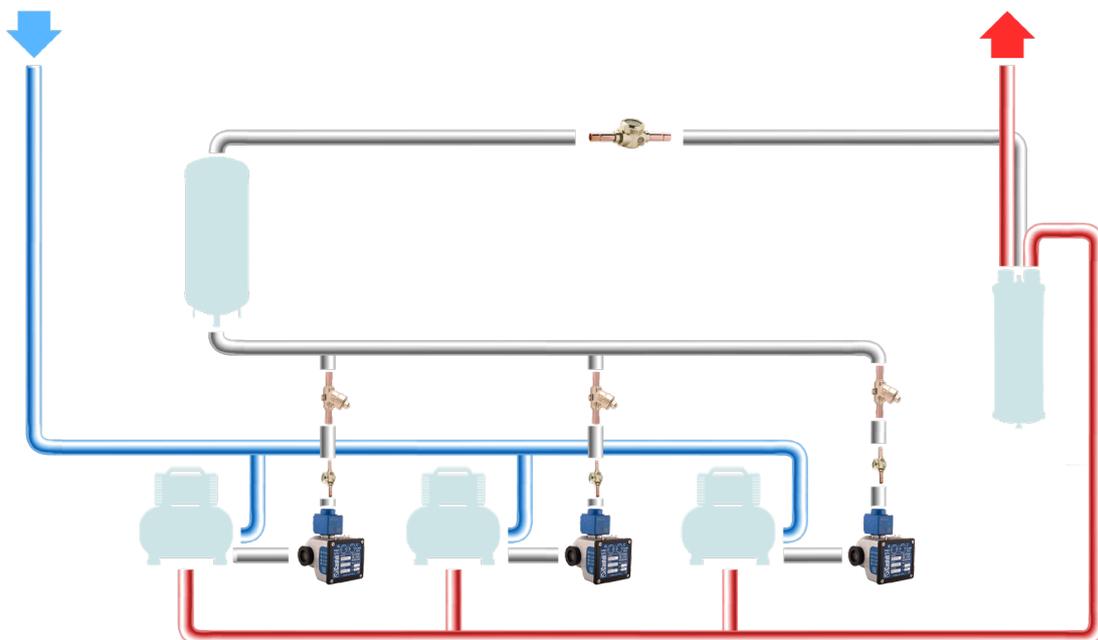
POLYHEDRA

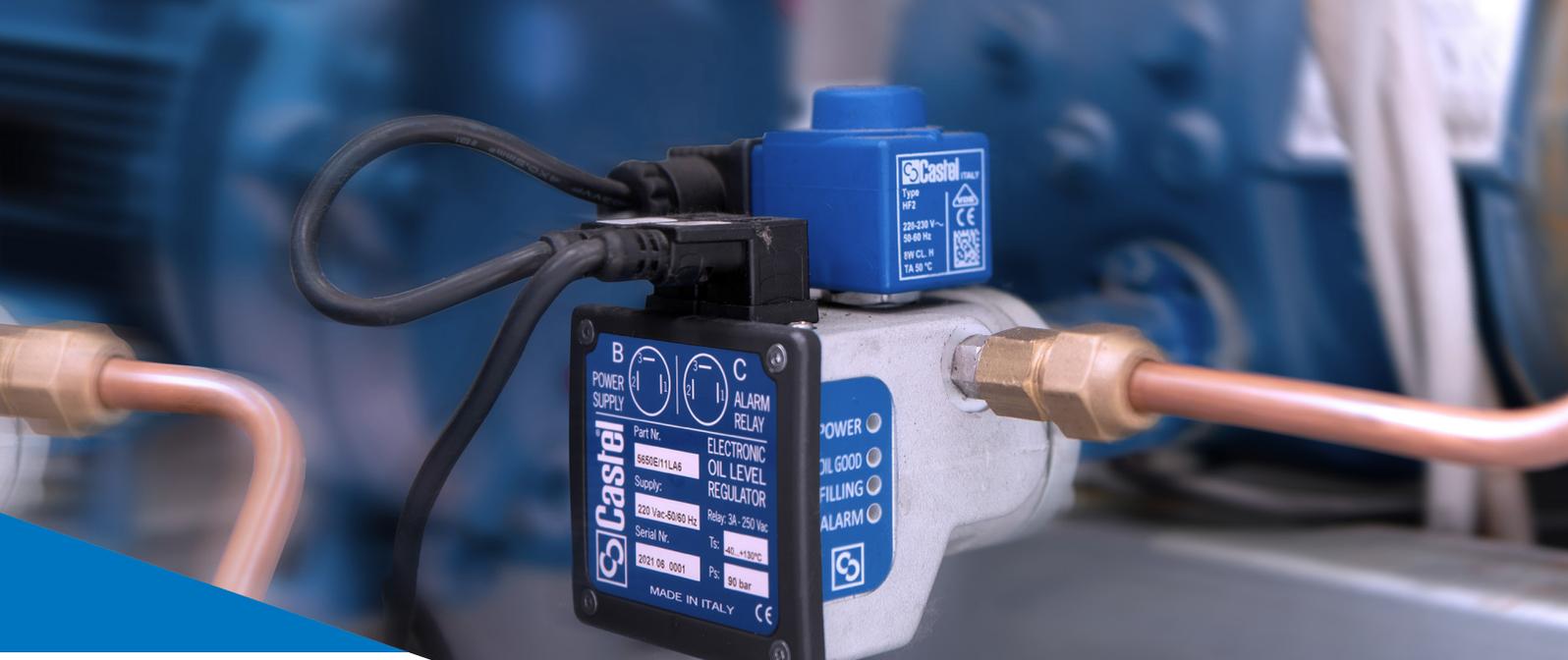
The families of Castel electronic oil level regulators have been designed to be installed on both industrial and commercial refrigeration systems, and also on air conditioning systems.

