

MINIBOX 21 Applications

1 Application

The INTERTEC MINIBOX is well suited for space-saving and easy installation of instruments. The following examples represent a selection of proven installations.

2 Special Features

Flexible mounting rail systems allow for horizontal or vertical arrangement for direct mounting or remote installation.



3 Application Examples

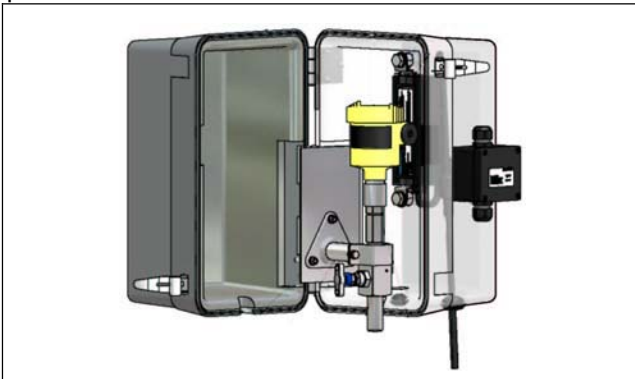
Application No. 1

RMT3051C installed on mounting bridge (DS4000)



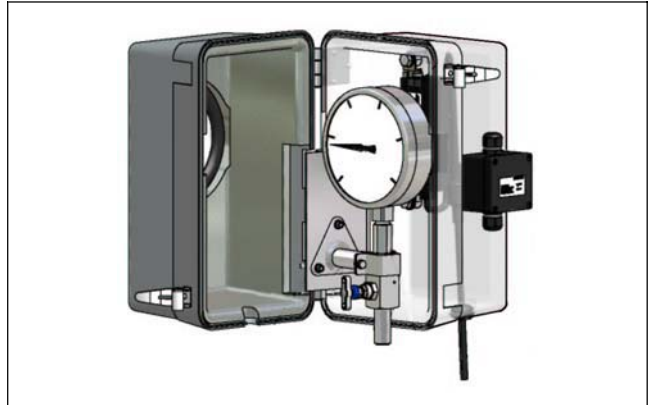
Application No. 2

Pressure transmitter mounted on a mounting plate with double row of hinges (DSL) and freeze-protection heater



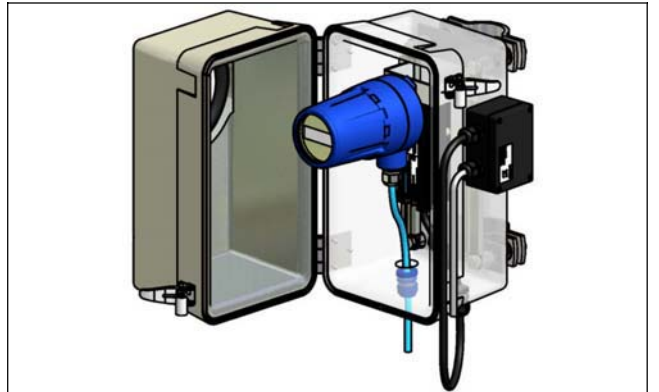
Application No. 3

Pressure gauge mounted on a mounting plate with double row of hinges (DSL) and freeze-protection heater



Application No. 4

Temperature transmitter/ field indicator with support bracket mounted on C-rails and freeze-protection heater



Application No. 5

Direct mounting at the process flange with support bracket and double row of hinges (DSL), (DS 3006)



MINIBOX 21 Applications

Application No. 6 - Direct Mounting

Heated pressure measuring point with special ball valve and swivel flange (SAFELINK DS3002)
Heater: MINITHERM BLOCK-Heater
MINIBOX can be swivelled in any direction



Application No. 9

BT-1 for dP-Transmitter and 3-way manifold, with MINITHERM and TAE (DS 4002)



Application No. 10 - Direct Mounting

Heated DP-measuring point on orifice with 2 special ball valves



Application No. 7

Pressure measurement with shut-off valve on mounting bridge,
Heater: MINITHERM BLOCK-Heater (DS 4001)



Application No. 8

Heated 3-way manifold on DP transmitter (external transmitter head)



Application No. 11

Mounting with RS21 on 2" pipe stand



DIABOX Typical Installations

1 Application

Due to the diagonal split, the DIABOXES are particularly well suited for bottom or rear wall mounting of instruments and equipment, as shown in the following examples.

