2026 Water circuit breakers - control box''M3'' – Boiler filling

Technical specifications for water leak detectors
Automatic Boiler Filling (Option: Modbus RS485)

M3 (Boiler filling)2026

FEATURES

LEAK MONITORING on a water network
Commercial: Leak flow rate monitoring from 10 L/h (DN15-40), 25 L/h (DN50-80), 40 L/h (DN100)

- Connection of 1 water meter (DN15-DN100)
- Connection of 1 motorized valve (Option)

BUZZER high-power integrated (adjustable duration)

RAPID LEAK DETECTION

CONSUMPTION MONITORING Refilling times (8-hour average)
Shut-off when Hourly Average Threshold is reached
Adjustable Hourly Average Threshold

DAILY CONSUMPTION MONITORING
Shut-off on Consumption Alert
Adjustable daily cumulative threshold

PULSE EMITTER MONITORING
Shut-off on Emitter Alert (enable/disable)
Adjustable parameters

CONNECTIONS

1 FIRE ALARM INLET allows the water supply to be opened instantly in the event of an alarm activation.

1 REMOTE BUTTON INPUT ON/OFF
(Open / Close / Reset)

1 **UNATTENDED INPUT** (unattended for 2 hours)

2 VALVE OUTPUTS (Open/Close)

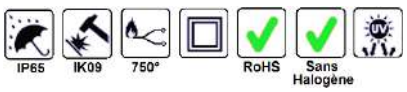
1 Dry Contact Output for Alert Relay (NO)

1 24VDC Output for Remote Siren/Indicator

OPTIONS: Bluetooth smartphone connection, etc.
- MODBUS RS 485 / MODBUS TPC/IP
- Remote 24Vdc 100dB siren, remote alert indicator
- Telephone transmitter

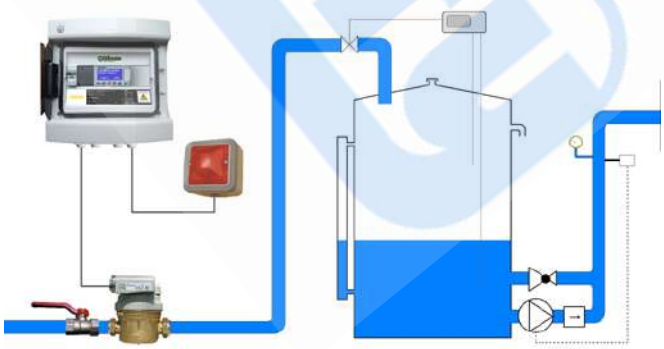
COMPOSITION

1 Polycarbonate Box, Dimensions: L215 x H210 x D105 mm + watertight door



- Circuit breaker
- Custom 24Vdc PLC M3
- 230Vac/30VA 24Vdc Power supply + Buzzer
- Terminal block
- Water meter DN15 to DN100

EASY INSTALLATION



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Automatic Boiler Filling (Option: Modbus RS485)

