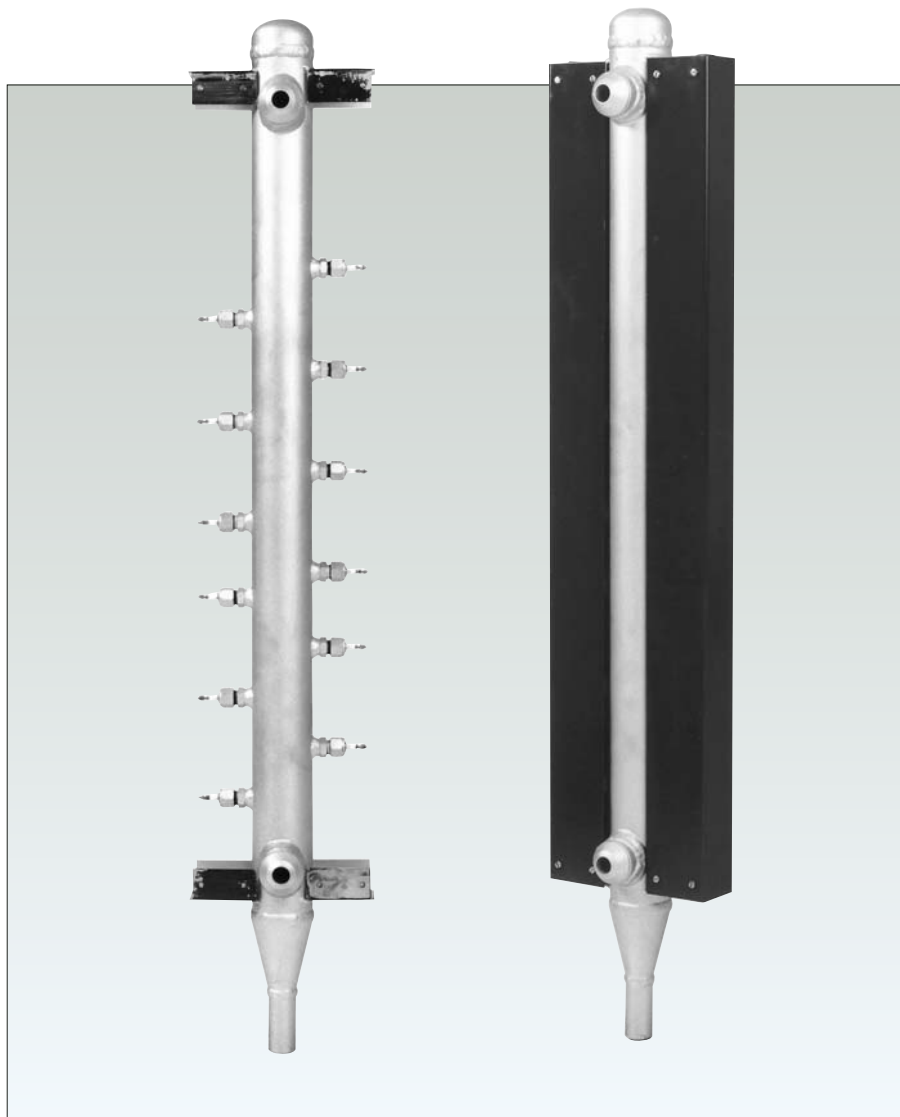


Narvik-Yarway covers requirements for Level Gauges and Electronic Water Level Systems with a wide range of models, sizes and materials to satisfy all the specifications of the Power and Process Industry.

Features

- Wide variety of Boiler Alarm, Control and Trip Equipment in single or combined electronic Modules for Low-, Medium, and High pressure. Detection of water is based on the difference in Conductivity between water and steam.
- Construction of Electrode Columns accordance specification.
- Pressure class and connections:
 - ASME/ANSI B16.34 class 150 to 1500
 - DIN 2401 class PN 16 to 250
 - Flanged to ANSI 1/2" to 4"
 - Flanged to DIN DN 15 and 100
 - Buttweld connections to ANSI B16.25 or DIN 2559
- Materials:
 - ASTM A106 Gr.B
 - Other materials upon request.



Narvik-Yarway are constantly developing their range of products, therefore additional models, sizes, and materials outside the standard range can be offered. Please contact Narvik-Yarway with your requirements.