2 Special Features

Mounting accessories, manifolds and heating elements, specially designed for the Diabox series, allow for the use of a variety of standard installations ("SAFE LINKS") that are pre-installed at the factory.

There is also the possibility of providing individually designed mounting solutions, suited for the customer's specific application.

The large variety of components in the mounting system leaves nothing to be desired.

For a detailed description of the various mounting components available please refer to data sheet Kd282-x.

Even though the most varied mounting applications are possible, we recommend to use our factory pre-installed "SAFE LINKS", which may help to avoid errors in ordering and product configuration.

For further details on INTERTEC SAFE LINKS see catalogue section "SAFE LINK Complete Solutions for Standardised Instrument Mounting".

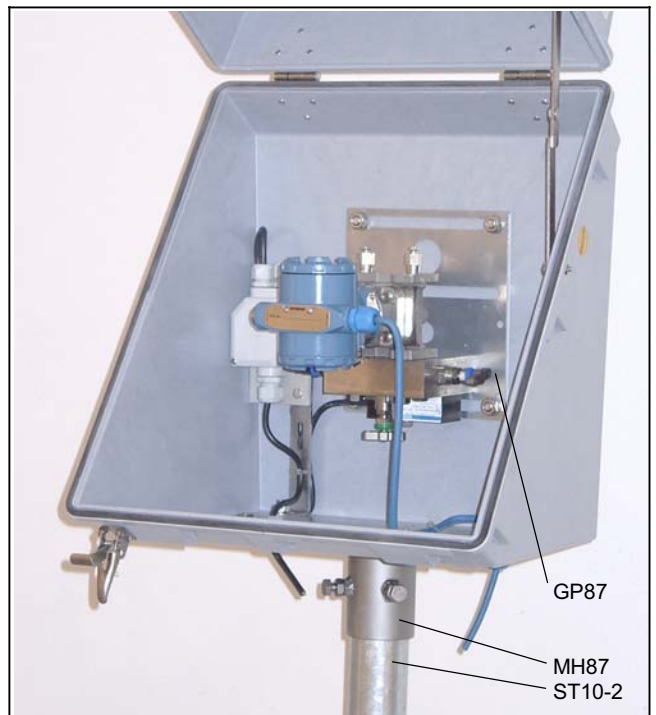
Application No. 1

Bottom mounting of fluid measuring equipment



Application No. 2

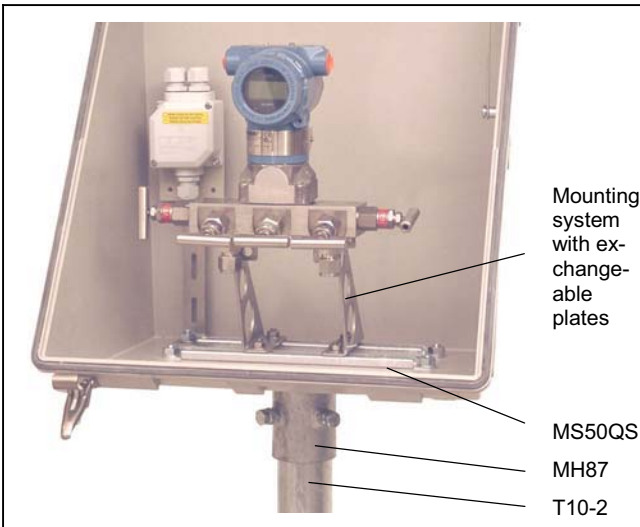
Rear wall mounting of gas measuring equipment