These components are designed to work effectively with all refrigerant fluids, whether they are HFCs, HFOs, hydrocarbons, R744, or mixtures of them.

Castel oil level regulators ensure precise monitoring and controlling of the oil level inside the crankcase of any compressor, be they reciprocating compressors or scroll compressors, maintaining the correct supply of oil even in conditions of high-pressure difference.

The particular oil level opto-detection system, and the sophisticated control logic, make the use of the regulator very easy and responsive in all installation conditions, both on new systems and as a replacement for existing systems.

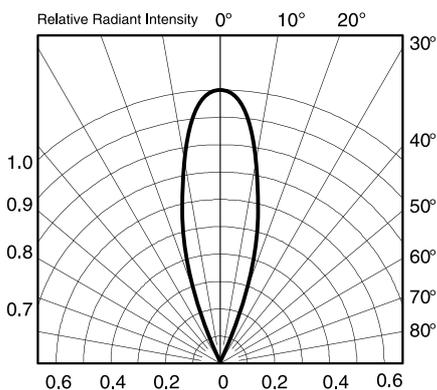
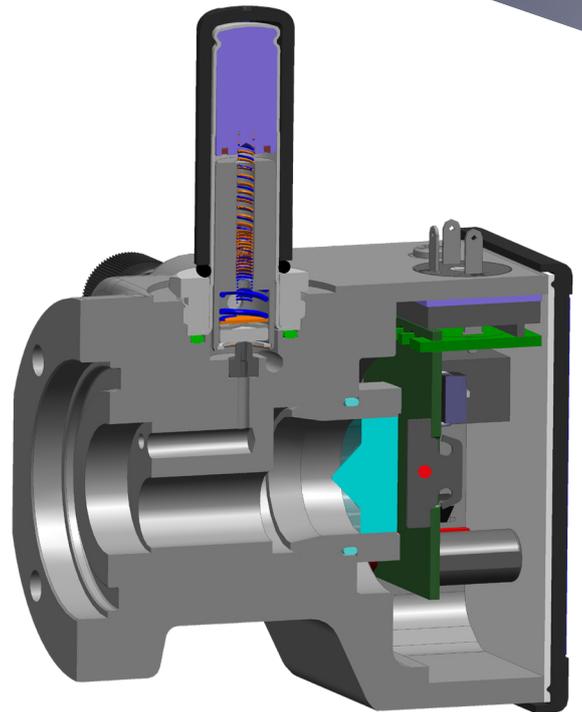




OUR IDEAS FOR THE RELIABLE PRODUCT

The oil regulators work with the synergy of good mechanical characteristics, and clever optical solutions

- NO MECHANICAL MOVING PARTS
- 3 DIFFERENT CHAMBERS TO AVOID FOAM
- LARGE SIGHT GLASS
- STATUS LED'S ON BOTH SIDES
- PARTICULAR INTERNAL MACHINING TO PROPERLY MANAGE THE INJECTION OF OIL



- SPHERICAL SHAPED EMITTER LENS
- POLARIZED AND CONCENTRATED WAVELENGTH
- DEDICATED LOGIC ELECTRONIC CONTROL BOARD

NOT AFFECTED BY ANY OIL CONDITION

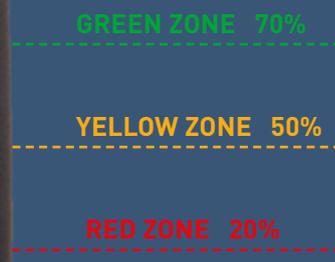
Castel has studied these regulators to provide a simple, robust and reliable solution with any oil condition.