Technical data

Direct- and Side mounted installation.
Column length: as specified.
Construction in accordance with ASME and TRD.

Main applications

Boiler drums;
Blow-down tanks;
Deaerators and
Feedwater heaters.

Introduction

The Narvik - Yarway Electronic Level Equipment detailed in this brochure is used predominantly on steam - and hot water boilers, installed in industrial plants.

The equipment package typically consists of the following components:

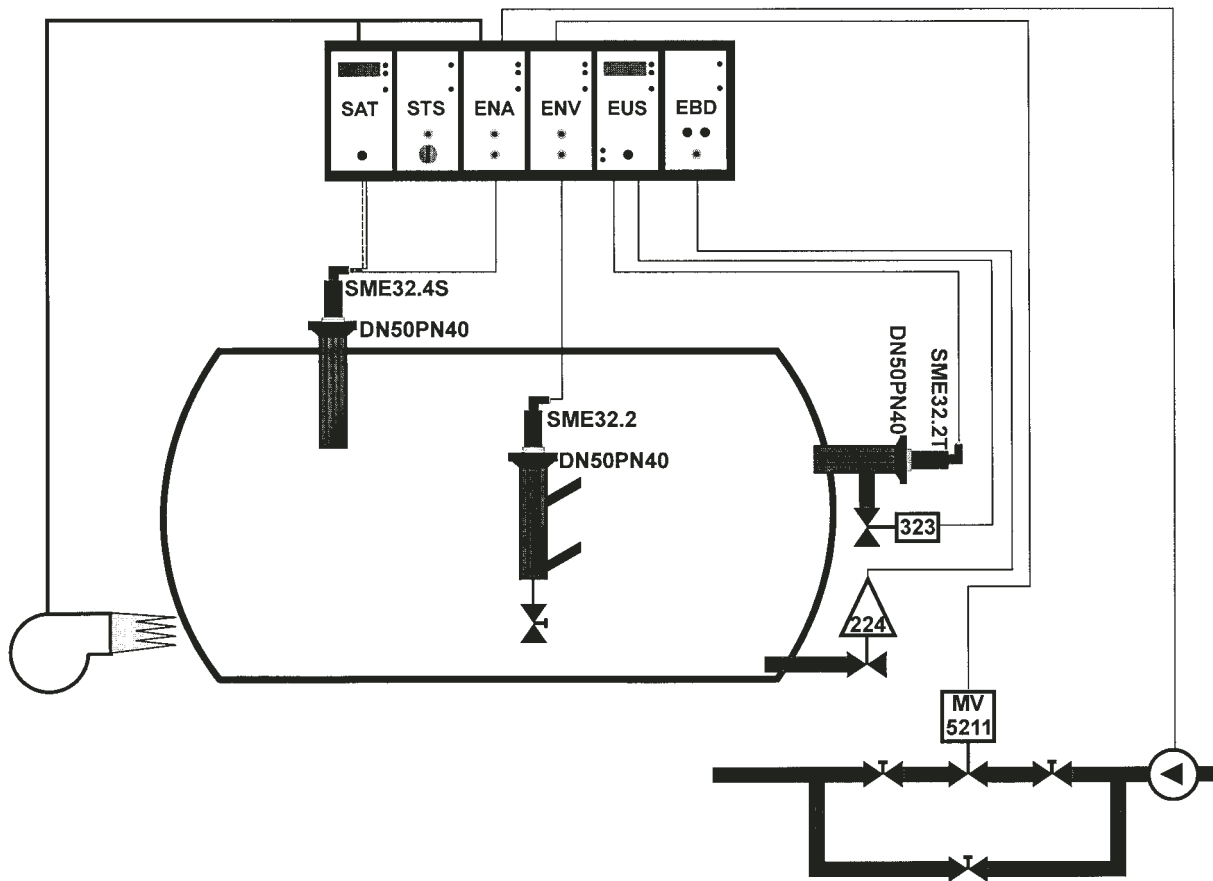
- Electrode column.
- Electrodes.
- Cables.
- Amplifier / modules.

The principle of operation is based on the difference in conductivity between steam and water. Standard equipment is suitable for conductivities of 50 $\mu\text{s}/\text{cm}$ at 25°C (lower values down to 5 $\mu\text{s}/\text{cm}$ upon request).