DIABOX Typical Installations

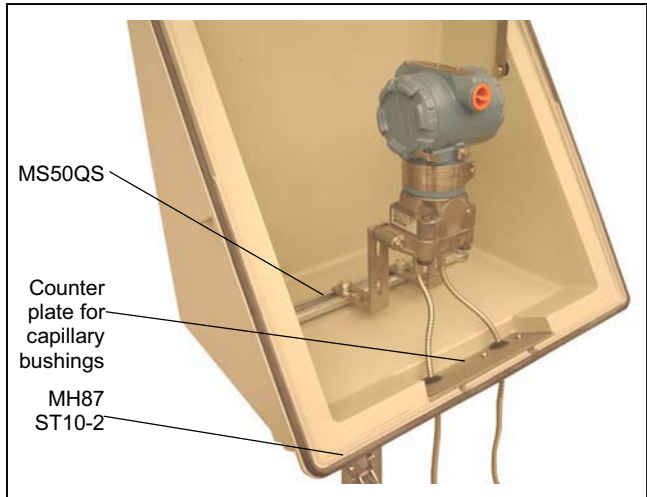
Application No. 3

Installation with transmitter and coplanar manifold mounted to an installation system with exchangeable plate.



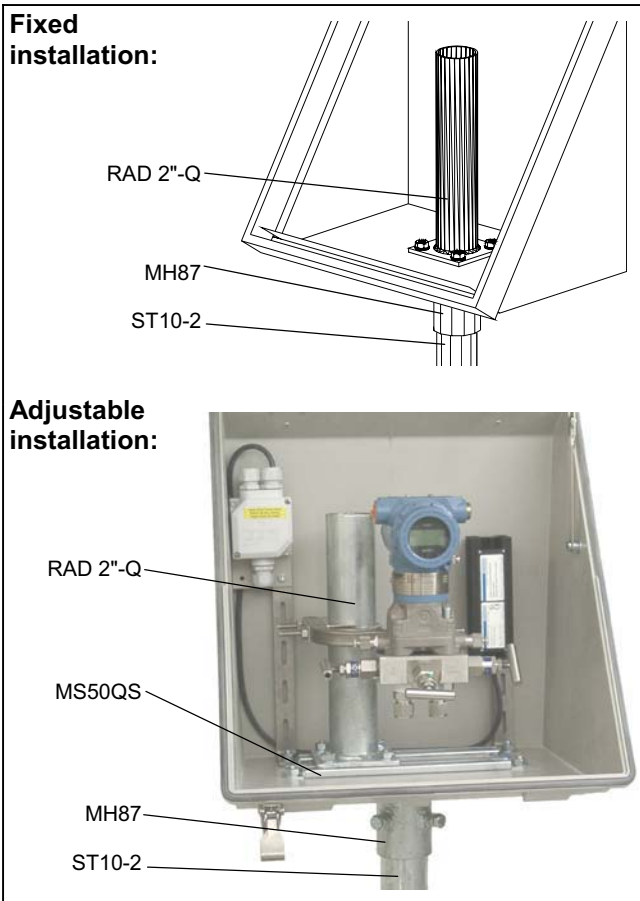
Application No. 5

Installation with Capillary Transmitter



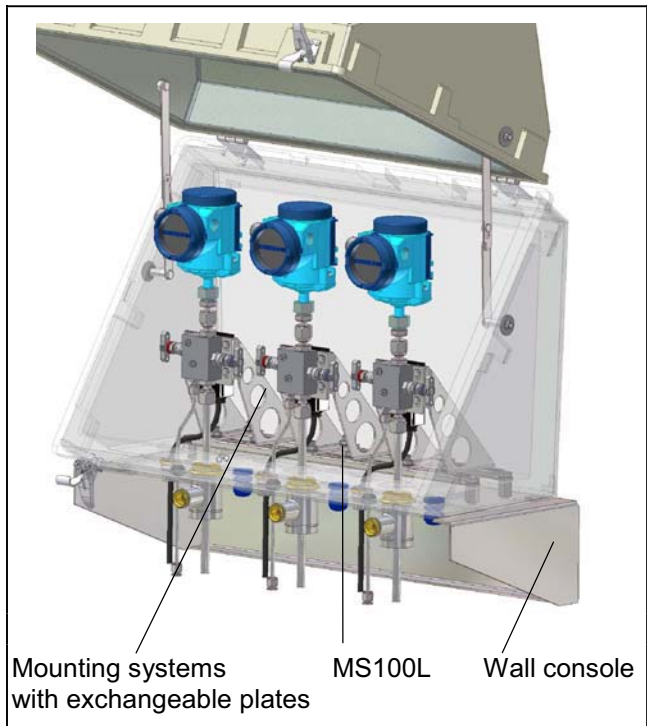
Application No. 4

Installation with transmitter and coplanar manifold mounted to a pipe adapter



Application No. 6

Multiple installation in DIABOX 137



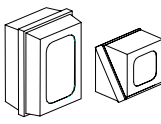
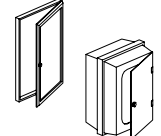
Technical Data for Instrument Enclosures

Material	Hot-pressed glassfibre reinforced polyester (GRP, SMC)		
	Normal	option "GO"	Standard
Colour	Light grey RAL 7032	RAL 7001	
Antistatic	No	Antistatic to avoid electrostatic charges	DIN EN IEC 60079-0
Specific volume resistivity	$>10^{14}$ Ohm/ cm	$>10^6$ Ohm/ cm	IEC 60093
Specific surface resistance	$<10^{11}$ Ohm	$<10^9$ Ohm	IEC 60093
Comparative tracking index	CTI 600	CTI600	IEC 60112
Dielectric strength	240 kV/ cm	$>2,5$ kV/ cm	IEC 60243.1
Density	1,7 g/ cm ³	1,8 g/ cm ³	ISO1183
Coefficient of linear thermal expansion	9×10^{-6} m/mK	12×10^{-6} m/mK	ISO 11359-2
Constant operating temperature	- 60° ...+120° C		--
