VAK and VKK
Terminal boxes for sensors

- **Easy to assemble**
- **Different models for extending of connecting the load cell cables**
- **Use in hazardous zone and under extreme ambient conditions**
- **High resistance to aggressive media**
- **Optional overvoltage protection**

Application

The VKK 280x1 **cable extension boxes** are used to extend the load cell connection cable.
The load cells of a scale are interconnected in the VKK 280x4, VKK 280x6 and VKK 280x8 **interconnection junction boxes**. If high weighing accuracy is required, corner adjustment can be carried out using the built-in series resistors. Adjustment via jumpers is particularly simple and time-saving.
The VAK **terminal boxes** can be used, depending on the application, for simple extensions to the load cell connection and other sensor cables, but signals from multiple load cells can also be summarized (without corner adjustment).

Design

VAK/VKK terminal box, design in aluminium pressure casting, polyester or stainless steel.
All cable connections are screwed or clamped for easy installation in the junction box.

Polyester enclosures are equipped with plastic cable glands, aluminum and stainless steel housing have brass glands – optionally stainless steel glands.

Function

VKK 280x4 for 4 load cells, VKK 280x6 for 6 load cells and VKK 280x8 for 8 load cells are available as combination junction boxes. The terminal boxes are universally usable. Aluminum enclosures are preferably used at high ambient temperatures or in potentially explosive environments.
The polyester housings are primarily used if exposed to aggressive media or extreme environmental influences. The stainless steel housings are suitable for both areas of use. Load cells with 4-wire and 6-wire connections can be interconnected.
The terminal boxes VKK … have a potential equalization sheet for connecting the potential equalization between the load cells and the control electronics. For stainless steel terminal boxes, the corresponding cables are connected directly to the assembly points of the boxes. All boxes guarantee that the correct cable screen connection has been made. Terminal boxes for use in explosion hazard areas of category 2G/2D remain available.

Variants

Model	Order no. standard version	Order no. model ATEX 2G, 2D	IECEx *)	EAC *)
VKK 28004 Combination junction box for max. 4 load cells, polyester housing, spring clamp technology	V053953.B01	–	–	–
VKK 28014 Combination junction box for max. 4 load cells, aluminum housing, spring clamp technology	V053954.B01	V595988.B01	X	–
VKK 28024 Combination junction box for max. 4 load cells, stainless steel housing, spring clamp technology	V053955.B01	V512515.B01	X	–
VKK 28006 Combination junction box for max. 6 load cells, polyester housing, spring clamp technology	V076863.B01	–	–	–
VKK 28016 Combination junction box for max. 6 load cells, aluminum housing, spring clamp technology	–	V649089.B01	X	–
VKK 28026 Combination junction box for max. 6 load cells, stainless steel housing, spring clamp technology	–	V649085.B01	X	–
VKK 28008 Combination junction box for max. 8 load cells, polyester housing, integrated overvoltage protection, screw terminals	V041675.B01	–	–	–
VKK 28018 Combination junction box for max. 8 load cells, aluminum housing, screw terminals	–	V649086.B01	X	–
VKK 28028 Combination junction box for max. 8 load cells, stainless steel housing, screw terminals	–	V649088.B01	X	–
VBS 28011 Overvoltage protection module with aluminum housing, to protect the load cells or the evaluation electronics	V053969.B01	V053969.B51 (2D only)	–	–
VAK 28040 Terminal box with 14 terminals, extension 1 load cell + 2 sensors or 2 load cells without corner adjustment, polyester housing	V029901.B01	–	–	–
VAK 28040-2GD Terminal box with 14 terminals, extension 1 load cell + 2 sensors or 2 load cells without corner adjustment, aluminum housing	–	V583197.B01	X	X
VAK 28040-2GD-SS Terminal box with 14 terminals, extension 1 load cell + 2 sensors or 2 load cells without corner adjustment, stainless steel housing	–	V653900.B01	X	X
VAK 28080 Terminal box with 18 terminals, 4 load cells + 2 sensors (without corner adjustment), polyester housing	V583558.B01	–	–	–
VAK 28080-2GD Terminal box with 18 terminals, 4 load cells + 2 sensors (without corner adjustment), aluminum housing	–	V580943.B01	X	X
VAK 28080-2GD-SS Terminal box with 18 terminals, 4 load cells + 2 sensors (without corner adjustment), stainless steel housing	–	V654495.B01	X	X
VAK 28051 Terminal box with 16 terminals for connecting motors, polyester housing	V583561.B01	–	–	–

