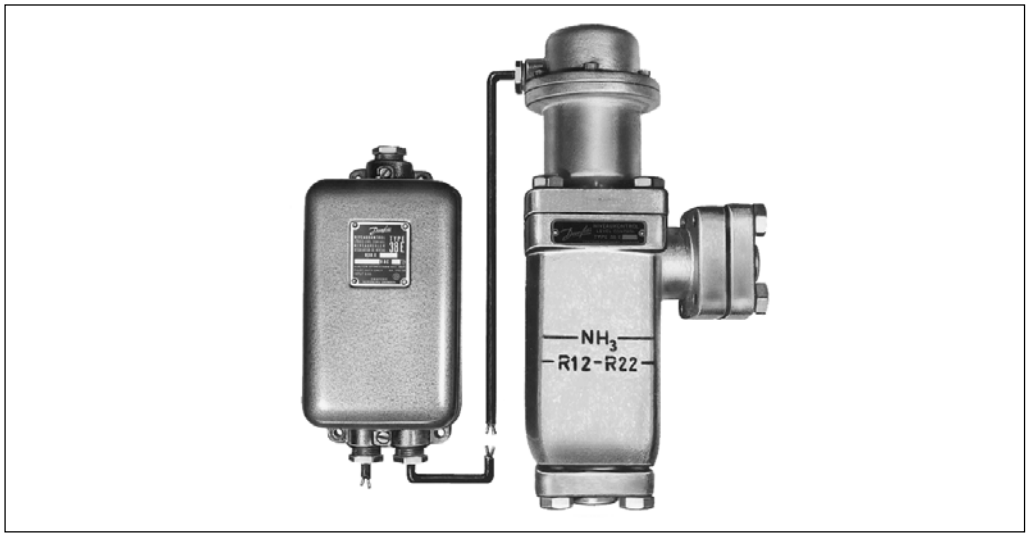
Data sheet

Electronic liquid level regulator type 38E

Introduction



Liquid level regulator type 38E is used to regulate the liquid level in, for example:
- flooded evaporators
- low pressure pump tanks in pump recirculation systems
- pump tanks in "gas pump systems"
- intermediate coolers in two-stage refrigeration plant
- condensers

The 38E is recommendable as safety detection of high or low liquid level.

The SPDT switch system can be used for connection to external equipment for e.g. alarm or indication.

Materials

Gaskets are non-asbestos.

Technical data

Refrigerants
Applicable for the refrigerants R 717 (ammonia NH_3), HFC, HCFC (e.g.R 22, R 134a, R 404A) and other

Differential
Adjustable between 10 and 40 mm

Media temperature range
–45 → +55°C

Max. permissible ambient temperature
for amplifier: 55°C

Max. working pressure
for float housing: PB = 28 bar

Max. test pressure
for float housing: p' = 42 bar

Enclosure
according to IEC 529
for float housing: IP 67
for amplifier housing: IP 54

Approvals
DSRK, NEMKO

Screwed cable entry
for float housing: one Pg 11 entry
for amplifier housing: three Pg 16 entries

Voltage supply
Depending on type of amplifier, 38E amplifier or EKA 38E, different voltage can be connected.

38E amplifier
220/380 V, 50 Hz, 6 VA
220/380 V, 60 Hz, 6 VA

EKA 38E
24 V a.c. +25%/-15%, 1 VA

Permissible voltage variation
38E amplifier
+10% → –15%

EKA 38E
+25%/-15%

Function description
The current in the pilot coil is max. 0.02 A. The output voltage from 38E is max. 20V. Earthing one of the coil leads will not affect the operation of the regulator. The length of the pilot coil cable is of no significance to the operation of the regulator.

For converting the 38E signal two amplifiers can be used.

38E amplifier
Used for limit contacts. A volt-free contact can be activated dependent on refrigerant level in 38E. The contacts can break a current of max. 6A, 380 V. See paragraph Design Function.

EKA 38E
EKA 38E is to be used when an analog signal corresponding to liquid level is needed.
EKA 38E is a converter that can receive a signal from a 38E, and subsequently retransmit the signal to liquid level controller e.g EKA 47 or AKC 24A. See RI.2E.B1.53

Material
38E is supplied in GGG 40.3 material.

Ordering

Amplifier

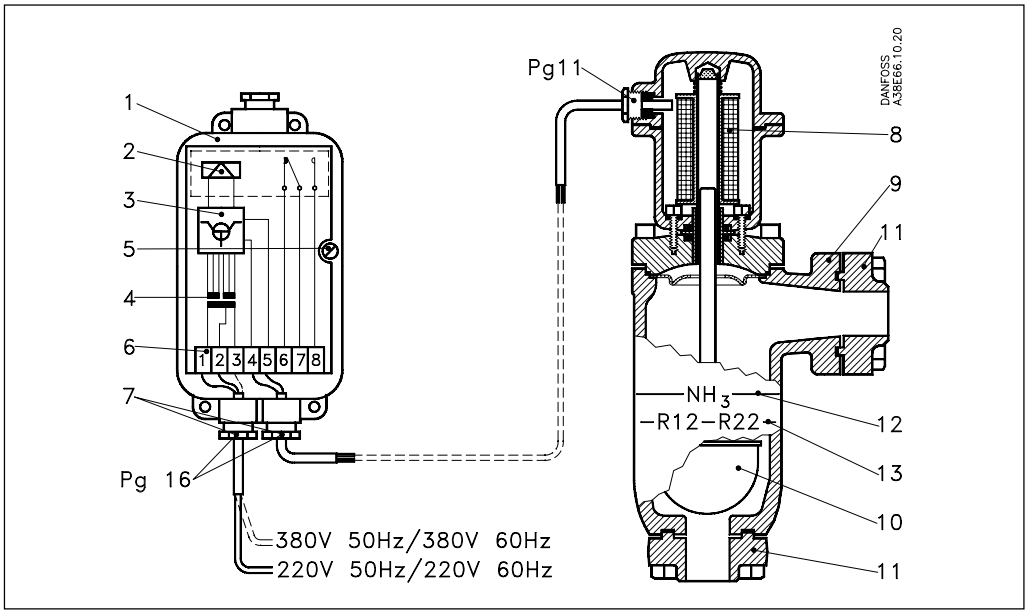
Function in minimum setting	Version	Code no.	
		50 Hz	60 Hz
Contacts 6-7 make	I (220/380 V)	**038E0220**	**038E0221**
Contacts 6-7 break	II (220/380 V)	**038E0230**	**038E0231**

