

W
o
r
k
s
h
o
p
o
r
d
e
r

Key
w
o
r
d

F
i
t
s
w
i
t
h
a
r
t
i
c
l
e

A
c
c
e
s
s
o
r
i
e
s

A
c
c
u
r
a
c
y

C
o
m
m
u
n
i
c
a
t
i
o
n

O
u
t
p
u
t
s
i
g
n
a
l

C
o
n
n
e
c
t
i
o
n
d
i
m
e
n
s
i
o
n

C
o
n
n
e
c
t
i
o
n
t
y
p
e

T
e
m
p
e
r
a
t
u
r
e
(^oC)

P
r
e
s
s
u
r
e
(
b
a
r
)

P
N

F
l
o
w
(
l
/
m
i
n
)

D
N

D
i
m
e
n
s
i
o
n
s
(
m
m
)

M
a
t
e
r
i
a
l

M
e
d
i
a

M
o
n
t
a
g
e

P
r
o
d
u
c
t
c
a
t
e
g
o
r
y

E
n
e
r
g
y
c
l
a
s
s

D
e
s
c
r
i
p
t
i
o
n

R
S
K

A
r
t
i
c
l
e

A
T
7
2
7
4
C
1
0
0
;

A
T

7
2
7
4

Tur
bin
e
wh
eel

0
;

-
K
;

Me
is-
tre
am
;P
um
p/
Dis

7
2
7
4
C
1

tri-
bu-
tio
n

0
n
s
t

co
n
s
t
r
u
c
t
i
o
n

-
K
V
7
2
7

n,
hot
wa
ter,
ol

D
N
5
0
,

Q
P
=

2

H
o
r
i

Art. No.
RSK
Description
Energy class
Product category
Montage
Media
Material
Dimensions (mm)
Flow (l/min)
PN
Pressure (bar)
Temperature (°C)
Connection type
Connection dimension
Output signal
Communication
Accuracy
Accessories
Fits with article
Key word
Workshop order

AT

7274C100;

AT

727

4 Turbin
Cee wheel
0 eel

0 ; Me
- Kis-
; tre
am

A ;P
T um
p/

7 Dis
2 tri-
7 bu-
4 tio
C n

1 co
0 nst
0 ruc
- tio
K n,

V hot
K wa
; ter,
dly

DN

50,

CP =

2

Horiz

W
o
r
k
s
h
o
p
o
r
d
e
r

Key
w
o
r
d

F
i
t
s
w
i
t
h
a
r
t
i
c
l
e

A
c
c
e
s
s
o
r
i
e
s

A
c
c
u
r
a
c
y

C
o
m
m
u
n
i
c
a
t
i
o
n

O
u
t
p
u
t
s
i
g
n
a
l

C
o
n
n
e
c
t
i
o
n
d
i
m
e
n
s
i
o
n

C
o
n
n
e
c
t
i
o
n
t
y
p
e

T
e
m
p
e
r
a
t
u
r
e
($^{\circ}$ C)

P
r
e
s
s
u
r
e
(bar)

P
N

F
l
o
w
(l/min)

D
N

D
i
m
e
n
s
i
o
n
s
(mm)

M
a
t
e
r
i
a
l

M
e
d
i
a

M
o
n
t
a
g
e

P
r
o
d
u
c
t
c
a
t
e
g
o
r
y

E
n
e
r
g
y
c
l
a
s
s

D
e
s
c
r
i
p
t
i
o
n

R
S
K

A
r
t
i
c
l
e

A
T
7
2
7
4
C
1
0
0
;

A
T

7
2
7
4

Tur
bin
e
wh
eel
;
Me
is-
tre
am
;P
um
p/
Dis
tri-
bu-
tio
n
co
nst
ruc
tio
n,
hot
wa
ter,
;

D
N
6
5
Q
P
=

H
o
r
i

Art. No.
RSK
Description
Energy class
Product category
Montage
Media
Material
Dimensions (mm)
Flow (l/min)
PN
Pressure (bar)
Temperature (°C)
Connection type
Connection dimension
Output signal
Communication
Accuracy
Accessories
Fits with article
Key word
Workshop order

AT

7274C100;