M3 (Boiler Filling)2026

SPECIFICATIONS (1)=Local setting and from BMS/BAS (with Modbus or Ethernet option)	M3 CH1.07 MODBUS	M3 CH1.07ETHERNET
Coffret Polycarbonate dimensions 215x210x105mm + watertight door IP65	YES	YES
Circuit breaker (sans l'option Modbus, Ethernet)	NO	NO
LCD screen backlight 4 lines of 18 characters	YES	YES
Power consumption screen ON / screen OFF	1w / 0.3w	1w / 0.3w
Integrated buzzer (triggered on Alert) (durée réglable 10min par défaut)	YES	YES
Password 1 / COMMANDS access (changeable)	YES	YES
Password 2 / COMMANDS-SETTINGS access (changeable)	YES	YES
Backup on mains power failure (10-year data memory)	YES	YES
Leak flow rate monitoring from (L/h):	10 (dn15-40) 25 (dn50-80) 40 (dn100)	10 (dn15-40) 25 (dn50-80) 40 (dn100)
LEAK detected -> Average hourly consumption exceeded -> ALERT + POWER SHUTOFF	YES	YES
Leak detected -> Daily consumption exceeded -> Alert + Shutdown	YES	YES
Minimum leak detection flow rate (according to meter start-up flow rate	YES	YES
ON/OFF COMMAND (open/close) (standard or gradual opening)	YES (1)	YES (1)
RESET COMMAND (open):	YES (1)	YES (1)
FORCED MODE COMMAND	YES (1)	YES (1)
AUTOMATIC MODE COMMAND	YES (1)	YES (1)
Daily consumption monitoring:	YES	YES
-Manual setting of consumption alert threshold:	YES	YES
Pulse emitter monitoring (on/off setting):	YES	YES
-Max duration without pulses (170h, adjustable)	YES	YES
-Shut-off on Emitter Alert (on/off setting):	YES	YES
Selection of the shut-off device: (0=no device, 1=motorized valve)	YES	YES
Configurable dry contact output for alert relay (alert selection) (NO)	YES	YES

Technical specifications for water leak detectors
Automatic Boiler Filling (Option: Modbus RS485)

M3 (Boiler Filling)2026

SPECIFICATIONS 1=Local visualization and visualization from GTC/BMS (with Modbus or Ethernet option)	M3 CH1.07 MODBUS	M3 CH1.07ETHERNET
Total Daily Consumption (LITERS)	YES	YES
Total Daily Consumption (Day -1) (LITERS)	YES	YES
General Monthly Cumulative Consumption (m3 and LITRES)	YES	YES
General Monthly Cumulative Consumption M-1 (m3 and LITRES)	YES	YES
Total annual consumption (m³ and litres)	YES	YES
Total annual consumption for year -1 (m³ and litres)	YES	YES
INDEX counter (Synchronization adjustable via PLC)	YES 1	YES 1
Minimum recorded flow rate for the day (L/h) (from midnight):	YES 1	YES 1
Last flow rate (L/h):	YES 1	YES 1
LEAK Alert on main network:	YES 1	YES 1
DAILY CUMULATIVE CONSUMPTION Alert	YES 1	YES 1
HOURLY CONSUMPTION Alert	YES 1	YES 1
General network SHUT-OFF / / (Reset COMMAND from BMS)	YES 1	YES 1
EMITTER Alert:	YES 1	YES 1
FIRE ALARM Alert:	YES 1	YES 1
On/Off status (valve open/valve closed) / (COMMAND from BMS)	YES 1	YES 1
FORCED MODE (On/Off status):	YES 1	YES 1
Shut-off on Emitter Alert (on/off status):	YES 1	YES 1
Pulse emitter monitoring (on/off status):	YES 1	YES 1
Date, Time (adjustable)	YES 1	YES 1
Stop surveillance ON/OFF (arrêt surveillance par Timer ou BP en option)	YES 1	YES 1
Software version	YES	YES
Program error / Error number	YES	YES
INPUTS / OUTPUTS	**M3 CH1.07 MODBUS**	**M3 CH1.07ETHERNET**
Main Emitter Input (E1)	YES	YES
Temporary monitoring stop input (2h) (via clock or push button as options)	YES -OPTION	YES -OPTION
Fire alarm input (loop break)	YES	YES
Input for open/close/reset via remote push button or radio remote control	YES -OPTION	YES -OPTION
Open/close outputs (motorized valve / solenoid valve)	YES	YES
24Vdc output (max 5W) External siren, indicator, GSM transmitter	YES	YES
Dry contact output (alert relay) (NO)	YES	YES
MODBUS RS485 or TCP/IP	YES	YES
BLUETOOTH as option (control / configuration from smartphone)	YES	YES