Glass transition temperature	170 °C		ISO 11357-2
Protection degree	Standard IP 65 / NEMA 4x		NEMA IEC EN 60529
Fire behaviour	Material class B2, (self- extinguishing according to small burner test)		DIN 4102-1 UL 94 V-0
Resistance to glow heat	Step BH 2 \leq 10		IEC 60707-3
Bending strength	155 MPa		ISO 14125
Flexural modulus of elasticity	10 GPa		ISO 14125
Impact resistance	72 kJ/ m ²		ISO 179
Thermal conductivity	0,23 W/ m · K		--
UV resistance	Yes		--
Resistance to termites and fungi	Resistant		--
Approval by Germanischer Lloyd	for unlimited use within the rules of Germanischer Lloyd (fire test according to chapter 4, section 1.A.4.3.1, volume II 1973 passed)		--

Deviating Technical Data for Options

Additional insulation	Internal polypropylene liner (arctic PP), internal aluminium foil (arctic Alu), with PU-foam infill	
Constant operating temperature	-100°C...+120°C	
Constant operating temperature with silicone foam sealing	-60°C...+160°C	
Constant operating temperature of the polyester	-100°C...+160°C	
Protection degree	IP 66 and IP 67 upon request	NEMA IEC EN 60529
EExp Pressurization	Enclosures can be prepared for overpressurization (with test certificate) and, upon request, are available with control unit	EN 50016