The Narvik - Yarway range of Electronic Level Equipment is manufactured by specialists in Scandinavia, having more than 25 years of experience in this field.

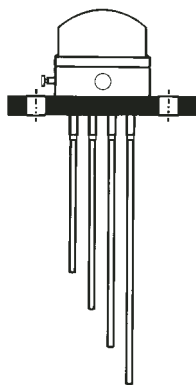
More than 18.000 units in both marine and industrial plants have been installed during that time.

Installation example

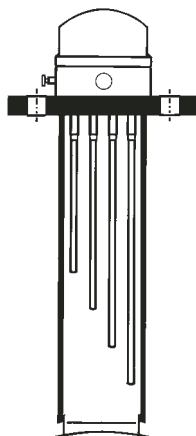


- DN 50 - PN40 : Electrode stand for SME 32 with flange: DN 50 to DN 100 / PN 16 to PN 100
SME 32 : Electrode / probe for High - / Low level Alarms
SME 32. 2S : Electrode / probe for Safety - / Self checking Control System
SME 32. 2T : Electrode / probe for measuring of Conductivity
SME 32. 3S : Electrode / probe for Safety Device and High level Alarm
SME 32. 4S : Electrode / probe for Safety Device and Pump Control

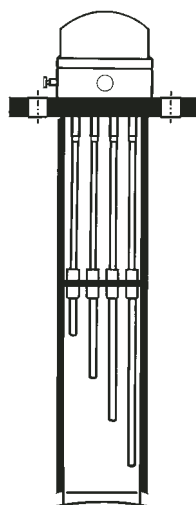
Electrode columns



Type A



Type B



Type C

Table 1 - Dimensions (in inch/mm)

| Pressure | Dimensions | DN 2" | DN 2½" | DN 3" | DN 4" |
|------------------|--------------|--------|--------|--------|--------|
| | | DN 50 | DN 65 | DN 80 | DN 100 |
| Class 150 | Outside dia. | 6.00 | 7.00 | 7.50 | 9.00 |
| | Bolt circle | 4.75 | 5.50 | 6.00 | 7.50 |
| | Bolt holes | 0.75 | 0.75 | 0.75 | 0.75 |
| | Qty. bolts | 4 | 4 | 4 | 8 |
| PN 16 | Outside dia. | 165 mm | 185 mm | 200 mm | 220 mm |
| | Bolt circle | 125 mm | 145 mm | 160 mm | 180 mm |
| | Bolt holes | 18 mm | 18 mm | 18 mm | 18 mm |
| | Qty. bolts | 4 | 4 | 8 | 8 |
| Class 300 | Outside dia. | 6.50 | 7.50 | 8.25 | 10.00 |
| | Bolt circle | 5.00 | 5.88 | 6.62 | 7.88 |
| | Bolt holes | 0.75 | 0.88 | 0.88 | 0.88 |
| | Qty. bolts | 8 | 8 | 8 | 8 |
| PN 40 | Outside dia. | 165 mm | 185 mm | 200 mm | 235 mm |
| | Bolt circle | 125 mm | 145 mm | 160 mm | 190 mm |
| | Bolt holes | 18 mm | 18 mm | 18 mm | 23 mm |
| | Qty. bolts | 4 | 8 | 8 | 8 |
| Class 600 | Outside dia. | 6.50 | 7.50 | 8.25 | 10.75 |
| | Bolts circle | 5.00 | 5.88 | 6.62 | 8.50 |
| | Bolts holes | 0.75 | 0.88 | 0.88 | 1.00 |
| | Qty. bolts | 8 | 8 | 8 | 8 |
| PN 64 | Outside dia. | 180 mm | 205 mm | 215 mm | 250 mm |
| | Bolt circle | 135 mm | 160 mm | 170 mm | 200 mm |
| | Bolt holes | 23 mm | 23 mm | 23 mm | 27 mm |
| | Qty. bolts | 4 | 8 | 8 | 8 |
| PN 100 | Outside dia. | 195 mm | 220 mm | 230 mm | 265 mm |
| | Bolt circle | 145 mm | 170 mm | 180 mm | 210 mm |
| | Bolt holes | 27 mm | 27 mm | 27 mm | 30 mm |
| | Qty. bolts | 4 | 8 | 8 | 8 |

Pressure retaining components are available in accordance with either ASTM or DIN materials. Both welding - and welders procedures are qualified to STOOMWEZEN - ASME and TRD standards. Flange facing in accordance to ANSI B16. 5 or DIN 2401, BS and AFNOR NF E29-203 upon request.

