



DATA SHEET

CS3795



CE

ISOIL
INDUSTRIA



INDICE

OVERALL FEATURES	2
STANDARD FEATURES	2
OPTIONAL FEATURES	2
ACCURACY	2
TECHNICAL DATA	2
OVERALL DIMENSIONS	3
EXPLODED LAYOUT	4
ELECTRICAL CONNECTIONS	5
INPUT/OUTPUTS (CONNECTOR)	5
INPUT/OUTPUTS (CABLE)	5
INPUT/OUTPUTS: SCHEMATICS	6
USER INTERFACE	7
PROGRAMMING FUNCTIONS	8
ACCURACY TABLE	11
HOW TO ORDER	12



■ TECHNICAL DATA

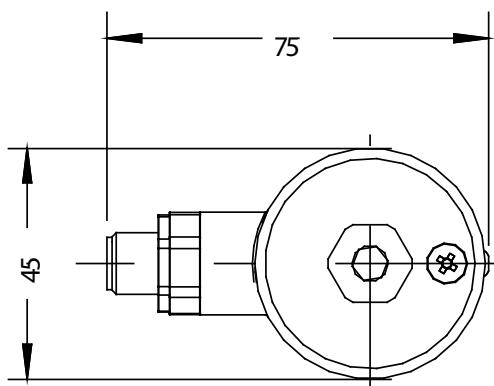
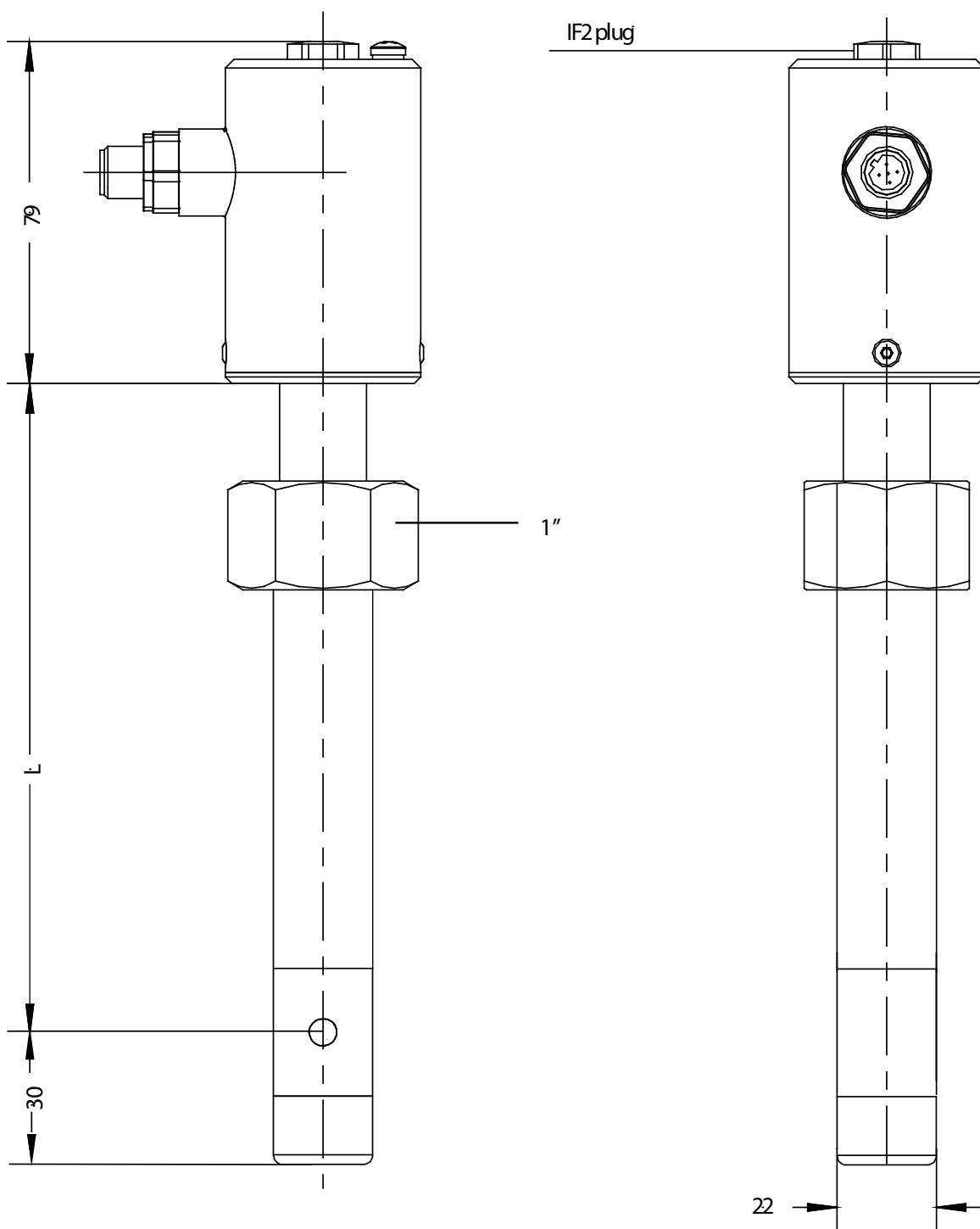
■ OVERALL FEATURES	
Size for pipe line Ø	<input type="checkbox"/> Size 1 Ø ≤ 500mm <input type="checkbox"/> Size 2 Ø ≤ 1000mm <input type="checkbox"/> Size 3 Ø ≤ 2000mm
Minimum conductivity	<input type="checkbox"/> 20 µS/cm
Altitude	<input type="checkbox"/> -200m up to 4000 m
Humidity Range	<input type="checkbox"/> 0÷100% (IP 67)
CE Certification	<input type="checkbox"/> Yes