Product Overview Enclosure Options and Configurations 2007

Sketch	Type Designation	Description	Dimensions
Material Options			
	GO	antistatic to avoid electrostatic charges according to DIN EN IEC 60079-0	
Arctic – Insulation			
	arctic PP	Insulation - PU-foam – PP (polypropylene) liner in MULTIBOX and DIABOX in MINIBOX	
	arctic Alu	Insulation - PU-foam – Aluminium foil (in combination with material option "GO") in MULTIBOX and DIABOX in UNIBOX (top only) in MINIBOX	
Designs & Configurations (Order Suffix)			Material
	DF	Lid propstay (mounted)	Plated steel
	DFVA		Stainless steel
	DFGF	Lid propstay, gas strut (mounted)	Cylinder: coated Rod: chrome plated
	EEx p	Preparation for purge and pressurization systems to EN 50016 for MULTIBOX and DIABOX (incl. additional hinge and clasps) Pressure test with report	
	IP 66	Higher protection degree for MULTIBOX and DIABOX	
	IP 67		
	IP 68		
Windows and Doors			
	FA	Window	Plexiglass (Acrylic)
	FS		Safety glass
	FRS	Round window (Ø150mm)	Safety glass
	ST...	Hinged door for MULTIBOX	Plexiglass (Acrylic) GRP
	FAF	Aluminium framed window with or without enclosure cut-out	Macrolon

* Stainless steel upon request Further installation configurations and accessories upon request

Subject to technical changes and printing errors. Not all the options can be combined.

Place of performance is Neustadt on the Donau, Germany and jurisdiction is Ingolstadt on the Donau, Germany.

Product Overview General Accessories for Enclosures

2007

Sketch	Type Designation	Description	Dimensions
Accessories and General Mounting Material			
Grommets			
	WDD 6/16	Grommets for pipe Ø 6mm	EPDM
	WDD 8/20	for pipe Ø 8mm	
	WDD 12/25	for pipe Ø 12mm	
	WDD 12/28	for pipe Ø 12mm	
	WDD 16/32	for pipe Ø 16mm	
	WDD 21/30	for pipe Ø 21mm	
	WDD 16/20 M	Grommets with membrane for pipe Ø 16mm	M = Membrane
WDD 16/25 M	mainly for UNIBOX for pipe Ø 16mm		
Labyrinth vent (1 set = 2 pieces)			
	LF	Option: Bug mesh	Plastic
	SM	Sintered metal + cable gland Pg 16	
	ES	Drain M25 x 1.5 / IP 65	
ISOPASS			
	ISOPASS 1016 (-D)	Insulation adapter for tubing into MULTIBOX and DIABOX (suffix -D = for Diabox)	Rigid PU-foam
	ISOPASS 1018 (-D)		
	ISOPASS 1320 (-D)		
T-Bolts and Extension Nuts			
	HK M10 x 15	T-bolts with hexagonal nuts	Plated steel
	HK M10 x 20; x30		Plated steel *
	HK M10 x 40; x50		
	HK M8 x 20		Plated steel
	HK M8 x 30		
	HK M8 x 50	Plated steel	
	HK M6 x 30	Plated steel	
	VM M10 x 30	Extension nuts	Plated steel *
Locking Accessories			
	VS	Padlock for hinged enclosures with lockable clasp	Steel / Brass
	SH	Turning lever for exchangeable half-profile cylinders, mounted	Plastic
	PZ	Half-profile cylinder	Chromed bronze
Special Tools			
	LKS...16---	Hole saws for Ø 16,20,25,29,30,32 mm	
		Shank with center drill	
		for hole saws Ø 16 – 30 mm	
		for hole saws Ø 32 mm	
		Step drill for Ø 12 – 20 mm	
		Ø 30 mm	
		Ø 30 – 40 mm	
	SW-F	Special tools for glazing of windows	
	SW-WDD	Special tools for mounting of grommets Type WDD	
Installation / Cut-outs / Special Designs			