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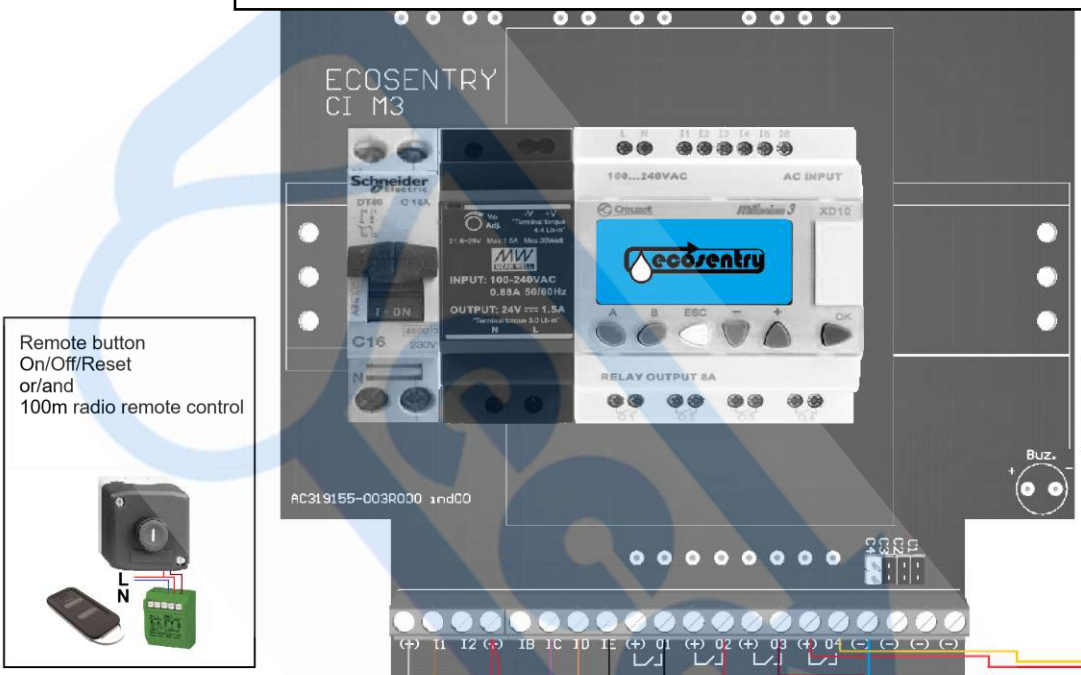
NOTE: Modbus versions do not have a protective circuit breaker



Remote button
On/Off/Reset
or/and
100m radio remote control

+ IE

+ IC

The IC entry suspends monitoring

ID + 24Vcc

NC

Contact NC

Remove the jumper + ID connection of a normally closed (NC) contact controlled by the fire alarm, on + and ID in case of loop failure, the valve opens first

O1 Black

O2 Red

Com Blue

O3 -

O4 230Vac

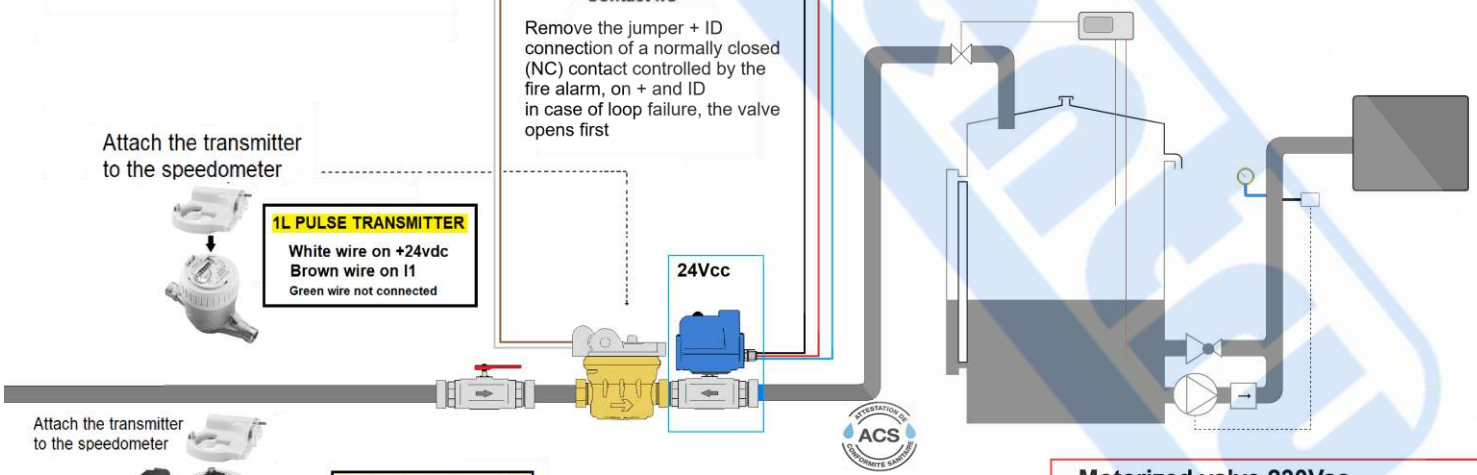
230V indicator light - Alert postponement