AT

727

4 Turbin
Cee wheel
0 eel

0 ; Me
- Kis-
; tre
am

A ;P
T um
p/

7 Dis
2 tri-
7 bu-
4 tio
C n

1 co
0 nst
0 ruc
- tio

n, hot
V wa
K ter,
; olv

DN

50,

CP =

2

Horri

W
o
r
k
s
h
o
p
o
r
d
e
r

Key
w
o
r
d

F
i
t
s
w
i
t
h
a
r
t
i
c
l
e

A
c
c
e
s
s
o
r
i
e
s

A
c
c
u
r
a
c
y

C
o
m
m
u
n
i
c
a
t
i
o
n

O
u
t
p
u
t
s
i
g
n
a
l

C
o
n
n
e
c
t
i
o
n
d
i
m
e
n
s
i
o
n

C
o
n
n
e
c
t
i
o
n
t
y
p
e

T
e
m
p
e
r
a
t
u
r
e
($^{\circ}$ C)

P
r
e
s
s
u
r
e
(bar)

P
N

F
l
o
w
(l/min)

D
N

D
i
m
e
n
s
i
o
n
s
(mm)

M
a
t
e
r
i
a
l

M
e
d
i
a

M
o
n
i
t
o
r
i
n
g

P
r
o
d
u
c
t
c
a
t
e
g
o
r
y

E
n
e
r
g
y
c
l
a
s
s

D
e
s
c
r
i
p
t
i
o
n

R
S
K

A
r
t
i
c
l
e

A
T

7
2
7
4
C
1
0
0
;

A
T

7
2
7
4
C
1
0
0
;

-
K
;

A
T
7
2
7
4
C
1
0
0
;

-
K
V
K
;

Tur
bin
e
wh
eel
;
Me
is-
tre
am
;P
um
p/
Dis
tri-
bu-
tio
n
co
nst
ruc
tio
n,
hot
wa
ter,
olv

D
N
8
0
.

Q
P
=

H
o
r
i

Art. No.
RSK
Description
Energy class
Product category
Montage
Media
Material
Dimensions (mm)
Flow (l/min)
PN
Pressure (bar)
Temperature (°C)
Connection type
Connection dimension
Output signal
Communication
Accuracy
Accessories
Fits with article
Key word
Workshop order

AT

7274C100;

AT

727

4 Turbin
Cee wheel
0 eel

0 ; Me
- Kis-
; tre
am

A ;P
T um
p/

7 Dis
2 tri-
7 bu-
4 tio
C n

1 co
0 nst
0 ruc
- tio
K n,

V hot
K wa
; ter,
dlv

DN

80,

CP =

6

Horri

W
o
r
k
s
h
o
p
o
r
d
e
r

Key
w
o
r
d

F
i
t
s
w
i
t
h
a
r
t
i
c
l
e

A
c
c
e
s
s
o
r
i
e
s

A
c
c
u
r
a
c
y

C
o
m
m
u
n
i
c
a
t
i
o
n

O
u
t
p
u
t
s
i
g
n
a
l

C
o
n
n
e
c
t
i
o
n
d
i
m
e
n
s
i
o
n

C
o
n
n
e
c
t
i
o
n
t
y
p
e

T
e
m
p
e
r
a
t
u
r
e
(^oC)

P
r
e
s
s
u
r
e
(
b
a
r
)

P
N

F
l
o
w
(
l
/
m
i
n
)

D
N

D
i
m
e
n
s
i
o
n
s
(
m
m
)

M
a
t
e
r
i
a
l

M
e
d
i
a

M
o
n
t
a
g
e

P
r
o
d
u
c
t
c
a
t
e
g
o
r
y

E
n
e
r
g
y
c
l
a
s
s

D
e
s
c
r
i
p
t
i
o
n

R
S
K

A
r
t
i
c
l
e

A
T
7
2
7
4
C
1
0
0
;

A
T

7
2
7
4

Tur
bin
e
wh
eel
;

- Me
Kis-
tre
am
;P
Tum
p/
Dis
tri-
bu-
tio
n
C
o
nst
ruc
tio
n,
V
hot
wa
ter,
;

D
N
1
0
0
.
Q
P
=
6

H
o
r
i

Art. No.
RSK
Description
Energy class
Product category
Montage
Media
Material
Dimensions (mm)
Flow (l/min)
PN
Pressure (bar)
Temperature (°C)
Connection type
Connection dimension
Output signal
Communication
Accuracy
Accessories
Fits with article
Key word
Workshop order

AT

7274C100;