Type A: is mainly used on steam boilers with separate electrode columns.

Type B: is normally installed directly onto boiler drums.

Type C: is identical to type B, but with internal guiding.

Spare parts:

Electrode cap : 004006 for Flange DN 50 – 65.
004007 for Flange DN 80 – 100.

Vibration stay : 004008 incl. Insulators.

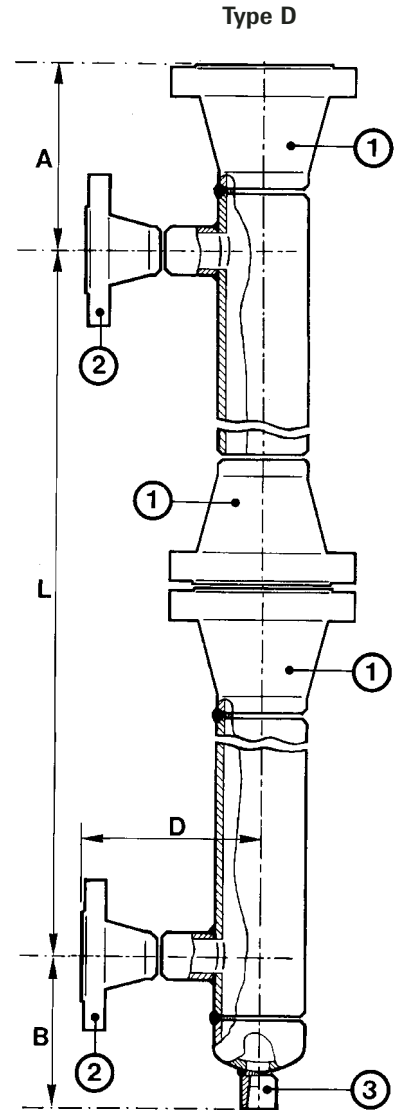
Splash protection plate : 004011 for 3" tube.

Note

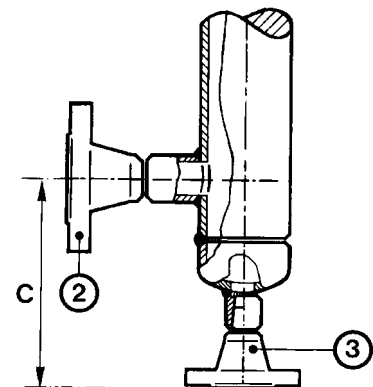
For materials and construction details, please consult Narvik - Yarway.