24V DC SIREN (linked to the buzzer)

Attach the transmitter to the speedometer

1L PULSE TRANSMITTER
White wire on +24vdc
Brown wire on I1
Green wire not connected

24Vcc



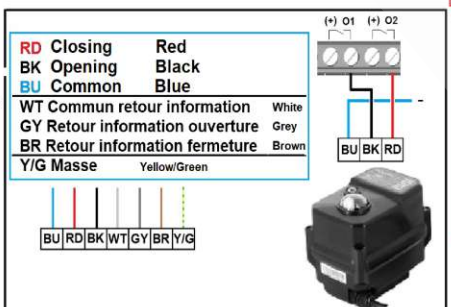
Attach the transmitter to the speedometer

5L PULSE TRANSMITTER
3 Pulse outputs
White wire on +24vdc
Brown wire on I1
or Yellow wire on I1
or Green wire on I1

Motorized valve 230Vac to be wired with relay REF. REL2401

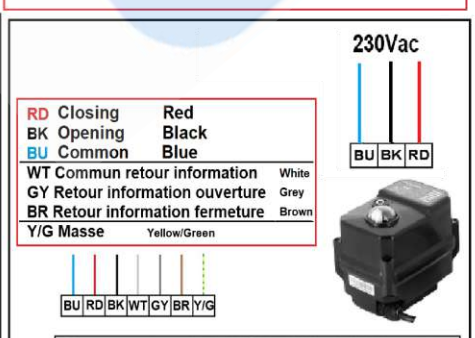
2 Wire Valve LYVA2 24Vdc 8W
Automatic opening by capacitor (lack of voltage)

Valve CWX20-TC01 / CWX25-TC01
3 wire 9- 24Vcc 5W



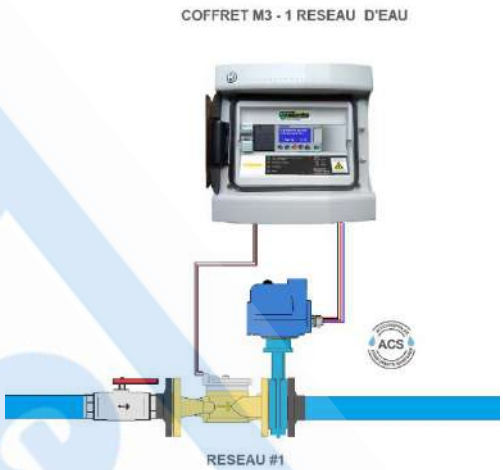
Servomotor IP67 TCR-02N 24vdc 15W

Servomotor IP67 TCR-05N 24vdc 25W



Servomotor IP67 TCR-02N 230Vdc 15W

Servomotor IP67 TCR-05N 230Vdc 25W



Crouzet Automaton Millénium M3

Certifications CE, UL, CSA
Compliance with standards (Low Voltage and EMC Directives) CEI/EN 61131-2 (Open equipment)
IEC/EN 61131-2 (Zone B) IEC/EN 61000-6-2 IEC/EN 61000-6-3 (*) IEC/EN 61000-6-4
(*) Sauf configuration (88 970 1.1 ou 88 970 1.2) + (88 970 250 ou 88 970 270) + 88 970 241 classe A (classe B dans armoire métallique)