Float housing

Connection	Code no.
1 in. weld flanges	**038E0011**

Design
Function

38E and 38E amplifier



1. Waterproof amplifier housing
2. Relay
3. Amplifier
4. Mains transformer
5. Earth terminal
6. Terminals
7. Screwed cable entry
8. Pilot coil
9. Float housing
10. Float with armature
11. Connecting flanges
12. Mean level for R 717 (NH_3)
13. Mean level for R 12 and R 22

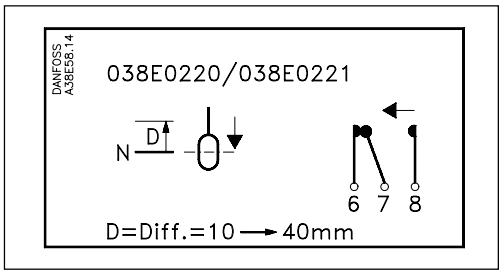
The liquid level regulator consists of two separate parts:

1. Float housing
of gas-tight cast iron with built-in ball float with armature surrounded by a pilot coil. Float movement causes the armature to move in and out of the pilot coil.

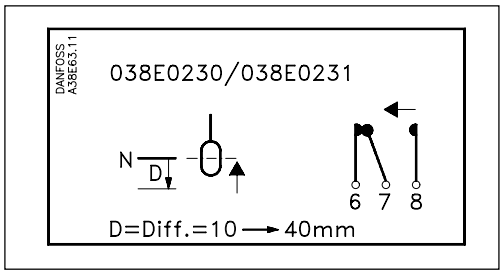
2. Amplifier
with mains transformer. The amplifier is designed for 220/380 V, 50 Hz or 220/380 V, 60 Hz.

When the float (10) is raised or lowered by the liquid, the low voltage current through the pilot coil (8) is changed.

This change is amplified by the amplifier (3) so that the contact across terminals (6-7) or (7-8) makes or breaks.

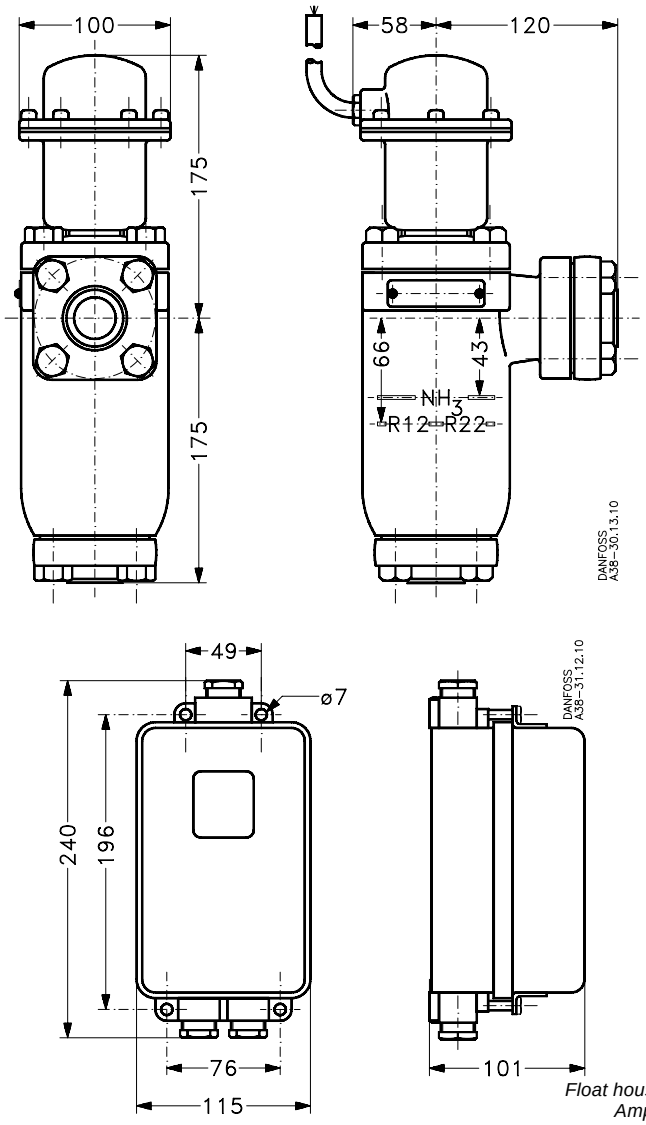


38E0220 / 38E0221
Contacts (6-7) make when the level falls to the set value N and break again when the level rises by the differential value D.



38E0230 / 38E0231
Contacts (6-7) make when the level rises to the set value N and break again when the level falls by the differential value D.

Dimensions and weights



Weight
Float housing: approx. 11 kg
Amplifier: approx. 2 kg

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