■ STANDARD FEATURES	
Protection Rate	<input type="checkbox"/> IP 67
Power Supply/Consumption	<input type="checkbox"/> min10 / max30 V --- - 1W
Electrical connections	<input type="checkbox"/> 5 pins connector M12X1 complete with plug/2 m of 5 poles cable ALREADY CONNECTED
Full scale value	<input type="checkbox"/> 0,4...10m/s
Protocols	<input type="checkbox"/> MCP via USB integrate
Output	<input type="checkbox"/> N° 1 channel freely programmable OUTPUT for volume pulses/alarms
Data Storage	<input type="checkbox"/> Eeprom values storing system in case of power failure
Programming Plug In	<input type="checkbox"/> Protected plug for PC connection
Bi-Directional	<input type="checkbox"/> Yes
Body material	<input type="checkbox"/> Stainless steel AISI 316
Nominal pressure	<input type="checkbox"/> 1600 kPa
Process connection	<input type="checkbox"/> 1" Threaded end
Version – protection rating	<input type="checkbox"/> Compact IP67
Connection material	<input type="checkbox"/> Stainless steel AISI 304
Lining material/gasket	<input type="checkbox"/> PEEK/FPM/Electrodes in
Liquid temperature	<input type="checkbox"/> -10°C ÷ 100°C compact version
Electrodes material	<input type="checkbox"/> HC 276

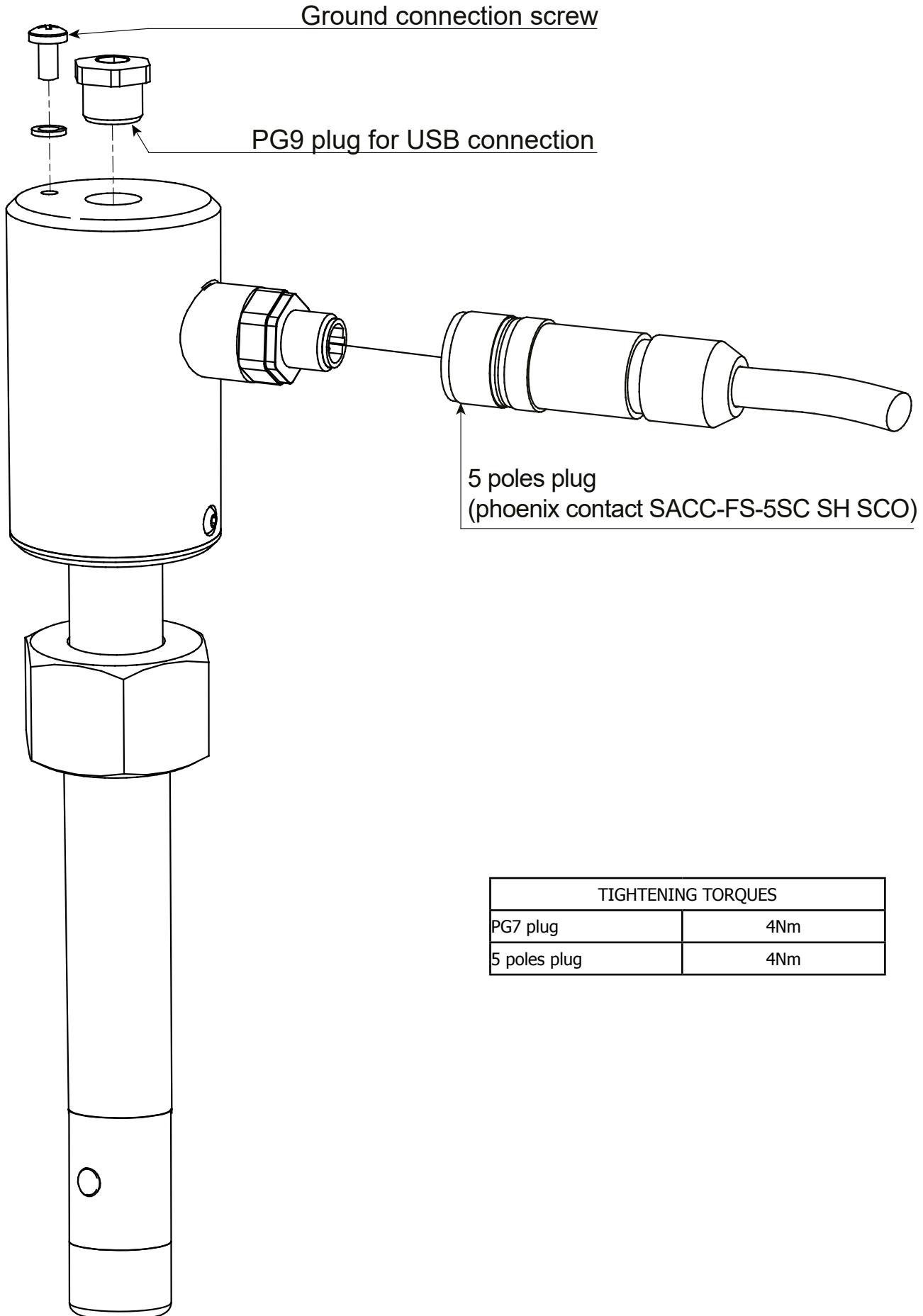
■ OPTIONAL FEATURES	
(CHECK FOR MORE DETAILS 'HOW TO ORDER' ON LAST PAGE)	
Pulses/ Alarm Output	<input type="checkbox"/> N°1 Digital Output
Current Output	<input type="checkbox"/> N°1 , 0/4...20mA – RL=500 Ω
Size for pipe line Ø	<input type="checkbox"/> Other on request
Nominal pressure	<input type="checkbox"/> Others on request
Process connection	<input type="checkbox"/> Others on request
Electrodes material	<input type="checkbox"/> Others on request