AT

727

4 Turbin
Cee wheel
0 eel

0 ; Me
- Kis-
; tre
am

A ;P
T um
p/

7 Dis
2 tri-
7 bu-
4 tio

C n
1 co
0 nst
0 ruc

- tio
K n,
V hot
K wa
; ter,

dlv

DN

100

CP =

6

Horri

W
o
r
k
s
h
o
p
o
r
d
e
r

Key
w
o
r
d

F
i
t
s
w
i
t
h
a
r
t
i
c
l
e

A
c
c
e
s
s
o
r
i
e
s

A
c
c
u
r
a
c
y

C
o
m
m
u
n
i
c
a
t
i
o
n

O
u
t
p
u
t
s
i
g
n
a
l

C
o
n
n
e
c
t
i
o
n
d
i
m
e
n
s
i
o
n

C
o
n
n
e
c
t
i
o
n
t
y
p
e

T
e
m
p
e
r
a
t
u
r
e
($^{\circ}$ C)

P
r
e
s
s
u
r
e
(bar)

P
N

F
l
o
w
(l/min)

D
N

D
i
m
e
n
s
i
o
n
s
(mm)

M
a
t
e
r
i
a
l

M
e
d
i
a

M
o
n
t
a
g
e

P
r
o
d
u
c
t
c
a
t
e
g
o
r
y

E
n
e
r
g
y
c
l
a
s
s

D
e
s
c
r
i
p
t
i
o
n

R
S
K

A
r
t
i
c
l
e
N
o

A
c
c
e
s
s
o
r
i
e
s
,
c
o
m
b
i
n
e
d
M
-
B
u
s
-
a
n
d
e
n
c
o
d
e
r

7
2
7
5
M
E
I
-
B
1
5

Art. No.
RSK
Description
Energy class
Product category
Media
Material
Dimensions (mm)
Flow (l/min)
PN
Pressure (bar)
Temperature (°C)
Connection type
Connection dimension
Output signal
Communication
Accuracy
Accessories
Fits with article
Keyword
Workshop order

Accessories
combined
M-Bus
and
encoder

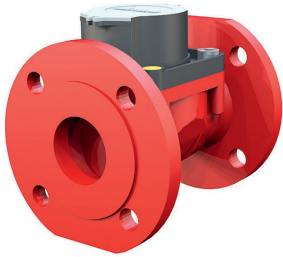
7
2
7
5
ME
I
-
B
1

1
0
0
0

Dimension range DN 50 - 100	PN 16	Temperature range +5°C to 90 °C	Material Grey iron
---------------------------------------	-----------------	---	------------------------------

Range of application

Measuring of hot water with registration of consumed amount. Suitable for distribution- and pump-plants with high continuous flows and when low pressure loss is desired. The meter is prepared for a remote sensor combined pulse/M-bus sensor. An optical sensor can alternatively be connected.



AT 7170

Program text

UGE.35 Flow meter, pipe mounted with a digital display, accumulated value Hot water meter AT7170... MeiStream, prepared for a remote module. Q3 m³/h, DN, flanged, PN16.

Quality assurance

MID-approved and CE-marked.

Ratio horizontal (qp/qi) = 1/50 Ratio vertical (qp/qi) = 1/25

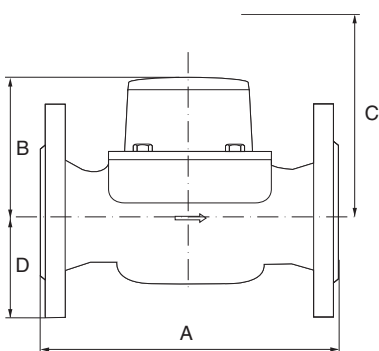
Details

Component	Material
Body	Grey iron
Meter chamber	Plastic
Support pin	Carbide

Dimensions and weight

DN	50		65		80		100	
	WP	WS	WP	WS	WP	WS	WP	WS
A	200	270	200	300	225	300	250	360
B	120	120	120	120	150	150	150	150
C	200	200	200	200	270	270	270	270
D	73	73	85	85	95	95	105	105
Weight	7,8	9,6	10,1	12,0	14,2	16,3	18,2	20,2

Dimensions in mm, weight in kg. WP and WS corresponds to the building length for the Woltman meter. WS is the standard length for 7170. Choose WS for the same length as AT7169.