MULTIBOX Instrument Enclosures - summary of available versions

Hot-pressed glassfibre reinforced polyester material (GRP)
 Two-part construction: Instrument mounting is possible in either part, box can be positioned vertically or horizontally,
 Space-saving storage possible through stacking supports on corners
 Sample tested by German Lloyd
 Fire resistant and self-extinguishing
 4 mounting elements, stainless-steel (for fixing on mounting rails or plates etc.
 Colour: light grey (RAL 7032), UV resistant
 Protection standard: IP 65 / Nema 4X EPDM gasket

Standard version

SV 4 stainless steel clasps, removable lid

Variations

SE 2 hinges, 2 clasp stainless-steel, may be mounted on long or short side

DF lid propstay, in galvanized steel, fitted

DFVA lid propstay, in stainless steel, fitted

DFGF lid propstay, gas compression spring (on request)

FA.. acrylglass window

FS.. safety glass window

ST.. hinged door made of GRP

STA.. hinged door of acrylic glass

arctic-PP insulation PU-foam/ PP lining internal surface insulated, not stackable

arctic-Alu insulation PU-foam/Aluminium foil (as GO version)

GO antistatic to avoid electrostatic charges according to EN IEC 60079-0

(Ex)p- preparation for pressurised acc. to EN 50016, PTB No. Ex-84/1118X

increased Protection class

IP 66/67 or IP 68 on request

Accessories

All necessary mounting accessories,; mounting bars, 2" pipe cuffs, etc. See relevant data-sheets. - 19" frames, fixed or hinged
 Heating: Ex., electrical, steam or hot water.-Assembly as instructed

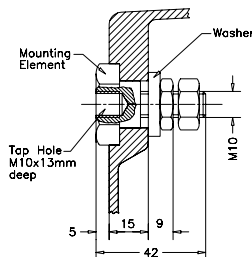
Mounting Directions

Insert the mounting elements (designed to allow for both external mounting of the enclosure and for installation of internal equipment) into the hexagon recesses in the enclosure part intended for instrument mounting, i.e. either in the male (TE) or female (TU) part of the enclosure.

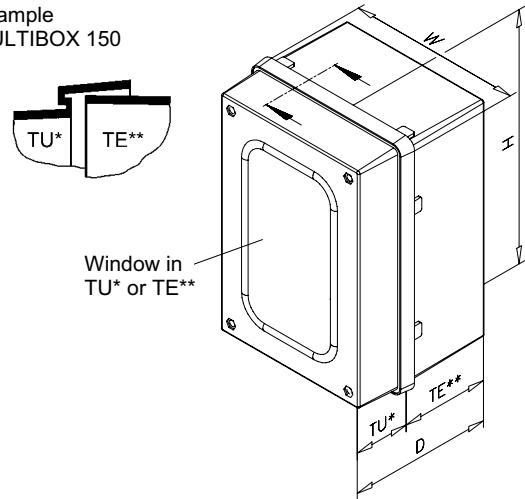
These mounting elements provide an internal male extension (M10) to mount rails or mounting plates etc. and a female thread (M10) outside to mount the box.

If length of male extension M10 doesn't suffice turn mounting element -female thread inside- and fasten mounting accessories with a screw M10. Remaining recesses may be closed by supplied polypropylene plugs.

SE Version: The hinge bolts are supplied loose, so that the door can be hung left or right, top or bottom as circumstances require. A support for top-hinged door is available. (see illus. in type summary sheet)



Example MULTIBOX 150



Wall thickness = 3,5mm

* TU (female), as flat or deep part of the enclosure

** TE (male), as flat or deep part of the enclosure

Type	height H mm	widht W mm	depth D mm	female (TU) mm	male (TE) mm
25	485	385	240	look at Datasheet Kd121 - Kd128	
48			380		
60	640	440	250		
70			340		
100			430		
80	750	520	250		
150			430		
170			480		

SV	4 stainless steel clasps (standard)
SE	2 stainless steel clasps a. 2 stainl. st. Hinges
FA	Acrylglass window
FS	Safetyglass window
TU/TE	Window position in part male or female
ST	Extra Fibreglass reinforced polyester door (not for Type 25 and 48)
STA	Hinged door of acrylic glass
arctic-PP	Polypropylene -lining
arctic-Alu	Arctic- alu foil
GO	Special low surface resist.