■ ACCURACY	
Measurements tolerance (board)	<input type="checkbox"/> Volume = ±0,2% v.l. <input type="checkbox"/> Out 4/20 mA = ± 0,2 % v.l.
Accuracy (whole system)	<input type="checkbox"/> See table below

 **OVERALL DIMENSIONS**



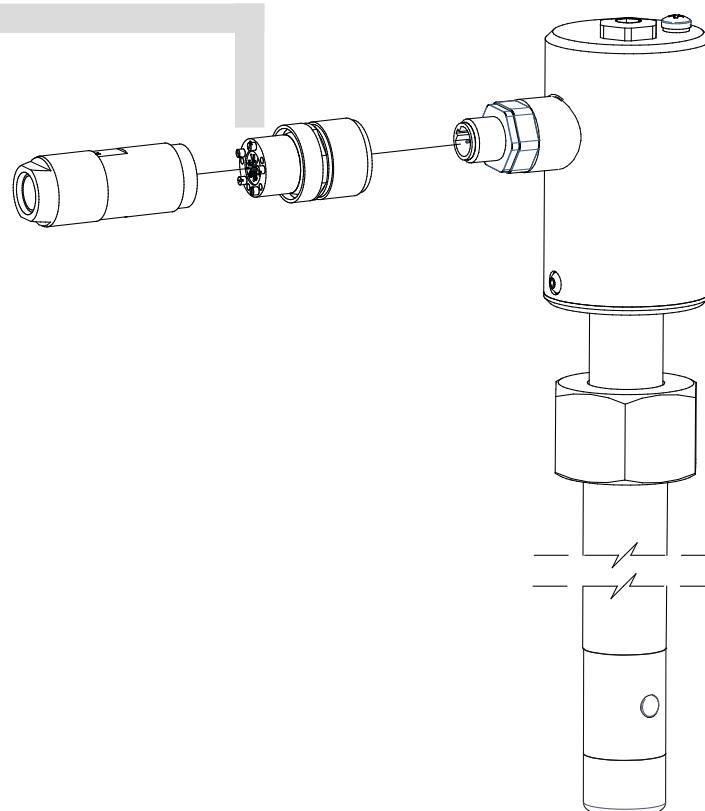
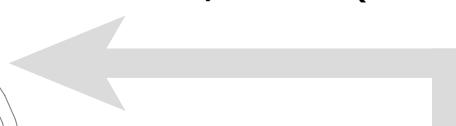
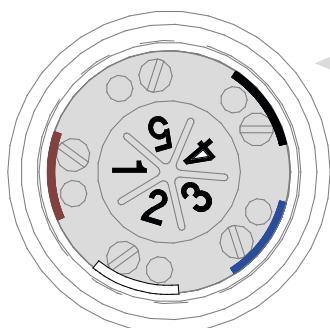
SIZE	"L" DIMENSION
1	176mm
2	244mm
3	462mm