Model	Order no. standard version	Order no. model ATEX 2G, 2D	IECEx *)	EAC *)
VAK 28051-2GD Terminal box with 16 terminals for connecting motors, aluminum housing	–	V580776.B01	X	X
VAK 28051-2GD-SS Terminal box with 16 terminals for connecting motors, stainless steel housing	–	V654496.B01	X	X
VAK 20120 Terminal box with 15 terminals for connecting motors, incl. motor protection switch, polyester housing	F217763.03 **)	–	–	–
VAK 20120-2GD Terminal box with 15 terminals for connecting motors, incl. motor protection switch, aluminum housing	–	V657753.B01 (2D only) **)	X	X

*) X = possible; – = not possible

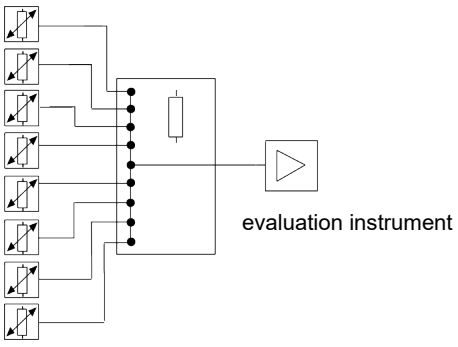
**) This order number refers to the standard case with no motor protection. The motor protection is included on an order-specific basis.

Options

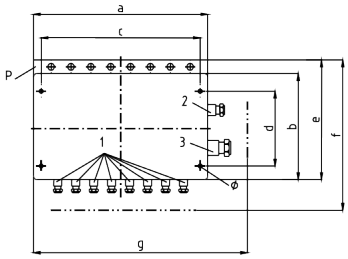
DBS6 Overvoltage protection module for retrofitting in a VKK 28006	D707465.01
VBS001 Overvoltage protection module without housing (printed circuit board)	V039944.B01

