

# SPIDER

## Pump control

A universal control, with many applications. SPIDER pump control can control several pumps with alternating operation, with only one level switch connected. On the same level switch, a high level or defective pump function can also be alerted.

SPIDER is a Danish developed and produced product, which complies with all specifications for electronics components that are placed in harsh environments.



SPIDER pump control can of course also be connected to a standard pressure transmitter or other level meter with 4-20mA signal with optional measuring range. With analog level signal connected, SPIDER can perform a valid pump flow calculation that has not been seen before, and based on this function, the need for pump service can be predicted.

SPIDER pump control comes as standard with a built-in modem with multi-protocol, which automatically detects whether Modbus or Comli is communicated via the SCADA-system. All SPIDER registers are of the same data type, so only one telegram needs to be transmitted to get updated data. The SPIDER GPRS modem includes the "FAST RESPONS" function and is designed to support future IoT requirements. SPIDER can be delivered with both 2G and 4G modems.

SPIDER has a built-in powerbank, so no need for external battery backup in case of power failure. SPIDER is not EX-classified and must therefore not be installed in EX areas.

### Features:

- Advanced 1- and 2-pump control, where faulty pump is automatically taken out of operation.
- Validated flow calculation, where the pumps' "true" capacity is calculated, also for parallel operation
- Inlet flow calculation showing the inlet profile to the pump station
- Pump service indication, where SPIDER tells when the pump is to be serviced due to reduced capacity
- Built-in power bank, for alarm in case of voltage failure - no external battery.

### Applications

• Control of pumping stations
• Pump control at treatment plants
• Groundwater lowering
• Remote reading of data via ModBus
• Control of raw-water pumps

### Products

Item number	Description
1772-2100164	SPIDER Universal ON / OFF controller with 2G modem.
1772-2104164	SPIDER Universal ON/OFF controller with 4G modem.
1717-0B24-C884G	Quad band antenne (2G,3G,4G) w angle connector

# Datasheet

## Technical specifications

Dimensions	W=87mm x H=90mm x D=62mm
Weight	250g
Wire connection	0.5 – 2,5 mm <sup>2</sup>
Vibration (sinusoidal)	10-500Hz, 1G
Free fall drop	30 cm
Enclosure class	IP20
Power supply	230V AC +10% / -20%
Frequency	50/60Hz
Input power consumption	0,004 to 0,06A
Starting current	<10A
Consumption	Max. 10W
Fuse	≤250mA
Certificates	CE

## Environment

Humidity	Humidity 10% – 95% non-condensing air
Operating temperature	-20°C to +50°C
Storage temperature	-20°C to +60°C
Functional altitude	Max. 2000m above sea level
Start-up time total	20-120 sec. (depending on GSM network)

## Built-in power supply

Output voltage	24V DC
Output current	Max. 100mA
Tolerance	+/- 20%

## Analog inputs

Number of analog mA inputs	1
Electrically insulated	No
Measuring range	0/4–20mA
Input impedance	Approx.100 Ω
Measurement accuracy	Better than 0,5% of FS
Signal range	0-24mA / 0–30V DC
Cable/signal length	Max. 100m

## Digital inputs / AI 0-10V

Number of digital inputs	6
Electrically insulated	No
Digital signal	Low < 5V / < 1mA High > 12V / > 4mA
Analog signal measuring range	0–10V DC
Analog signal impedance	Ca. 20KΩ
Measurement accuracy	Better than 1% of FS
Signal range (min/max.)	0–30V DC
Cable/signal length	Max. 100m

## Digital outputs

Number of digital outputs	4
Electrically insulated	Yes
Insulation voltage	4 KV
Relay type	Relay outputs
Cable/signal length	Max. 100m
<i>Relay NO #11 og #21</i>	
Constant load	max. 10 A @ 230Vac - AC1 max. 500 W @ 230Vac - AC3 max. 1 A @ 48 VDC max. 10 A @ 24 VDC
Minimum current	5 mA @ 10 V
Maximum start-up current	18A
Switch speed	Max. 1 Hz
<i>Relay NO #31 og #41</i>	
Constant load	max. 2 A @ 230Vac - AC1 max. 100 W @ 230Vac - AC3 max. 1 A @ 30
Minimum current	5 mA @ 10 V
Maximum start-up current	6A or 10A @ 20 ms.
Switch speed	Max. 10 Hz