Capacitive detectors

CSCV3 Capacitive overflow detector
Contact output & Modbus

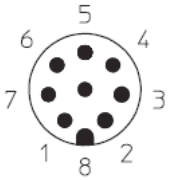
Output signal	**3x open-drain contacts** **1x power-switch** **Modbus interface**
Configurable	Yes (via Modbus)
Cable	10m
Connector	M12 – 8 poles
Dimensions	90x90x32mm
Housing sealing	IP68
Operating Temperature	-40...+80°C
Power supply : Internal or external	Battery : 3,6V (8 years life span minimum) 3,6...16V
Compatibility with V3 devices	LNU06V3/LNU10V3/LOG04V3/LOG10V3
Weight CSCV3-110	790g

Features

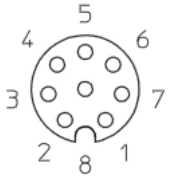
Pin Nb	1	2	3	4	5	6	7	8
Colour	White	Brown	Green	Yellow	Grey	Pink	Blue	Red
Signal	V+	GND	SW	MB-H	MB-L	OD1	OD2	OD3

1 : Optional external power supply — +3,6...16 V
2 : Ground signal — GND
3 : Power-Switch Output (16V 1A) — Disabled by default
4 : Modbus RTU RS485 High
5 : Modbus RTU RS485 Low
6 : Open-drain output (30V 2A) — Overflow status NO by default
7 : Open-drain output (30V 2A) — Overflow status NC by default
8 : Open-drain output (30V 2A) — Pulse mode every 60s by default

Male



Female



Application examples :
PLC connection / Water sampler control / Any relay control / Pumps triggering / Overflow periods / Capacitive value

Possible output options (selectable for each output) :
- NO or NC mode selectable for each output
- Overflow status
- Pulse every elapsed time in overflow
- Overflow status with minimal pulse length
- Activation after an elapsed time in overflow
- Always activated or deactivated

MODBUS REGISTERS

Protocole Modbus RS485 / Mode RTU / 9600 Baud by default / 8 data bits / None Parity / 1 stop bit
CSC Slave Id : 1 by default
CSC Revision : 7 (03.06.2014)

	Register Number	Name	Data Type	Units of Measure	Values Range		Default Value	Read or Write	Description
DATA	8192	Reboot	integer	/	0 to 65535		/	R	Reboots counter
	8193	**PowerSupply**	integer	mV	0 to 16000		/	R	Power supply
	8194	**Temperature**	integer	°C	-40°C to 80°C		/	R	Temperature
	8195	CapExt	integer	/	0 to 1023		/	R	Capacitive value inside the detector
	8196	CapInt	integer	/	0 to 1023		/	R	Capacitive value outside the detector (in detection zone)
	8197	CapDiff	integer	%CapDiffRange*	0 to 100		/	R	Difference (CapInt - CapExt) reduced to CapDiffRange percentage
	8198	**CapDiffAvg**	integer	%CapDiffRange	0 to 100		/	R	**Capacitive index** : AvgSize-point average of CapDiff
	8199	**OvStatus**	integer	/	0 or 1		/	R	**Overflow status** : 0 = no overflow, 1 = overflow
	8200	OvCnt	integer	/	0 to 65535		/	R/W	Overflows counter
	8201	PulseCnt	integer	/	0 to 65535		/	R/W	Pulses counter
	8202	PulseCycle	integer	multiple of CapCycle	0 to 65535		/	R	Duration of overflow(s) since the last pulse (when it reaches PulseCycle reg. 4113, a pulse will be generated)
	8203	PulseTempo	integer		0 to 65535		/	R	Countdown of pulse duration (cf reg. 4112)
	8204	OvTempo	integer		0 to 65535		/	R	Countdown of overflow temporisation (cf reg. 4114)
	8205	OvLength	integer		0 to 65535		/	R	Duration of the current overflow
CONFIG	4096	MbSpeed	integer	/	0 to 7		4	R/W	Modbus Baudrate (en bps) **0** : 600 / **1** : 1200 / **2** : 2400 / **3** : 4800 / **4** : 9600 / **5** : 19200 / **6** : 38400 / **7** : 57600
	4097	MbAddr	integer	/	1 to 247		1	R/W	CSC Slave ID on Modbus
	4098	MbTimer	integer	milliseconds	0 or 500 to 60000		1000	R/W	Modbus standby mode after MbTimer of inactivity
	4099	CapCycle	integer	milliseconds	0 to 15000		1000	R/W	Cycle of capacitive measurement
	4100	AvgSize	integer	/	1 to 300		10	R/W	Number of points for averaging CapDiff (result in CapDiffAvg)
	4101	CapDiffMode	3-bits field	/	0 to 7		3 (Auto-Min + Auto-Max)	R/W	0x0001 : Auto-Min / 0x0002 : Auto-Max / 0x0004 : Standby
	4102	CapDiffLimitMin	integer	/	-1023 to 1023		Factory setting	R	Minimal limit for CapDiffRangeMin
	4103	CapDiffLimitMax	integer	/	-1023 to 1023		Factory setting	R	Maximal limit for CapDiffRangeMax
	4104	CapDiffRangeMin	integer	/	-1023 to 1023		/	R/W	Minimal "raw CapDiff"* in the application (bounded by CapDiffRangeMin)
	4105	CapDiffRangeMax	integer	/	-1023 to 1023		/	R/W	Maximal "raw CapDiff" in the application (bounded by CapDiffRangeMax)
	4106	CapDiffTh	integer	%	0 to 100		80	R/W	Overflow triggering threshold (CapDiffAvg > CapDiffTh*CapDiffRange)
	4107	CapDiffHyst	integer	%	0 to 100		5	R/W	Overflow triggering hysteresis
	4108	OutputMode OD1	9-bits field	/	Polarity: 0 or 1	Function: 0 to 6	2 (Pulse / NO)	R/W	Polarity (1 bit): 0 : Normal (NO) / 1 : Reverse (NC)
	4109	OutputMode OD2	9-bits field	/			1 (OV && PG / NO)		
	4110	OutputMode OD3	9-bits field	/			257 (OV && PG / NF)		Function (8 bits): 0 : Reset / 1 : OV && PG / 2 : Pulse / 3 : Tempo / 4 : Length / 5 : OV / 6 : PG
	4111	OutputMode SW	9-bits field	/			257 (OV && PG / NF)		
	4112	PulseWidth	integer	multiple of CapCycle	0 to 65535		1	R/W	Duration of a pulse (for pulse function)
	4113	PulseCycle	integer		0 to 65535		60	R/W	Period between 2 pulses (for pulse function)
	4114	OvTempo	integer		0 to 65535		120	R/W	Overflow temporisation before the output activation (for tempo function)
	4115	OvLength	integer		0 to 65535		3600	R/W	Minimum duration of the output activation (for tempo function)
IDENT	0	SN[0]	hexa	/	/		0x494A	R	Serial Number of detector
	1	SN[1]	hexa	/	/		0x3D4D	R	
	2	SN[2]	hexa	/	/		Factory setting	R	
	3	SN[3]	hexa	/	/		Factory setting	R	
	4	Version[0]	hexa	/	/		Factory setting	R	Software version and revision
	5	Version[1]	hexa	/	/		Factory setting	R	

Note	*CapDiffRange = [CapDiffRangeMin ; CapDiffRangeMax] raw CapDiff = CapInt - CapExt