■ EXPLODED LAYOUT

TIGHTENING TORQUES	
PG7 plug	4Nm
5 poles plug	4Nm

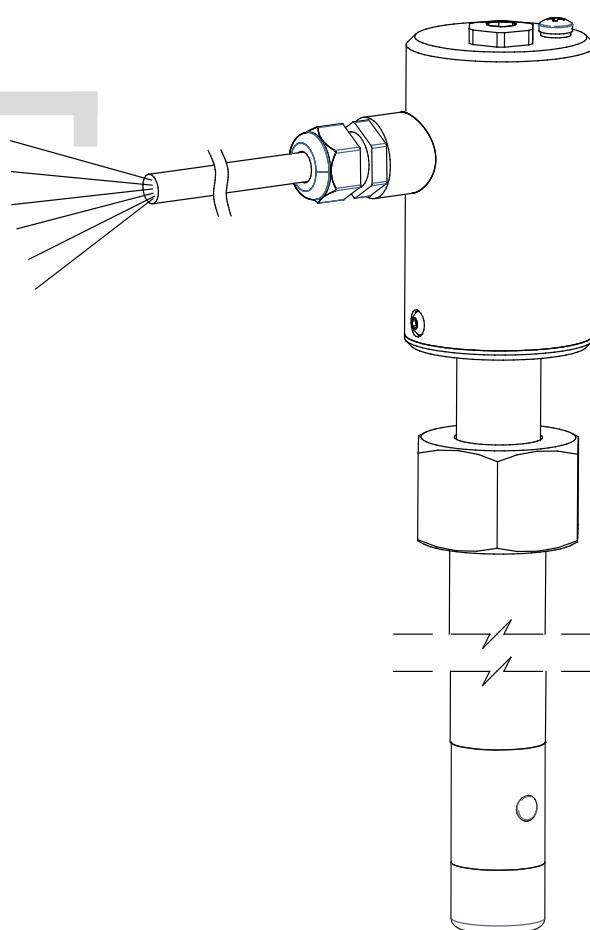
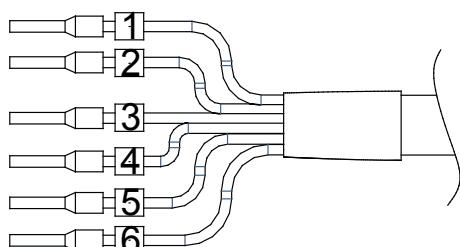
ELECTRICAL CONNECTIONS

INPUT/OUTPUTS (CONNECTOR)



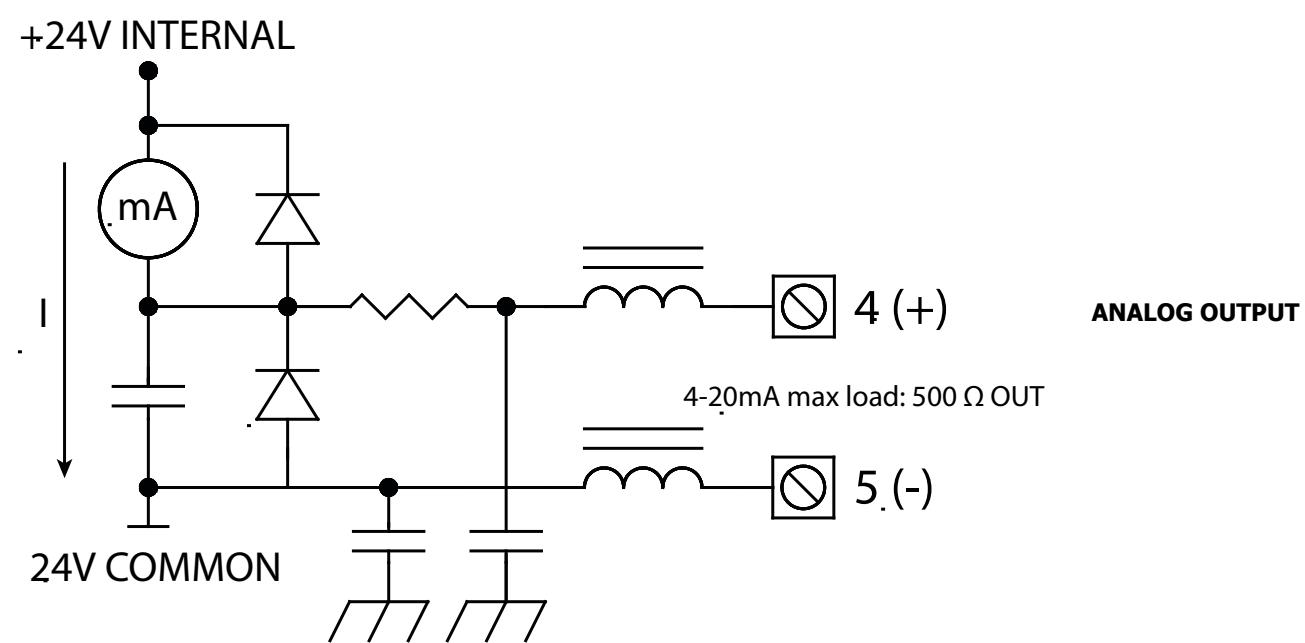