Table 2 - Dimensions

| Pressure | DN diameter | | Length A in mm | Length B in mm | Length C in mm | Length D in mm |
|-----------------|-------------|-------|-------------------|-------------------|-------------------|-------------------|
| | ① ② | ③ | | | | |
| ANSI Class 150 | 3"/2" | 1/2" | 140 | 142 | 190 | 169 |
| | | 3/4" | | | 195 | |
| | | 1" | | | 199 | |
| | 4"/2" | 1/2" | 146 | 167 | 216 | 182 |
| | | 3/4" | | | 220 | |
| | | 1" | | | 224 | |
| PN 16 | 80/50 | 15 | 120 | 134 | 169 | 154 |
| | | 20/25 | | | 172 | |
| | 100/25 | 15 | 122 | 140 | 175 | 164 |
| ANSI Class 300 | 3"/2" | 1/2" | 150 | 142 | 195 | 175 |
| | | 3/4" | | | 200 | |
| | | 1" | | | 205 | |
| | 4"/2" | 1/2" | 156 | 167 | 220 | 188 |
| | | 3/4" | | | 225 | |
| | | 1" | | | 230 | |
| PN 40 | 80/50 | 15 | 128 | 134 | 172 | 157 |
| | | 20/25 | | | 175 | |
| | 100/50 | 15 | 134 | 140 | 178 | 167 |
| ANSI Class 600 | 3"/2" | 1/2" | 153 | 142 | 195 | 179 |
| | | 3/4" | | | 200 | |
| | | 1" | | | 205 | |
| | 4"/2" | 1/2" | 172 | 167 | 220 | 192 |
| | | 3/4" | | | 225 | |
| | | 1" | | | 230 | |
| PN 64 | 80/50 | 15 | 142 | 140 | 185 | 171 |
| | | 25 | | | 198 | |
| | 100/50 | 15 | 148 | 143 | 188 | 171 |
| PN 100 | 80/50 | 15 | 148 | 143 | 188 | 177 |
| | | 25 | | | 201 | |
| | 100/50 | 15 | 160 | 147 | 192 | 187 |
| ANSI Class 900 | 3"/2" | 1/2" | 172 | 142 | 203 | 207 |
| | | 3/4" | | | 213 | |
| | | 1" | | | 216 | |
| | 4"/2" | 1/2" | 185 | 167 | 228 | 220 |
| | | 3/4" | | | 238 | |
| | | 1" | | | 241 | |
| PN 160 | 80/50 | 15 | 156 | 147 | 192 | 184 |
| | | 25 | | | 205 | |
| | 100/50 | 15 | 170 | 159 | 204 | 194 |
| ANSI Class 1500 | 3"/2" | 1/2" | 188 | 142 | 203 | 207 |
| | | 3/4" | | | 213 | |
| | | 1" | | | 216 | |
| | 4"/2" | 1/2" | 194 | 167 | 228 | 220 |
| | | 3/4" | | | 238 | |
| | | 1" | | | 241 | |
| PN 250 | 80/50 | 15 | 172 | 167 | 227 | 194 |
| | | 25 | | | 232 | |
| | 100/50 | 15 | 190 | 184 | 244 | 204 |
| | | 25 | | | 249 | |