Function and design

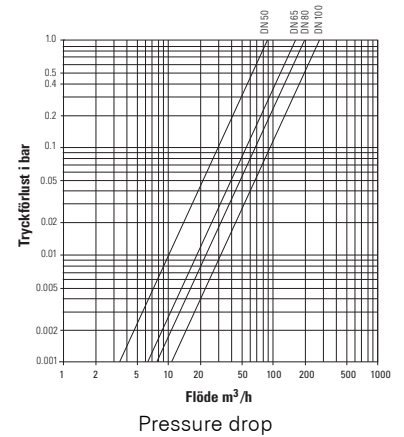
The water meter is a type of turbine meter with a unique principle, where a free-flowing spherical turbine rotates in the water stream, which lowers the friction. Its motion is transmitted with magnetic coupling to the counter.

The counter is six-digit, hermetically sealed and 360° rotatable to be able to rotate the dial in a good position. The meter is submersible.

DN50-100: consumption displays in m³. The meter also has three indicators which shows 1, 10 and 100 liters per viewing turn.

The meter has sockets for combined pulse/M-bus sensors of HRI-type and a socket for an optical encoder. The pulse type for the HRI-sensor is a polarity-dependent open-collector without sockets but with compensation/indication of backflow, standard pulse 100l/pulse. The M-bus protocol allows data logging for eg. maximum/minimum values and monthly values etc.

Rätten till ändringar utan föregående meddelande förbehålls.
 Armatec ansvarar inte för eventuella tryckfel eller missförstånd.
 Dokumentet får kopieras endast i sin helhet.



Function data

DN	50	65	80	100
q_p , continuous flow (m ³ /h)	25	25	60	60
q_i , minimum flow (m ³ /h)	0,5	0,5	1,2	1,2
q_s , overload flow (m ³ /h)	50	50	120	120
q_c , start value (m ³ /h)	0,08	0,08	0,15	0,15
q_p/q_i , Ratio, horizontal montage	1/50	1/50	1/50	1/50
q_p/q_i , Ratio, vertical montage	1/25	1/25	1/25	1/25
Pressure loss at q_p (bar)	0,08	0,02	0,08	0,04

q_p , q_s and q_i acc. to EN1434.

Values above (excluding start flow and pressure loss) shows the metrological properties according to the MID standards. The actual values of the meter exceeds the specified data.

Maximum allowed error

Flow range	Maximum allowed error
$q_p - q_s$	± 2%
$q_p - q_i$	± 3%

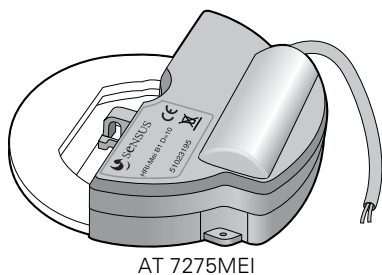
Sizing

The smallest meter that can take the specified continuous flow q_p should be chosen. Make sure that the pressure drop does not get too high. Short-term overload refers to less than 11 hour per day or 200 hours per year.

Accessories and options

Accessories:

A remote readout module combined with a pulse/data/M-bus/MiniBus-sensor (AT7275MEI...) alternatively optical encoder (AT7275PDY) see resp. product sheet.



AT 7275MEI

Installing

The meter can be mounted horizontally or vertically, though not with the display down. A straight line of at least 3 x DN is required in front of the meter. Behind the meter there is no straight line required. No stopping device should be placed near the meter. The system must be cleaned before mounting the the gauge. During commissioning, pressure shocks in the mains should be avoided.

Maintenance and spare parts

Control and auditing should be performed by a meter workshop that is accredited as an inspection unit. In this revision the wear parts are exchanged. Spare parts for this can be found in the separate spare parts list.

Marking

The meter is red with a grey plastic lid. The meter display is marked with SENSUS with q_p , year of manufacture, CE- and production number.

How to order

Art.No.	Dimensions (DN)	Length (mm)
AT 7170-50-200	50	200 (former WP)
AT 7170-50-270 (normal storage)	50	270 (former WS)
AT 7170-65-200	65	200 (former WP)
AT 7170-65-300 (normal storage)	65	300 (former WS)
AT 7170-80-225	80	225 (former WP)
AT 7170-80-300 (normal storage)	80	300 (former WS)
AT 7170-100-250	100	250 (former WP)
AT 7170-100-360 (normal storage)	100	360 (former WS)
For DN 150, choose AT 7169A150R100		