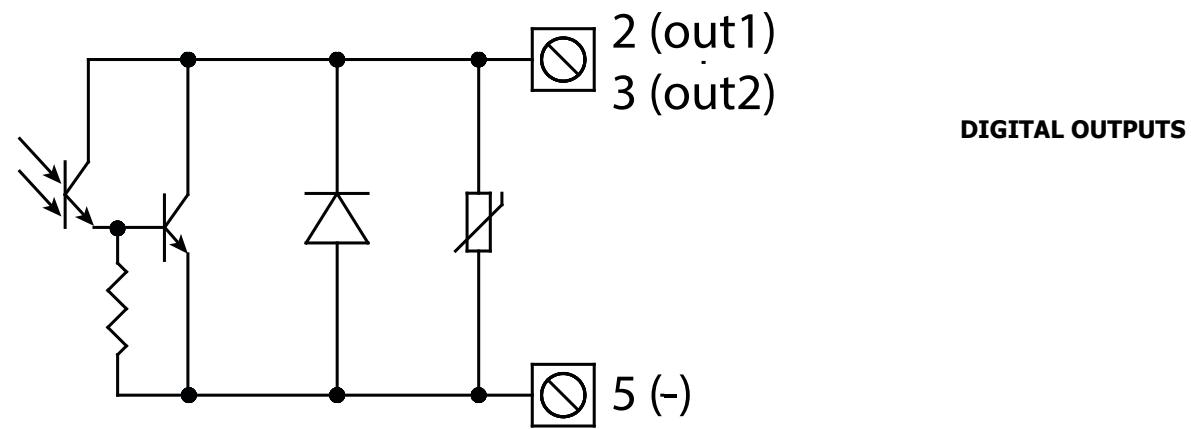
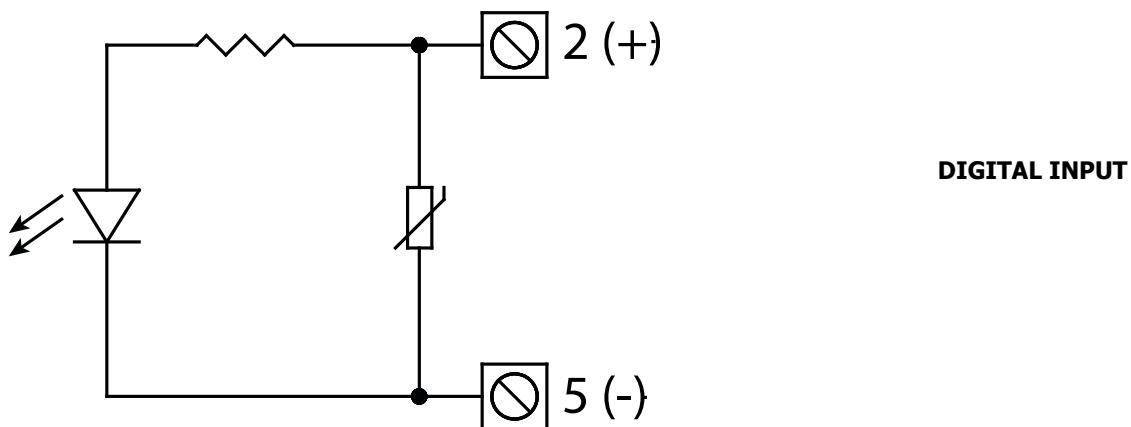
- 1 (+) POWER SUPPLY
- 2 (+) OUTPUT 1 / INPUT
- 3 (+) OUTPUT 2 (OPTIONAL)
- 4 (+) 4-20mA max load: 500 Ω OUTPUT
- 5 (-) POWER SUPPLY / OUTPUTS / INPUT