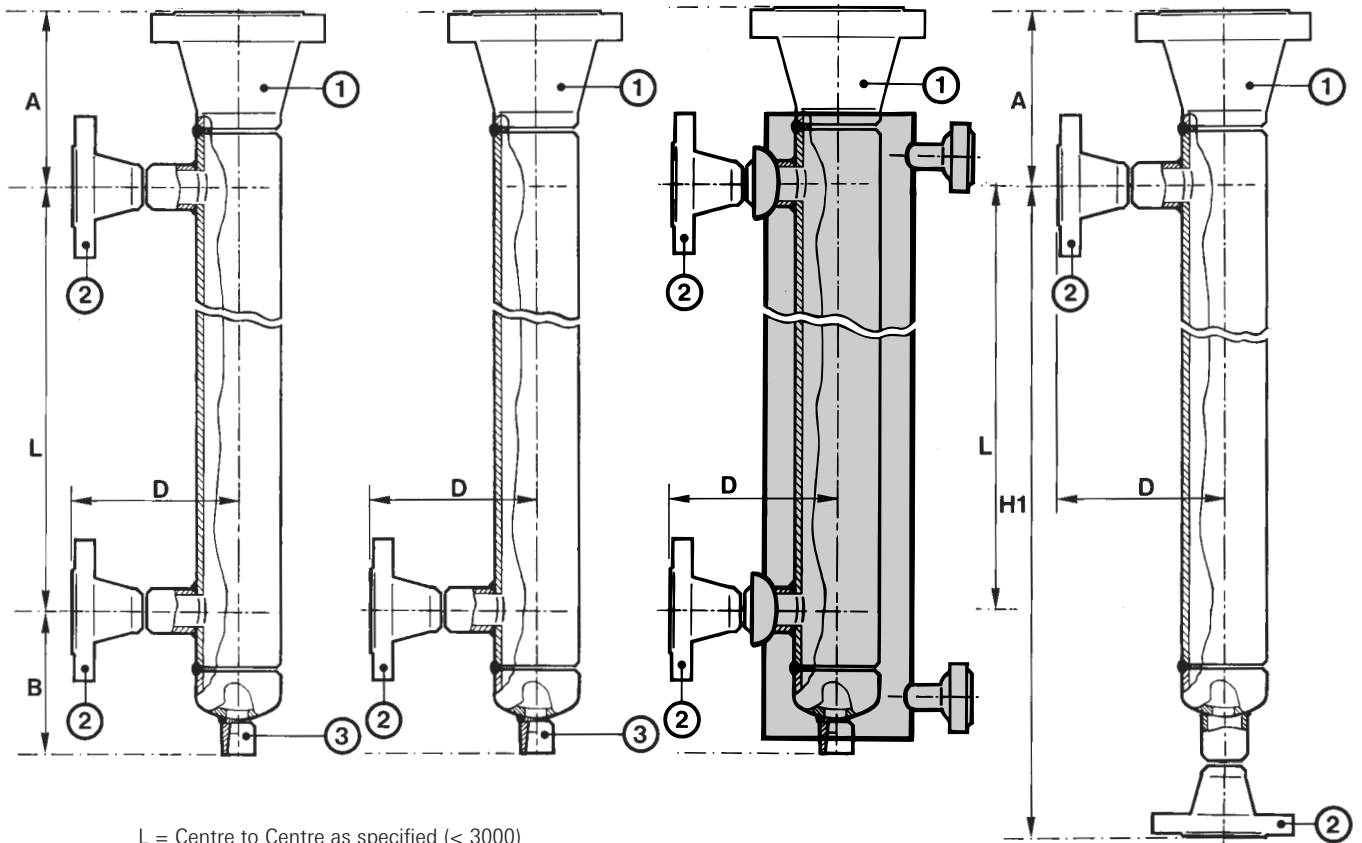


L = Centre to Centre
as specified
(< 3000)

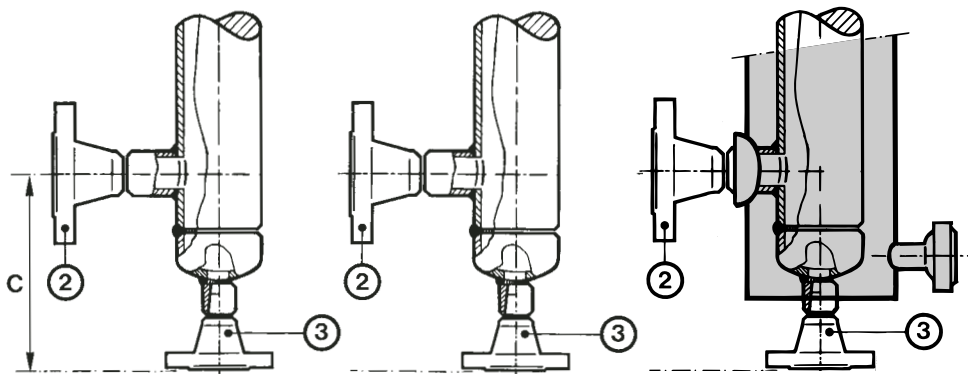


"Side - Side"

Type D



L = Centre to Centre as specified (< 3000)



"Side - Side"

"Upper - Side"

"Steam Heating"

"Side - Bottom"

Notes

- Column material: ASTM A106 Gr. B.
- Other materials upon request.
- Pressure retaining components are available in accordance with either ASTM or DIN materials. Both welding - and welders procedures are qualified to STOOMWEZEN - ASME and TRD standards. Flange facing in accordance to ANSI B16.5 or DIN 2401, BS and AFNOR NF E29-203 upon request.
- Type D: is normally supplied with flanges for installation directly onto boiler drums.
- For materials and construction details, please consult Narvik - Yarway.

Electronic Level Equipment for Boilers

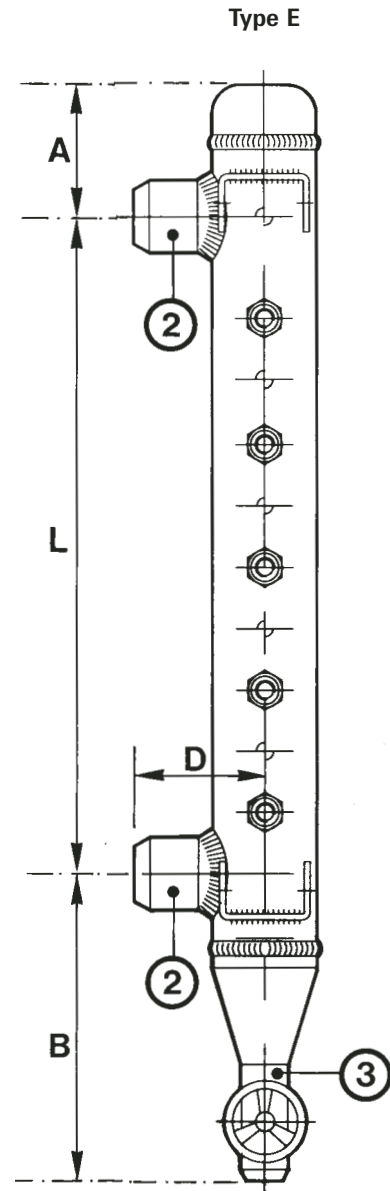
Electrode columns

Table 3 - Dimensions (in inch/mm)