Terminal boxes

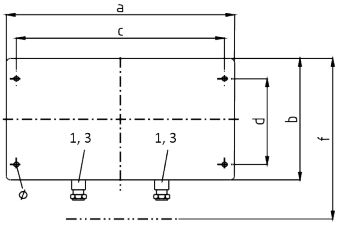
VKK 280x8



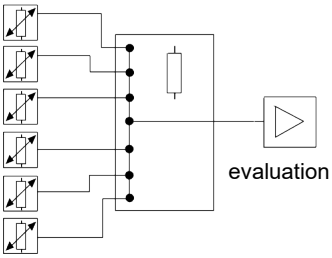
VKK 28008 / 28018 / 28028



VAK 28040

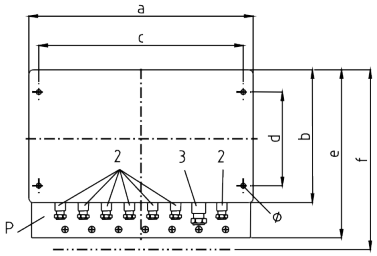


VKK 280x6

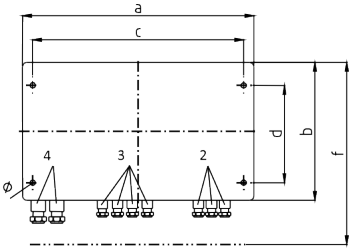


Load cell

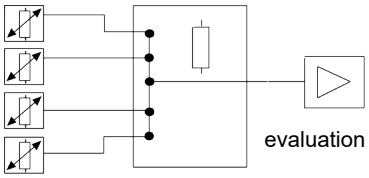
VKK 28006 / 28016 / 28026



VAK 28051

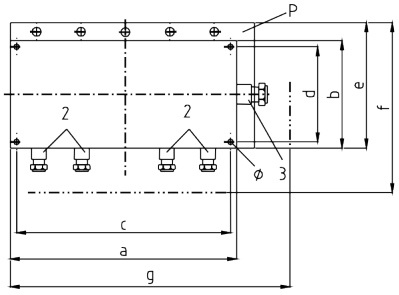


VKK 280x4

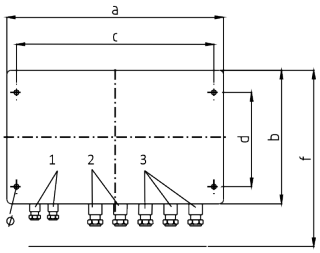


Load cell

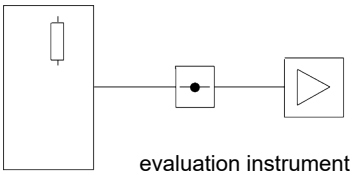
VKK 28004 / 28014 / 28024



VAK 28080

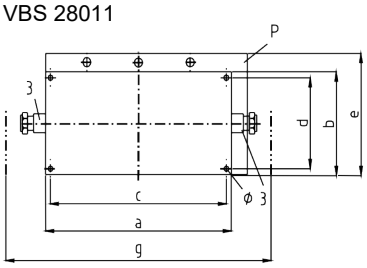


VBS 28011

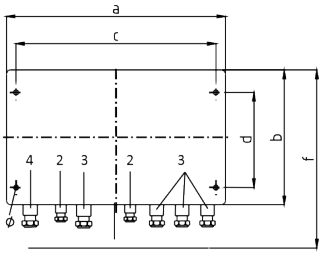


VKK

VBS 28011



VAK 20120



In combination with combination junction boxes with over-voltage protection (VKK 28006 with DBS6; VKK 28008), 1 VBS module is used near the evaluation unit (max. 1 m). In other cases, a second VBS module is required in the vicinity of the VKK.

P = Potential equalization plate

Ø = Mounting hole

Cable inlet

1 = M12	Cable Ø 2 … 7.5 mm
2 = M16	Cable Ø 4 … 11 mm
3 = M20	Cable Ø 5 … 14 mm
4 = M25	Cable Ø 11 … 20 mm

Dimensions [mm]

Type	a	b	c	d	e	f	g	Height	Ø
VBS 28011	175	80	163	52	105	–	295	60	4.8
VKK 28004	190	75	178	45	105	160	250	60	4.5
VKK 28014	175	80	163	52	105	165	235	60	4.8
VKK 28024	200	100	229*	43.5*	–	160	260	75	10
VKK 28006 **VKK 28016**	260	160	240	110	210	220	–	90	6.5
VKK 28026	260	160	290	103.5	210	260	314	91	10
VKK 28008 **VKK 28018**	260	160	240	110	210	270	320	90	6.5
VKK 28028	260	160	240	110	210	220	340	91	10
VAK 28040-(2GD)	122	120	106	82	–	180	–	90	6.3
VAK 28040-2GD-SS	150	150	180*	93.5*	–	200	–	95	10
VAK 28051-(2GD) **VAK 28080-(2GD)**	220	120	204	82	–	180	–	91	6
VAK 28051-2GD-SS **VAK 28080-2GD-SS**	260	160	290	103.5	–	210	314	91	10
VAK 20120-(2GD)	260	160	240	110	–	220	–	90	6.3

*) These stainless steel housings have only 2 (instead of 4) fixing holes (external fixing tabs).

Further technical data

Type of protection	IP66 IP68 available on request	
Permissible ambient temperature	Polyester housing, non-ATEX	-20 °C … +85 °C
	Aluminum and stainless steel housing, non-ATEX	-40 °C … +85 °C Other temperature ranges are available on request.
	Aluminum and stainless steel housing, ATEX	-20 °C … +50 °C
Impact-resistance of the housing	7 Joule	
Housing material information		
Polyester	Glass fiber reinforced, thermoset polyester RAL 7000 (ATEX RAL 9011) Flammability: self-extinguishing, UL 94 V-0; cable glands: plastic	
Aluminum	DIN EN 1706 EN AC-AlSi12(Fe), powder-coated RAL 7001; brass screw connections	
Stainless steel	• 1.4301, polished (standard variants) • 1.4404, polished (ATEX variants)	Brass screw connections Versions with stainless steel screw connections are available upon request.