earthing : None

Degree of protection according to IEC/EN 60529: IP40 on front panel / IP20 on terminal block
Overvoltage category 3 according to CEI/EN 60664-1
Pollution Level: 2 according to CEI/EN 61131-2
Maximum operating altitude Pour fonctionnement : 2000 m Pour transport : 3048 m
Mechanical endurance Vibration immunity CEI/EN 60068-2-6, essai Fc
Shock immunity CEI/EN 60068-2-27, essai Ea
Electrostatic discharge withstand Electrostatic discharge immunity
CEI/EN 61000-4-2, level 3
Resilience to disruptions HF Radiated electrostatic field immunity CEI/EN 61000-43
Fast transient/burst immunity IEC/EN 61000-4-4, level 3
Surge immunity IEC/EN 61000-4-5
Common mode radio frequency IEC/EN 61000-4-6, level 3
Voltage dips and interruptions (a) IEC/EN 61000-4-11
Damped oscillatory wave immunity IEC/EN 61000-4-12
Broadcast conducted and radiated Class B (*) selon EN 55022, EN 55011 (CISPR22, CISPR11) groupe 1
(*) Except configuration (88 970 1.1 or 88 970 1.2) + (88 970 250 or 88 970 270) + 88 970 241 class A (class B in metal enclosure)
Operating temperature Millennium 3 Smart -20 -> +70 °C sauf CB, XB en cc : -30 -> +70 °C (+ 40 °C in a non-ventilated cabinet) according to CEI/EN 60068-2-1 et CEI/EN 60068-2-2
Storage temperature Millenium 3 Essential et extensions -40 ->+70 °C selon CEI/EN 60068-2-1 et CEI/EN 60068-2-2
Storage temperature Millennium 3 Smart -40 ->+80 °C selon CEI/EN 60068-2-1 et CEI/EN 60068-2-2
Relative humidity 95% max. (no condensation or dripping) selon CEI/EN 60068-2-30
Montage Sur profilé DIN symétrique, 35 x 7,5 mm et 35 x 15 mm ou sur panneau(2 x Ø 4 mm)
Screw terminal wiring capacity Fil souple avec embout =
1 conducteur : 0,25 à 2,5 mm 2 (AWG 24 -> AWG 14) 2 conductors 0,25 à 0,75 mm 2 (AWG 24 -> AWG 18)
Fil semi-rigide =1 conducteur : 0,2 à 2,5 mm 2 (AWG 25 ->AWG 14)
Fil rigide =1 conducteur : 0,2 à 2,5 mm 2 (AWG 25 ->AWG 14) /2 conductors 0,2 à 1,5 mm 2 (AWG 25 ->AWG 16)
Tightening torque = 0,5 N.m (4.5 lb-in) (Tightening with a 3.5 mm diameter screwdriver)

Processing characteristics for Millennium 3 Smart XD products

Program size en FBD 350 blocs typiques
64 macros max.
256 blocs max. par macro
180 blocs typiques
FBD memory size: 8 KB
Number of rows in Ladder: 120 rows
LCD display Millenium XD : afficheur de 4 lignes de 18 caractères
Programming method Blocs fonctions/SFC (Grafcet) ou Ladder
Program memory Flash EEPROM
Removable memory EEPROM
Data memory 368 bit/200 mots
Backup time in case of power failure: Program and settings in controller: 10 years
Program and settings in removable memory: 10 years
Data memory: 10 yearsCycle time Blocs fonctions : 6 -> 90 ms (20 ms typique)
Ladder : 20 ms typique
Response time Temps d'acquisition des entrées : 1 à 2 temps de cycle
Clock backup autonomy 10 ans (pile lithium) à 25 °C
Clock drift Dérive < 12 min/an (à 25 °C)/ 6 s/mois (à 25 °C et calibration)
Timer block accuracy 1 % ± 2 temps cycle
Availability at power-up < 1,2 s