- ACIDITY VALUE
- PRESENCE OF DIRT
- HUMIDITY OF THE OIL
- NO MAINTENANCE REQUIRED ON SIGHT GLASS
- EASY REPLACEMENT OF CONTROL BOARD



LED BLINKING LOGIC OF 5650 SERIES

The oil level is managed by the controller. By running the number of "refill" & "pause" cycles, it is able to maintain the oil at the desired level, or eventually to send an alarm signal to the dedicated electrical contact.

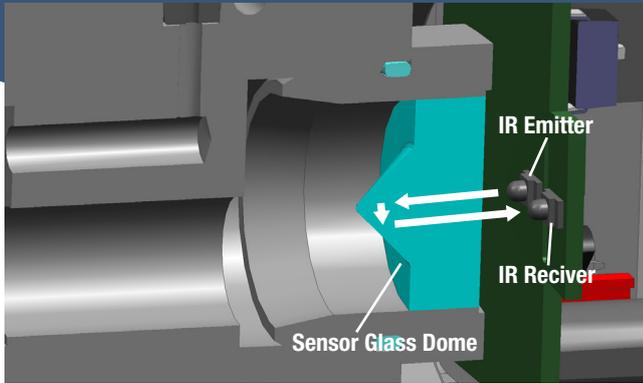


LEDS	STATUS	FUNCTION	STATUS
Green	Oil correct	-	Paused
Flashing Green	Oil med	No filling cycle (solenoid closed)	Paused
Yellow	Oil low	Filling cycle (solenoid open)	Refilling
Flashing Yellow	-	Filling cycle (solenoid closed)	Paused
Red	Oil too low	Filling cycle (solenoid open)	Refilling, Alarm

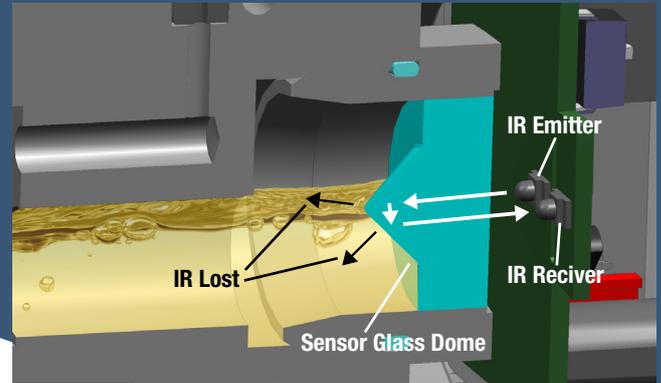
IR DISPERSION

The electronic oil level regulators work «by measuring» the oil level through optical sensors. The principle of optical detection of the oil level is based on the fact that a light signal emitted on to a glass returns a different refraction depending on whether the glass is immersed in vapour rather than in a liquid.

In the absence of oil the emitter signal is **ALL** absorbed by the receiver



In the case of presence of oil, the signal of the emitter is **only PARTIALLY** absorbed by the receiver



When the oil level remains below the target value, the oil injection cycle is activated and the LED "GOOD OIL" flashes.

If for a time equal to 10 seconds the level remains below the target value, the oil injection cycle is activated.

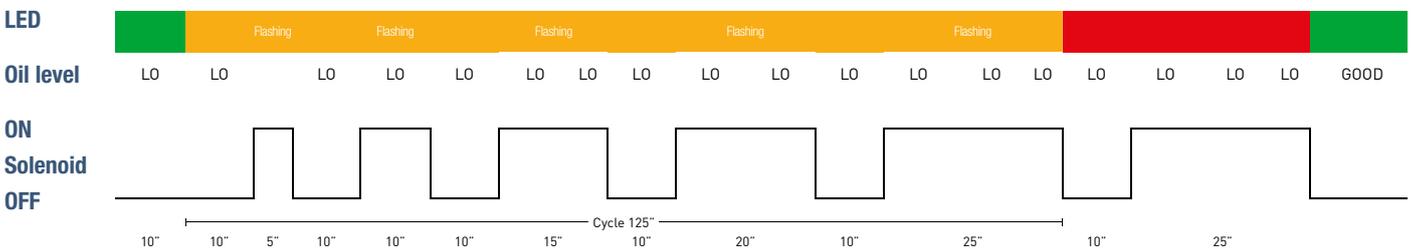
Each oil injection cycle is made up of the ON phase (opening solenoid) and the OFF phase (Closing Solenoid). The ON phase is incremental and depends on the number of cycles of the counter value ($T_{on} = 5 \times \text{counter}$). The OFF phase is rather constant (10 seconds).