INPUT/OUTPUTS (CABLE)



- 1 (+) POWER SUPPLY
- 2 (+) OUTPUT 1 / INPUT
- 3 (+) OUTPUT 2 (OPTIONAL)
- 4 (+) 4-20mA max load: 500 Ω OUTPUT
- 5 (-) POWER SUPPLY / OUTPUTS / INPUT
- 6 SHIELD (CONNECT TO GROUND)

 **INPUT/OUTPUTS: SCHEMATICS**

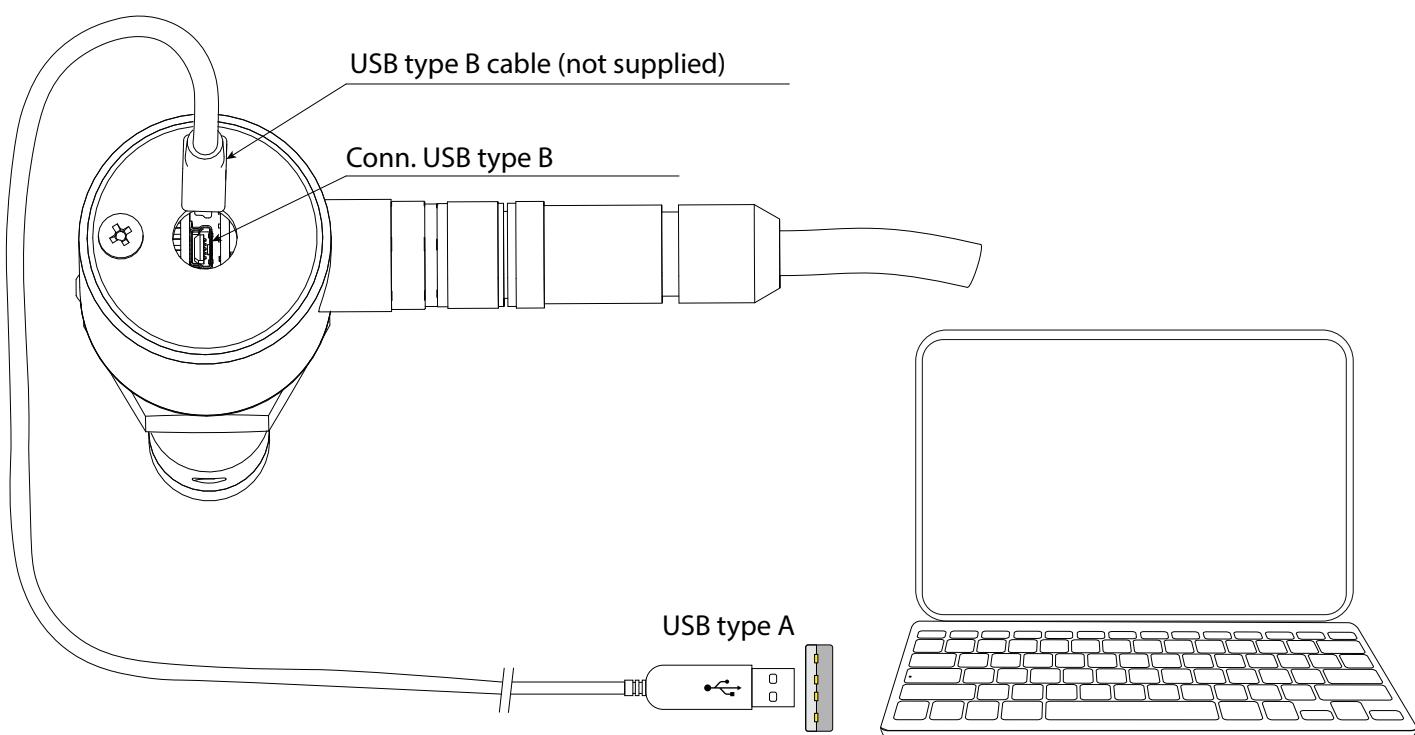


USER INTERFACE

CS3795 can be programmed by MCP interface (USB cable is required see below)



Make the USB connection as shown in the following picture.



PROGRAMMING FUNCTIONS

MAIN MENU
1-Sensor

SENSOR	
S. model=	027
Lining=	PEEK
S. type=	INSER.
U. type=	METRIC
Diam.=mm	00025.0
KA=	+01.0000
KZ=	+0000000
KD=	+00000
Ins. position=	0
KP dynamic=	OFF
Ki=	+01.8727
Kp=	+01.0000
KC=	1.00000
C.Curr.=mA	025.0
C.Reg. PB=	010
C.Reg. DK=	025
S.Freq.=Hz	10
E.P.Detect=	ON
R max=kohm	0500
S.err.delay=	010
Sens.verify=	OFF
Zero point cal.	

- 1.1 Sensors model: Enter the first two characters of the serial number of the sensor
 1.2 Flow sensor lining material type
 1.3 Type of sensor: fullbore or insertion
 1.4 Type of measure units for sensor parameter: metric or imperial
 1.5 Insert ND of sensor (0-2500)
 1.6 Calibration data of sensor visualized on sensor's label
 1.7 Sensor coefficient KZ (zero point)
 1.8 Sensor coefficient KD
 1.9 Sensor position
 1.10 KP dynamic, coefficient for insertion
 1.11 Sensor coefficient Ki
 1.12 Sensor coefficient Kp
 1.13 Sensor coefficient KC
 1.14 Sensor excitation current
 1.15 Current regulator proportional band
 1.16 Current regulator derivation constant
 1.17 Measure sampling frequency
 1.18 Enables the empty pipe detection feature
 1.19 Empty pipe detection threshold
 1.20 Signal error delay (n. sample)
 1.21 Automatic sensor verify enable
 1.22 Pipe hydraulic zero calibration

MAIN MENU
1-Sensor
2-Units

UNITS	
Diam.=	MM
FR. unit=	METRIC
P11 unit=	METRIC
P12 unit=	METRIC
T+ unit=	METRIC
T+ unit=	g
P+ unit=	METRIC
P+ unit=	g
T- unit=	METRIC
T- unit=	g
P- unit=	METRIC
P- unit=	g
Temp. unit=	°C
Mass units=	ON
Sg=kg/dm³	1.0000

- 2.1 Nominal diameter measure unit
 2.2 Flowrate type measure unit: metric or imperial
 2.3 Pulse 1 type measure unit: metric or not metric
 2.4 Pulse 2 type measure unit: metric or not metric
 2.5 Total direct totalizer measure unit type: metric or imperial
 2.6 Total direct totalizer measure unit
 2.7 Partial direct totalizer measure unit type: metric or not metric
 2.8 Partial direct totalizer measure unit
 2.9 Total reverse totalizer measure unit type: metric or not metric
 2.10 Total reverse totalizer measure unit
 2.11 Partial reverse totalizer measure unit type: metric or not metric
 2.12 Partial reverse totalizer measure unit
 2.13 Temperature measure unit
 2.14 Enable/disable the selection of mass units on full scale set
 2.15 Specific gravity coefficient

MAIN MENU
2-Units
3-Scales

SCALES	
FS1=	g/s 4908.7
FS2=	g/s 4908.7
P1s1=	1000.0
Tpl1sgms	1000.00
Freq1=Hz	0050.0
P1s2=	1000.0
Tpl2sgms	1000.00
Freq2=Hz	0050.0

- 3.1 Full scale flow rate 1
 3.2 Full scale flow rate 2
 3.3 Pulse value on channel 1
 3.4 Duration of the pulse generated on channel 1
 3.5 Full scale frequency for channel 1 (0.1Hz-1000.0Hz)
 3.6 Duration of the pulse generated on channel 2
 3.7 Pulse value on channel 2
 3.8 Full scale frequency for channel 2 (0.1Hz-1000.0Hz)