| Pressure | DN diameter | | Length | Length | Length |
|------------|-------------|----|------------|------------|------------|
| | ② | ③ | A in mm | B in mm | D in mm |
| Class 600 | 1" | | | | 82 |
| | 1½" | ¾" | 140 | 430 | 88 |
| | 2" | | | | 93 |
| PN 64 | 25 | | | | 84 |
| | 40 | 20 | 140 | 430 | 90 |
| | 50 | | | | 97 |
| PN 100 | 25 | | | | 84 |
| | 40 | 20 | 140 | 430 | 90 |
| | 50 | | | | 97 |
| Class 900 | 1" | | | | 82 |
| | 1½" | ¾" | 140 | 430 | 88 |
| | 2" | | | | 93 |
| PN 160 | 25 | | | | 84 |
| | 40 | 20 | 140 | 430 | 90 |
| | 50 | | | | 97 |
| Class 1500 | 1" | | | | 82 |
| | 1½" | ¾" | 140 | 430 | 88 |
| | 2" | | | | 93 |
| PN 250 | 25 | | | | 84 |
| | 40 | 20 | 140 | 430 | 90 |
| | 50 | | | | 97 |
| Class 2500 | 1" | | | | 82 |
| | 1½" | ¾" | 140 | 430 | 88 |
| | 2" | | | | 93 |
| PN 320 | 25 | | | | 84 |
| | 40 | 20 | 140 | 430 | 90 |
| | 50 | | | | 97 |

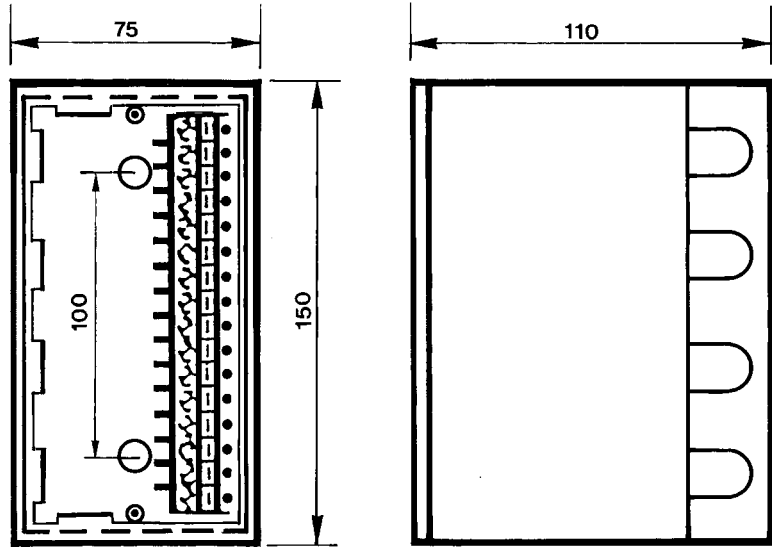
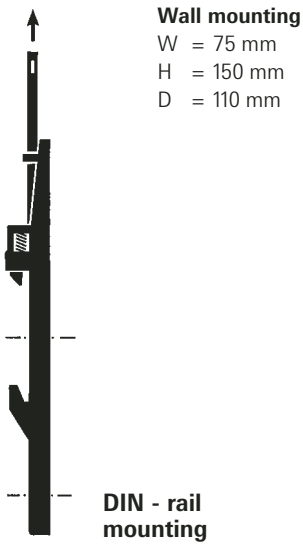
Notes

- Column material: ASTM A106 Gr. B.
- 2½" or DN 65 sched. 160
- Other materials upon request.
- Pressure retaining components are available in accordance with either ASTM or DIN materials. Both welding - and welders procedures are qualified to STOOMWEZEN - ASME and TRD standards. Flange facing in accordance to ANSI B16.5 or DIN 2401, BS and AFNOR NF E29-203 upon request.
- Type E: is identical to type D, but mainly used for High pressure applications.
- For materials and construction details, please consult Narvik - Yarway.