150 SE FS TU - arctic-Alu GO
 (Typical part number)

MINIBOX 21 Transmitter Enclosure

Made of hot-pressed glassfibre reinforced polyester (GRP)
 Two-part construction: horizontal or vertical mounting possible
 Space-saving storage
 Approved by Germanischer Lloyd
 Hardly inflammable and self-extinguishing
 All metal parts in stainless steel

- Colour RAL 7032 light grey
- Weather-resistant
- Weight approx. 3 kg

Dimensions (approx.) H x W x D = 218 x 300 x 388mm

Heat transition coefficient K	without window	with window
Normal (without insulation)	1,8 W/K	1,9 W/K
arctic PP	0,6 W/K	0,7 W/K

Standard Design

- SE2** Standard without cut-outs with 2 hinges and-2 clasps

Optional Designs

- SV2** 2 Clasps
- SV4** 4 Clasps
- DSL** Double row of hinges with C-rail
- FS** Safety glass window \varnothing 150 mm

arctic Insulation

with PU-foam, not stackable one inside the other

- arctic PP** internal polypropylene lining
- arctic Alu** internal aluminium foil lining (for GO design)
- GO** antistatic design to avoid electrostatic charge accumulation to DIN EN IEC 60079-0

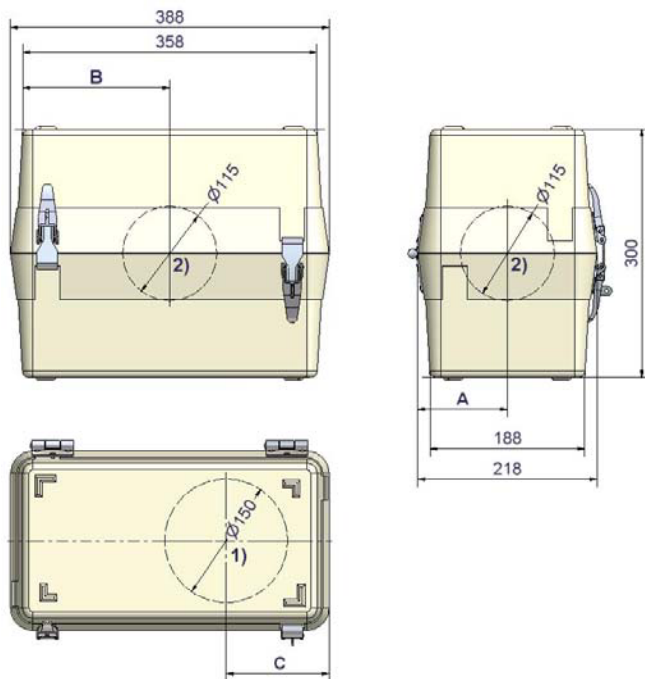
Cut-outs

- Cut-out for FLEXIPASS R
 - Cut-out for FLEXIPASS T
 - Window cut-out, \varnothing 150mm
C \geq 121mm
 - Special cut-out
- } Specify the dimensions and location of A and B (2) and/or C (1) with order placement

Accessories

- FLEXIPASS R** for piping, 40 mm thick
- FLEXIPASS T** for transmitter, 20 mm thick
- BT** Support bracket (internal), stainless steel (anodized aluminium upon request) for transmitter installation, adjustable
- BU** Support with C-rail
- BR** Support bracket (external), stainless steel for installation of MINIBOX on pipestand
- RS 21** Mounting bracket for 2" pipestand
- MS 50-QS** Mounting rail

Horizontal Mounting



Vertical Mounting