MAIN MENU
3-Scales
4-Measure

MEASURE	
Damping=	SMART
Cut-off=%	00.0
Cal.verify=	ON
Autorange=	ON

- 4.1 Measure filter
 4.2 Low flow zero threshold: 0-25% of full scale value
 4.3 Automatic calibration verify
 4.4 Automatic change of measurement range

MAIN MENU
 1-Sensor
 2-Units
 3-Scales
 4-Measure
5-Alarms

ALARMS
 Max.thr+=% 000 5.1
 Max.thr-=% 000 5.2
 Min.thr+=% 000 5.3
 Min.thr-=% 000 5.4
 Hysteresis=% 03 5.5
 mA v.alarm=% 010 5.6
 Hz v.alarm=% 125 5.7

Maximum value alarm set for direct flow rate
 Maximum value alarm set for reverse flow rate
 Minimum value alarm set for direct flow rate
 Minimum value alarm set for reverse flow rate
 Hysteresis threshold set for the minimum and maximum flow rate alarms
 Current output value in case of failure
 Frequency output value in case of alarms

MAIN MENU
 1-Sensor
 2-Units
 3-Scales
 4-Measure
 5-Alarms
7-Outputs

OUTPUTS
 Out1= FREQ.-
 Out2= PULSES+/-
 Out mA=4_22 -0+
 AIS= g/s 4908 .7

7.1 Output 1 functions
 7.2 Output 2 functions
 7.3 Choice of the function and the range of current output
 7.4 Full Scale value for analog out

MAIN MENU
 1-Sensor
 2-Units
 3-Scales
 4-Measure
 5-Alarms
 7-Outputs
9-Display

DISPLAY
 Language= GB 9.1
 D.rate=Hz 1 9.2
 Part.tot.= ON 9.3
 Neg.tot.= ON 9.4
 Net.tot.= ON 9.5
 Quick start= ON 9.6

Choice of the language
 Display updating frequency: 1-2-5-10 Hz
 Partial totalizer enable
 Negative totalizer enable
 Net totalizer enable
 Quick start menu visualization

FUNCTIONS
 T+ reset
 P+ reset
 T- reset
 P- reset
 Load Sens.f.def
 Load Conv.f.def
 Save Sens.f.def
 Save Conv.f.def
 Calibration

11.1 Execute immediate reset of total direct totalizer
 11.2 Execute immediate reset of partial direct totalizer
 11.3 Execute immediate reset of total reverse totalizer
 11.4 Execute immediate reset of partial reverse totalizer
 11.5 Load sensor factory default
 11.6 Load converter factory default
 11.7 Save sensor factory default values
 11.8 Save converter factory default values
 11.9 Execute immediate internal circuit calibration

MAIN MENU
 12-Diagnostic
 13-System

DIAGNOSTIC

Self test
Sens.verify
Flow sim.= OFF
Display measures
Disp.comm.vars
Display graphs
Firmware info
S/N=
WT=

12.1	Self test diagnostic function
12.2	Function tests physical display
12.3	Sensor verify diagnostic function
12.4	Flow rate simulation enabling
12.5	Display internal measured value
12.6	Display comm. diagnostic values
12.7	Display measure as graphs
12.8	Firmware version/revision
12.9	Board serial number