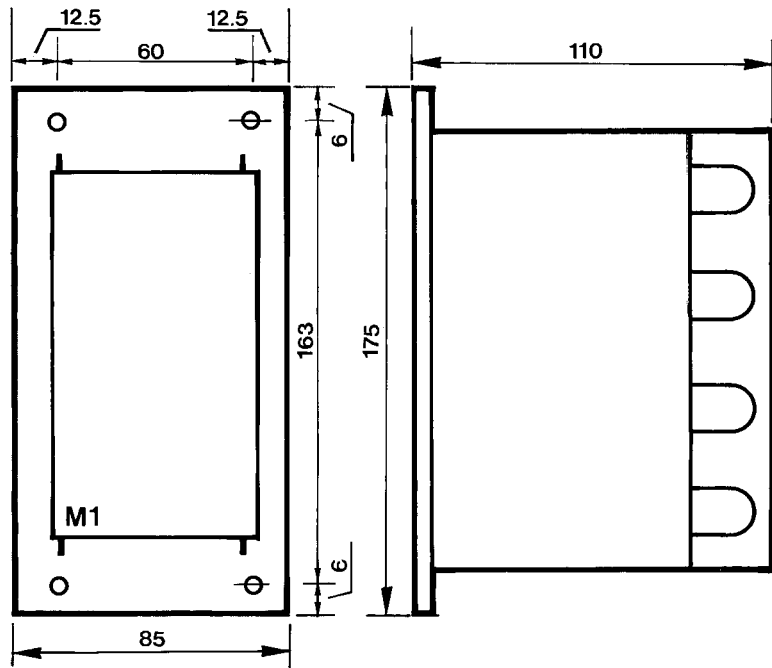
L = Centre to Centre as specified

Amplifiers / Modules are available as plug - in type for either Panel, Wall and DIN - rail mounting, with a standard protection class of IP 42.



Panel Mounting (M1)

| Front | Cut - out |
|------------|------------|
| W = 85 mm | W = 76 mm |
| H = 170 mm | H = 152 mm |
| D = 110 mm | |



Panel Mounting (M2)

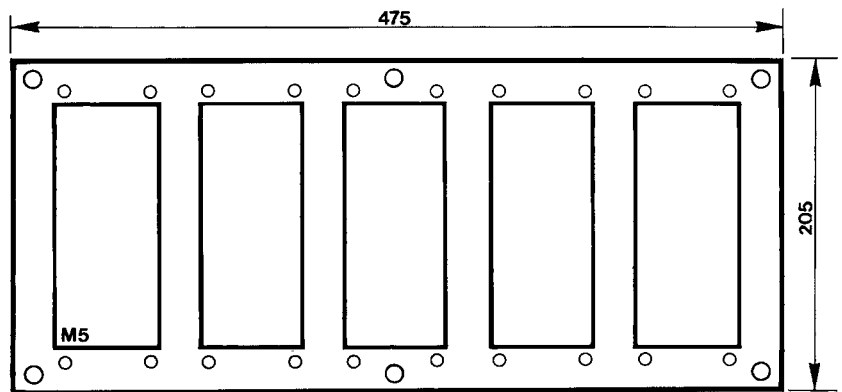
| Front | Cut - out |
|------------|------------|
| W = 205 mm | W = 170 mm |
| H = 205 mm | H = 150 mm |
| D = 112 mm | |

Panel Mounting (M3)

| Front | Cut - out |
|------------|------------|
| W = 295 mm | W = 260 mm |
| H = 205 mm | H = 150 mm |
| D = 112 mm | |

Panel Mounting (M4)

| Front | Cut - out |
|------------|------------|
| W = 385 mm | W = 350 mm |
| H = 205 mm | H = 150 mm |
| D = 112 mm | |



Panel Mounting (M5)

| Front | Cut - out |
|------------|------------|
| W = 475 mm | W = 440 mm |
| H = 205 mm | H = 150 mm |
| D = 112 mm | |

Notes

Please consult Narvik - Yarway for further information.
All data supplied are subject to changes without prior / notice.