Specifications for 24Vdc powered products

Nominal voltage 24 VDC
Operating limits -20 %/+25 % soit 19,2 Vcc -> 30 Vcc
(Ondulation comprise)
Immunity to micro-cuts <= 1 ms (répétition 20 fois)
Maximum power consumptionmum XD10-XB10 à sorties relais : 4 W
Polarity reversal protection Yes

Inputs TOR (I1 à IA)

Input voltage 24 V cc (-20 %/+25 %)
Input current 3,2 mA @ 24 V c
Input impedance 7,4 kO
Turn-on voltage at logic state 1 >= 15 V DC
Turn-on current at logic state 1 >= 2.2 mA
Release voltage at logic state 0 <= 5 V DC
Release current at logic state 0 < 0.75 mA
Response time 1->2 temps de cycle + 6 ms
Maximum counting frequency - Inputs I1 & I2 : FBD (jusqu'à 6 kHz) & Ladder (1 kHz)
- Inputs I3 à IA & IH à IY : selon
temps de cycle (Tc) et temps de réponse de l'entrée (Tr) : 1 / ((2 x Tc)+ Tr)
Sensor type Contact or PNP 3-wire
Compliance CEI/EN 61131-2 Type 1
Input type Résistive
Isolation between supply and inputs None
Isolation between inputs None
Polarity reversal protection Yes
Status indicator On LCD screen pour XD

Inputs analogiques ou TOR (IB à IG)

XD10 4 entrées de IB -> IE
Inputs utilisées en analogiques en FBD seulement
Measurement range (0 -> 10 V) ou (0 -> V alimentation)
Input impedance 12 kO
Input voltage 30 Vcc max.
LSB value 29 mV
Input type Mode commun
10 bit resolution at max input voltage
Conversion time Cycle time contrôleur
Precision at 25 °C ± 5 %
Precision at 55 °C ± 6,2 %
Repeatability at 55°C ± 2 %
Analog channel and supply isolation None
Longueur câble 10 m maximum, avec câble blindé (capteur non isolé)
Polarity reversal protection Yes
Potentiometer control 2,2 kO/0,5 W (Préconisé) / 10 kO max.

Inputs used as digital

Input voltage 24 Vcc (-20 %/+25 %)
Input current 1,6 mA @ 19,2 Vcc / 2,0 mA @ 24,0 Vcc / 2,5 mA @ 30,0 Vcc
Input impedance 12 kO
Turn-on voltage at logic state 1 >= 15 VDC
Turn-on current at logic state 1 >= 1.2 mA
Release voltage at logic state 0 <= 5 VDC
Release current at logic state 0 <= 0.5 mA
Response time 1 -> 2 temps de cycle
Maximum counting frequency en FBD Selon temps de cycle (Tc) et temps de réponse de l'entrée (Tr) :1 / ((2 x Tc) + Tr)
Sensor type Contact or PNP 3-wire
Compliance CEI/EN 61131-2 Type 1
Input type Résistive
Isolation between supply and inputs None
Isolation between inputs None
Polarity reversal protection Yes
Status indicator On LCD screen pour XD

Relay output specifications common to the entire range

Switching voltage maximum 5 -> 30 Vcc
Courant maximum du Commun de sortie 12 A (10 A UL) pour O8, O9, OA
Switching current XD10: 4 relais 8 A
Electrical durability for 500,000 operations Utilization category DC-12 : 24 V, 1,5 A
Utilization category DC-13 : 24 V (L/R = 10 ms), 0,6 A
Minimum switching current 10 mA (sous tension minimale de 12 V)
Low-level contact reliability: 12 V, 10 mA
Maximum cadence No-load: 10 Hz / At rated current: 0,1 Hz
Mechanical lifetime 10 000 000 (operating cycles)
Assigned shock resistance voltage According to CEI/EN 60947-1 et CEI/EN 60664-1 : 4 kV
Response time hors cycle Enclenchement 10 ms /Déclenchement 5 ms
Built-in protection Against short-circuit: None/ Contre les surtensions et surchages : None
Status indicator On LCD screen pourXD

