



Anti-Overfill Valve

USER MANUAL

V2.0 SEPTEMBER 2016

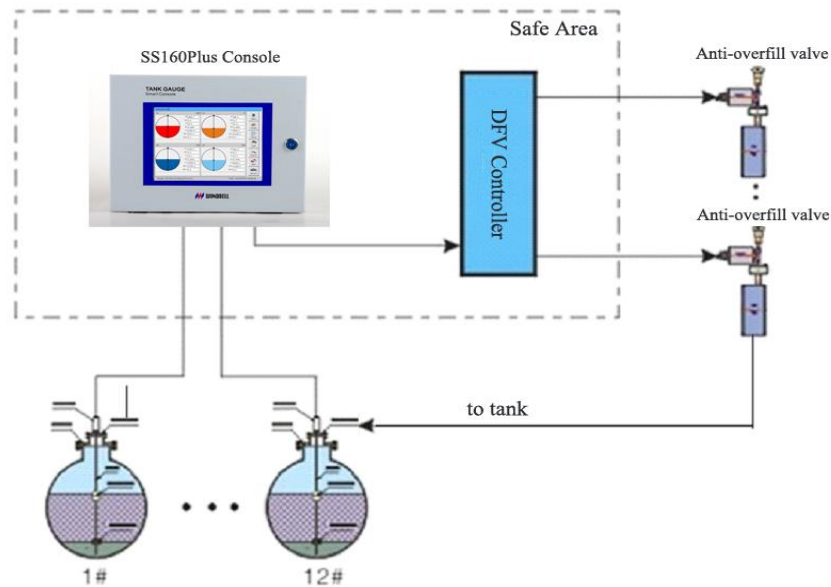
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Anti-Overfill Valve User Manual

The unloading oil spill prevention system is designed by Windbell. The system can automatically monitor the oil height in tank during unloading, when oil level reach to a high oil level (eg: 90%), can automatically give a warning, when the oil level reach to an extra high oil level (eg: 95%), the electromagnetic valve will be activated and automatically cut off oil discharge pipe, to prevent against oil overfill.

1. Introduction



The system consists of the following several parts:

a. SP300 magnetostrictive probe

Installed in the tank, used for measuring oil tank level and temperature in real time.

b. SS160Plus smart console

Used for processing and displaying tank information, setting alarm volume, sending commands to external devices.

c. DFV controller

One end connect to the SS160Plus console, receive commands from SS160Plus; another end connect to anti-overfill valve.

d. Electromagnetic anti-overfill valve

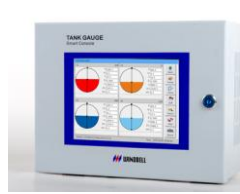
Installed on discharge pipe. Stop oil loading immediately as soon as received demands from DFV Controller.



Anti-overfill valve



DFV Controller

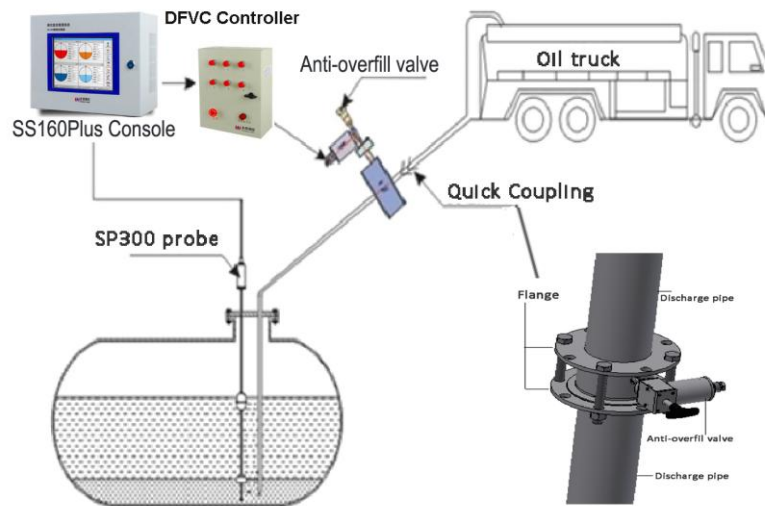


SS160Plus Console



SP300 Probe

2. Working Principle



SS160Plus console read the tank level information from probe, and compare to alarm value preset in console. As soon as the oil level reach to high alarm value, Console will alarm for attention; when oil level reach to the oil high high value, SS160Plus console will send command to DFV controller, to trigger electromagnetic anti-overfill valve closed, so to stop oil unloading.

Alarm value of oil high and oil high high can be preset according to demands, usually oil high alarm value is 90% of tank diameter, and oil high high alarm value is 95% of tank diameter.

3. Technical Parameter

Technical parameters of controller DFVC

Power	AC220V±10%
Communication port	RS485
Baud Rate	2400bit/s
Capacity of relay	220V/10A
Monitor up to	6 valves
Enclosure dimension	38 (L) X 28 (H) X 22 (W) cm (15 x 11 x 8.7 Inches)

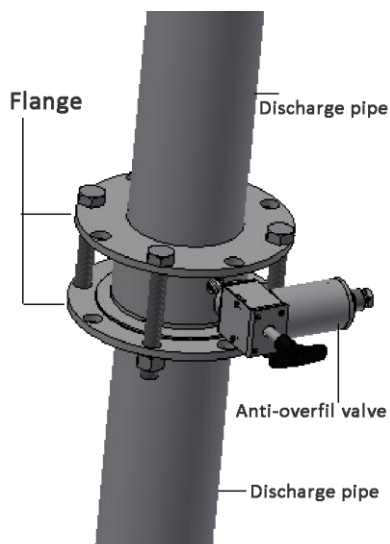
Technical parameters of Electromagnetic anti-overfill valve