In Phase ON the "FILLING" LED is not blinking, while in the OFF phase the LED "FILLING" flashes.

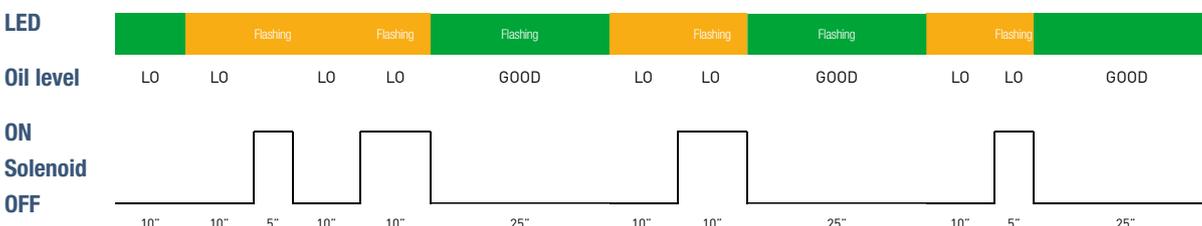
At the end of each cycle, the controller returns to acquire. At the end of the OFF phase if the level is satisfactory, it indicates on the LED "OIL GOOD", otherwise the next cycle begins, and the counter is incremented by 1.

When the cycle counter reaches a value of 5, then the alarm is activated, but the oil injection is maintained, with the last settings, and precisely $\Rightarrow T_{on} = 5 \times 5 = 25$ seconds and $T_{off} = 10$ seconds.

Example 1



Example 2





Drawing	Part number	Connections			Version	Voltage	Frequency	Degree of protection	Cables kit	PS [bar]	TS [°C]		Package pcs																												
		Compressor crankcase adapters (1)	Oil level inspection	Oil inlet							Min	Max																													
				Sae Flare																																					
	NEW 5650E/11RA2	5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X16 5690E/X01	1 sight glass	3/8"	Right	24 AC	50/60	IP 65	9901/X26	90	-30	+130	1																												
	NEW 5650E/11RA6					220 AC	50/60																																		
	NEW 5650E/11LA2					5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X16 5690E/X01	1 sight glass							3/8"	Left	24 AC	50/60	IP 65	9901/X26	90	-30	+130	1																		
	NEW 5650E/11LA6															220 AC	50/60																								
	NEW 5658E/07RA2				5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X16 5690E/X01										1 sight glass	3/8"	Right							24 AC	50/60	IP 65	9901/X26	140	-30	+130	1										
	NEW 5658E/07RA6																							220 AC	50/60																
	NEW 5658E/07LA2																							5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X16 5690E/X01	1 sight glass							3/8"	Left	24 AC	50/60	IP 65	9901/X26	140	-30	+130	1
	NEW 5658E/07LA6																																	220 AC	50/60						
	5650/RA2	5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X16	1 sight glass	3/8"				Right	24 AC	50/60	IP 65	9901/X26	50				-30																+130	1							
	5650/RA6								220 AC	50/60																															
	5650/LA2					5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X16	1 sight glass		3/8"	Left				24 AC				50/60	IP 65	9901/X26	50	-30	+130												1						
	5650/LA6													220 AC				50/60																							

(1) To be ordered separately

LOOKING FOR COMPRESSOR ADAPTORS?



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Castel



ISO 14001

Castel has always been aware of environmental sustainability issues and gives its contribution to a cleaner environment, supplying the refrigeration and air conditioning industry with state-of-the-art and environment-friendly technology. With its commitment and steady research in its laboratories, Castel has developed a whole range of products using natural refrigerants, which reduce emissions to the minimum. The large range of products belonging to the Castel "GoGreen" line has been developed to be used in CO₂ (R744) filled systems.

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