

Application case of using **EcoDriveCN** variable frequency drive for submersible pump (underwater pump)

Field application:

10KW E5-H variable frequency drive from **V&T Technologies Co., Ltd.**

Submersible pump

Potentiometer remote transmission pressure gauge



Pressure signal is supplied by one potentiometer remote transmission pressure gauge.

The parameters of potentiometer remote transmission pressure gauge:

Initial resistance: 2 ~ 30 Ohm

Full scale: 310 ~ 400 Ohm

Total range: 1Mpa

Requirement:

Pipeline pressure in the daytime is 0.35 MPa ~ 0.4 MPa

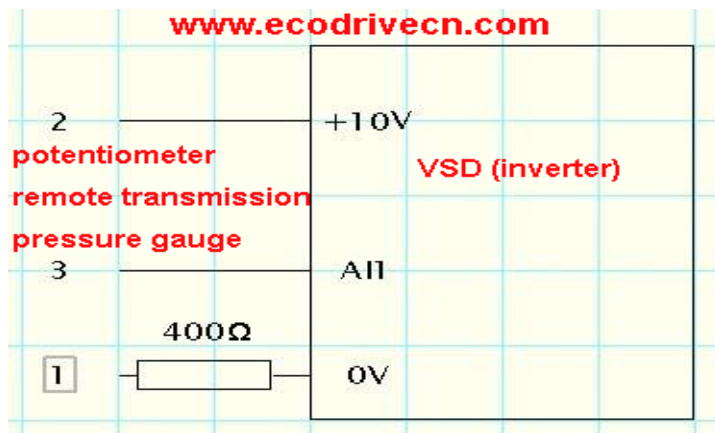
In the night, when no water is needed, it stops itself.

Manufacturer of vector control frequency inverter (variable frequency drive, variable speed drive, AC drive, VSD, VFD), motor soft starter...

Open the junction box on the right side of that potentiometer remote transmission pressure gauge, there are 3 wiring terminals (labeled 2, 3, 1). Connect the three terminals to the terminals (+10V, AI1, GND) of the control board of variable speed drive.

Series connect one resistance (400 Ω, 2w) to the terminal (0V) on the control board of VSD. Because the power supply of that potentiometer remote transmission pressure gauge can just be less than 6 volts, but the power supply of the VSD is 10 volts, a divider resistor is series connected in the circuit.

Below is the wiring diagram of EcoDriveCN PID closed loop control variable frequency drive (AC drive, VSD, VFD) to the potentiometer remote transmission pressure gauge:



Some parameters setting of EcoDriveCN VSD:

P0.03 = 1 (closed loop control with feedback of analog signal, PID process closed loop control)

P1.05 = 1 (the feedback of analog signal is offered by the terminal AI1. 0 ~ 10V is equivalent to 0 ~ H0.01.

If the pressure feedback of the pipe is offered by the terminal AI2, please set P1.05 = 2. And 0 ~ 20mA is equivalent to 0 ~ H0.01.

Remark: the analog signal is controlled by the jumper on the control board. You can choose 0 ~ 10V or 0 ~ 20mA as you wish.

P9.01 ~ P9.04	For auto-tuning: according to the exact motor parameters
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H0.00= 1

H0.01 = 1.00 (default, no need to change)

H0.04 = 1 (the terminal AI1 is used. If the terminal AI2 is used instead of AI1, please set H0.04 = 2.)

H0.02 = pressure upper limit

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H0.03 = pressure lower limit

H0.31 = wake-up pressure setting (0 ~ 10.00V)

H0.32 = sleep pressure setting (0 ~ 10.00V)

Applications of EcoDriveCN E5-H inverters:

conveyor belt, [sewage disposal \(water water treatment\) in municipal engineering](#), [water supply in civil engineering](#), water boosting for high rise buildings, [cooling water circulation pumps](#), fire fighting system, air compressor, [extruder machines](#), [plastic extrusion machinery](#), fan and pump, blower, [exhaust fan](#), [ventilator](#), sprinkler and irrigation system, plastic injection molding machine, [central air conditioning](#), sugar industry ([separation of sugar](#), [retrofitting of sugar crushing machine](#)), food and beverage industry, [mine exhaust fan](#), [induced draft \(ID\) fan](#), [dusting fan in iron and steel works](#), metals industry, mining industry, paper and forest products industry, petroleum and chemical industry, wood processing, [HVAC \(heating, ventilating and air conditioning\)](#), etc.

[V&T Technologies Co., Ltd.](#)

Add: XinFeng Building, YangGuang Industrial Area, XiLi Town, NanShan District, ShenZhen, 518055 China

Website: <http://www.EcoDriveCN.com>

Email: Richard@EcoDriveCN.com

Tel: +86-177-04027519

Whatsapp: +86-177-04027519

Skype & Line ID: EcoDriveCN

Simple introduction of company:

V&T Technologies Co., Ltd. is manufacturing & supplying [variable speed drive \(frequency inverter\)](#), [servo drive](#), [motor soft starter](#), [inverter](#), and [other power electronics](#).

The variable speed drives (frequency inverters) are used for [motor control](#), [motion control](#), [energy saving and process control](#): [plastic injection moulding machine](#), machine tools, [air compressor](#), [constant pressure water supply](#), civil engineering, conveyor belt, [sewage disposal \(wastewater treatment\)](#), [extruder \(extrusion machine\)](#), fan and pump, HVAC, food and beverage industry, oil, [mining industry](#), **sugar industry**, industrial washing machine, etc.

[As the leading and professional factory with optimum drives, we are competing with Siemens, ABB, Danfoss in the world.](#)

From 200VAC to 1140VAC, power is from 0.4KW to more than 3MW (0.5hp to more than 4000hp).

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