Parameters \ Model	DFV100-65	DFV100-80
Rated voltage	220V DC	220V DC
Rated current	1.5A	1.5A
Respond speed	1~2S	1~2S
Explosion proof mark	Ex d IIA T4	Ex d IIA T4
Protection grade	IP66	IP66
Enclosure dimension	22(L) X 12.5(H) X 7.5(W)cm 8.7 x 5 x 3 Inches	22(L) X 14(H) X 8.6(W)cm 8.7 x 5.5 x 3.4 Inches

4. Installation

4.1. Installation of anti-overfill valve

Electromagnetic anti-overfill valve is installed in the discharge pipe, with clamp mounting type, no matter which angle the pipe is rendering, it is convenient to construct. As shown in the below figure.

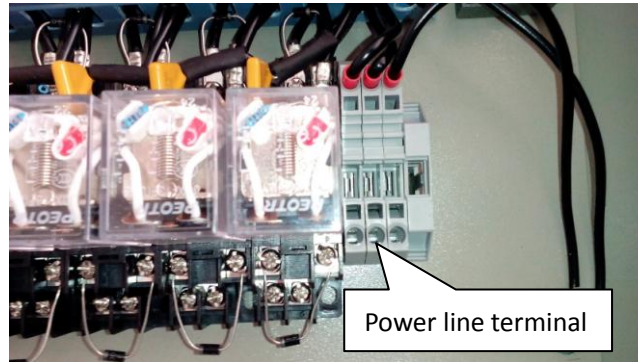


4.2. Wiring

Wiring of power line, communication line and anti-overfill valve line.

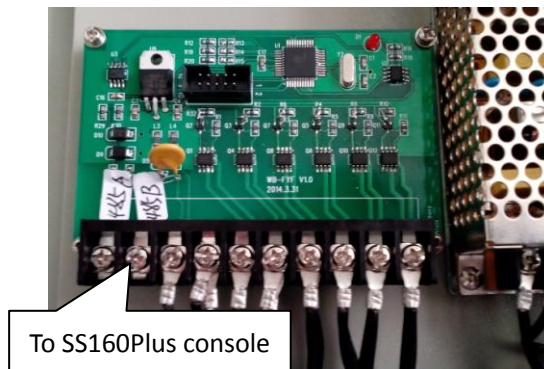
Power line

DFV controller adopts 220VAC power supply, here below is the wiring terminal of power line, from left to right in turn is live wire, null line and grounding line.



Communication line

Communication interface of DFV Controller is RS485, the left is 485 A, the right is 485B, connect to the corresponding interface of SS160Plus console.



Anti-overfill valve line

Anti-overfill valve line connects to output relay port directly (on both ends of the diode, the location of the relay base with 3 and 4), as shown in the figure below. The diode in the graph cannot be removed.



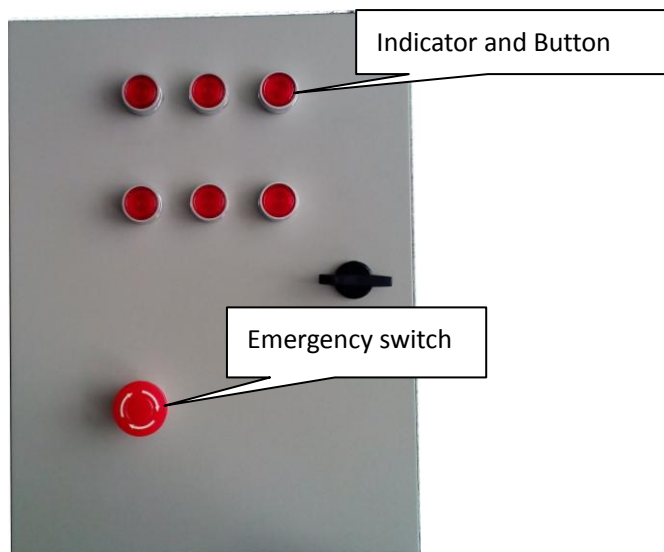
5. Operation

Two ways to operate anti-overfill valve, automatically or manually:

- a. SS160Plus console detects the oil level reach to the oil high high level, will automatically send commands to DFV controller, then anti-overfill valve will close.
- b. Press control button on DFV controller, anti-overfill valve will close within 1 second.

One DFV controller can control 6 anti-overfill valves, in the first line, from left to right in turns, they are indicators of anti-overfill valve No. 1 to 3, same way in second line they are indicator of anti-overfill valve No. 4 to 6.

Emergency switch is used to manually cut off power supply in case of failure, press can cut off power supply, and clockwise rotation can connect power supply.



6. Contact Us

Zhengzhou Windbell Measurement and Control Technology Co., Ltd

Tel: 86-371-6030 1609

Fax: 86-371-6030 1612

E-mail: emily@windbelltek.com

sales@windbelltek.com

Address: No.9, Changchun Road, High-Tech development Zone, Zhengzhou city, Henan Province,
China

Zip code: 450001

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ZHENGZHOU WINDBELL MEASUREMENT AND CONTROL TECHNOLOGY CO., LTD

No.9 Changchun Road, High-tech Development Zone, Zhengzhou city,
Henan Province, P. R. China
P.C.:450001

www.windbellatg.com
www.windbellgauge.com

E-mail: sales@windbelltek.com

Office Tel: +86 371 6030 1609

Office Fax: +86 371 6030 1612



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