i2-Diagnostic
i3-System

SYSTEM

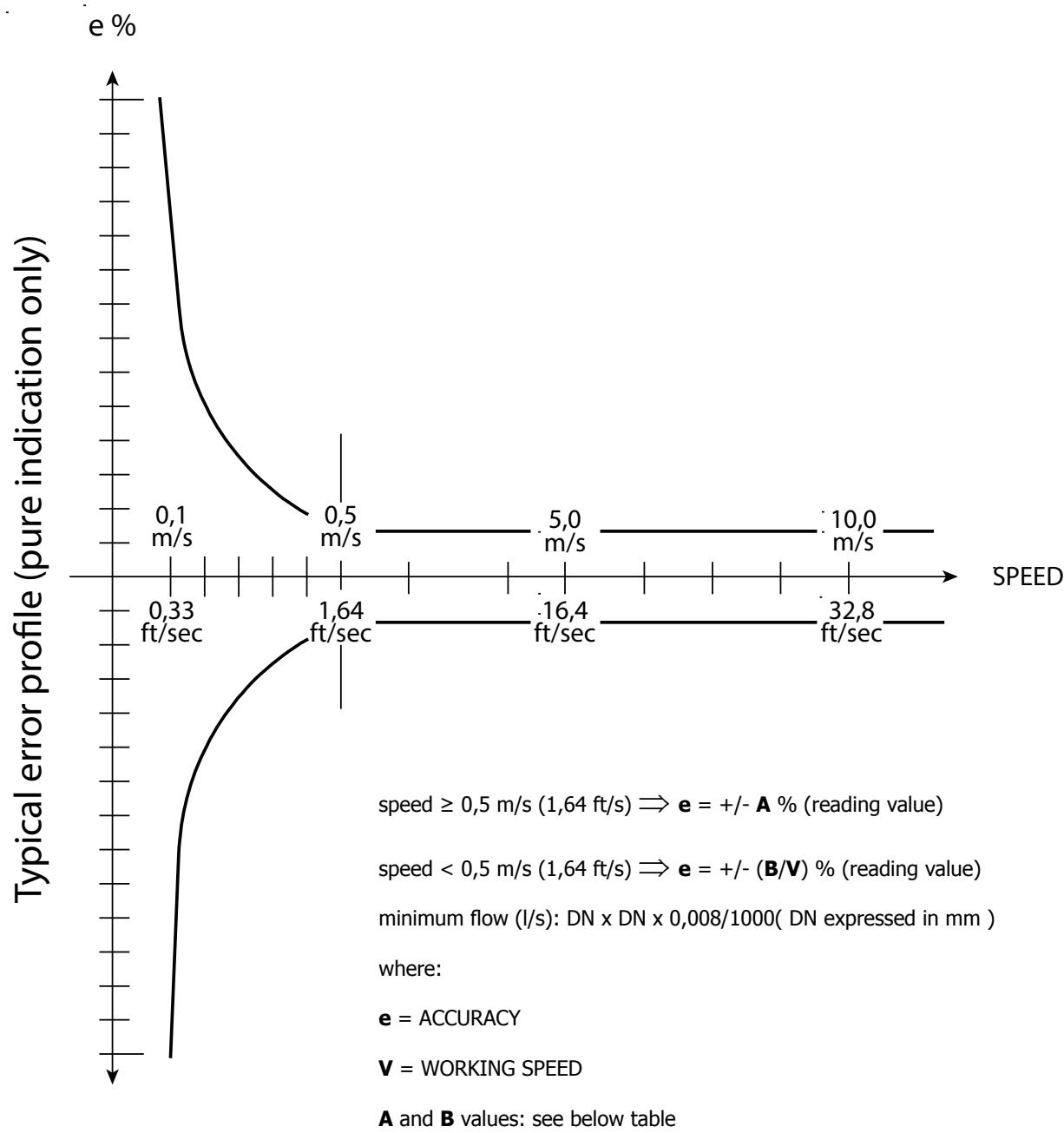
L1 code=*****
L2 code=*****
L3 code=*****
L4 code=*****
L5 code=*****
L6 code=*****
Restr.access=OFF
Device IP addr=
Client IP addr=
Network mask=
KT= 1.00000
KS= 1.00000
KR= 1.00000
DAC1 4mA= 02460
DAC1 20mA= 11050
FW update

13.1	Access level 1 code
13.2	Access level 2 code
13.3	Access level 3 code
13.4	Access level 4 code
13.5	Access level 5 code
13.6	Access level 6 code
13.7	Restricted access level
13.8	Device IP network address
13.9	Client IP network address
13.10	Network mask
13.11	Calibration coefficient KT
13.12	Calibration coefficient KF
13.13	Calibration coefficient KR
13.14	DAC1 out 4mA calibration point
13.15	DAC1 out 20mA calibration point
13.16	firmware update

i3-System

■ ACCURACY TABLE

The manufacturer guarantees only English text available on our web site www.isomag.com



A	B (speed in m/s)	B (speed in ft/s)
2	1	3,28

Reference conditions:

- Constant flow rate during the test
- Pressure: >30 kPa
- Flow condition : fully developed flow profile
- Zero stability +/- 0,005 %
- ID accuracy: mean value better than 1%, IDmin/IDmax>0,98

■ HOW TO ORDER

Example code	CS 3795	
	<i>DN</i>	
A	A	Suitable for diameter < / = 500 mm ; with MV801 board, Complete of n° 1 freely programmable digital I/O
	B	Suitable for diameter < / = 1000 mm ; with MV801 board, Complete of n° 1 freely programmable digital I/O
	C	Suitable for diameter < / = 2000 mm ; with MV801 board, Complete of n° 1 freely programmable digital I/O
Sensor and electrodes material / lining / internal gasket		
1	1	Materials : Sensor housing in AISI316 (head in PEEK), electrodes in HC276 , gasket in FKM
	2	Sensor material: To be specified
Connection type		
A	A	1" UNI 338 (GAS) female threaded connection
	B	1" NPT female threaded connection
	C	Connection: to be specified
Analog Output		
0	0	without analog Out
	1	with analog Out
Digital Output		
A	A	without additional digital Out
	B	n° 1 additional digital out
Electrical Connections		
1	1	5 poles connector
	2	2 meters of N° 5 poles cable ALREADY CONNECTED



CS3795-A1A0A1 (Complete code example for order)

ISOIL INDUSTRIA S.p.A.

HEAD OFFICE	SERVICE
Via Fratelli Gracchi, 27 20092 Cinisello Balsamo (MI) Tel +39 02 66027.1 Fax +39 02 6123202 vendite@isoil.it	isomagservice@isoil.it

If you want to find the complete list of our distributors access at the following link:
http://www.isoil.com/u_vendita.asp



Due to the constant technical development and improvement of its products, the manufacturer reserves the right to make changes and/or modify the information contained in this document without notice.