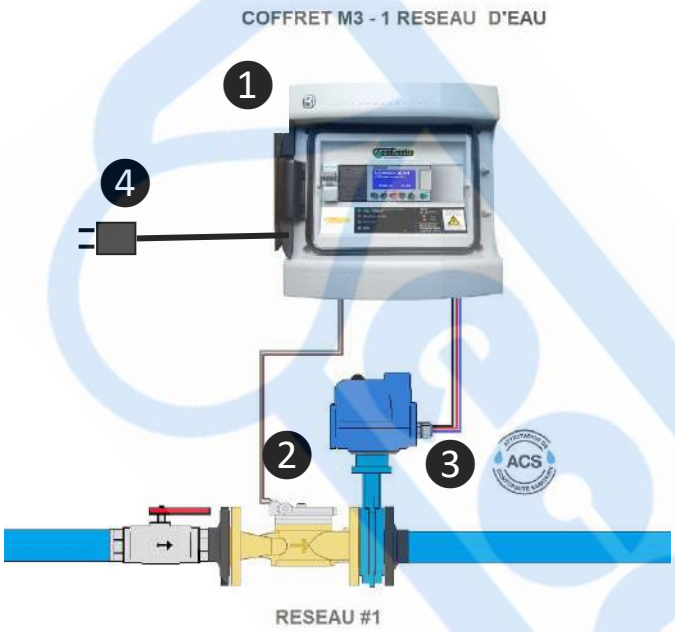
Millennium 3 Smart

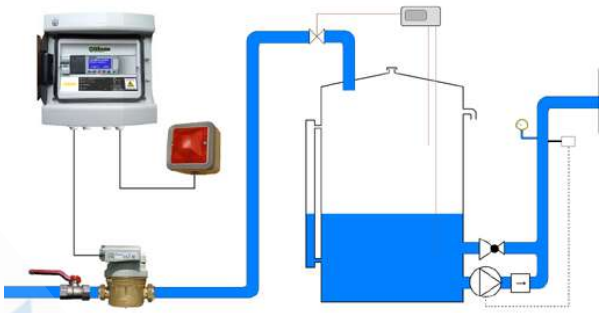
Blue backlit screen, white text
Power supply versions: 24 VDC, 12 VDC100 -> 240 Vac, 24 Vac
-Operating temperature
-20 to +70 °C (+40 °C in a non-ventilated cabinet) depending on CEI/EN 60068-2-1 et CEI/EN 60068-2-2
-Clearance temperature
-40 -> +80 °C depending on CEI/EN 60068-2-1 etCEI/EN 60068-2-2
More extensions - XN07 extension for inter-Millenium 3 communication (up to 7 Milleniums)

- **XA03 extension** (3 analog Pt100 temperature inputs)
- **More probes:** Direct connection with NTC temperature probes
- **More functions:** Additional business functions including self-adaptive PID controller, astronomical clock (twilight function), y=f(x) transfer function, 2-axis solar tracking, etc.

Number of function blocks in the library: 125

EASY INSTALLATION





Gradual opening of the programmable valve
(sauf LYVA2)

METER SIZE	2 Meter	3 Shut-off
Dn 15	A	J E
Dn 20	B	J E
Dn 25	C	F
Dn 32	C	F
Dn 40	C	F
Dn 50 BRIDE	D	G
Dn 65 BRIDE	D	G
Dn 80 BRIDE	D	G
Dn 100 BRIDE	D	G

A B		J E		LYVA2 CWX-TC01 TCR02N IP67	2-wire 8W 3-wire 5W 7-wire 15W Regulated 3W resistance
C		F		TCR05N IP67	7-wire 25W Regulated 3W resistance
D		G		TCR05N IP67	7-wire 25W Regulated 3W resistance