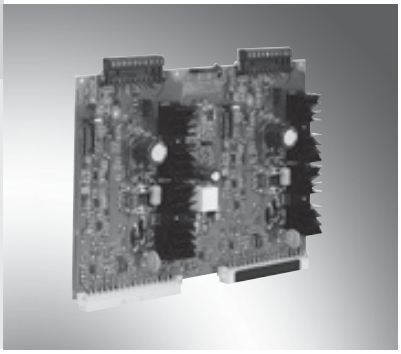
Electric amplifiers

RE 30049/07.14 1/6
Replaces: 03.12

Type VT-KRRA2-5...-2X/...

Component series 2X



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Features

- Suitable for controlling direct operated high-response valves
- Double card for simultaneous operation of 2 high-response valves size 6 or size 10
- Controlled output stage
- Enable input
- Outputs short-circuit-proof
- Adjustment possibilities – zero point valve
- Cable break detection for actual value cable

Notice:

The photo shows an example configuration.
The delivered product differs from the figure.

Ordering code, accessories

VT-	K	R	R	A	2 –	–2X/V0/2CH

Hydraulic component
For valves with electric feedback **= R**

Valve type
High-response valve **= R**

Control
Analog **= A**

Output stage
2 output stages **= 2**

Option
2CH = High-response valve with 2-channel variant

Customer version
V0 = Catalog version

2X = Component series 20 to 29 (20 to 29: Unchanged technical data and pin assignment)

Serial number for types
527 = Size 6
537 = Size 10

Preferred types

Amplifier type	Material number	For high-response valves with electric position feedback
VT-KRRA2-527-20/V0/2CH	0811405083	4WRPH 6...L-2X...
VT-KRRA2-537-20/V0/2CH	0811405082	4WRPH 10...L-2X...

Suitable card holder:

– Open card holder VT 3002-2-2X/32D (see data sheet 29928).
Only for control cabinet installation!

Function

Applications

2-axis control in presses, forming machines and machine tools.

Plug-in connections

– 2 x DIN 41612, 32-pole, for low-power signals (command value, enable, etc.).
– Bolted plug-in connection to the valve and for supply voltage on handle side (ST 4, 5 and ST 9, 10) included in the scope of delivery.

Test points

IC base on handle side for control measurements and signal inputs.

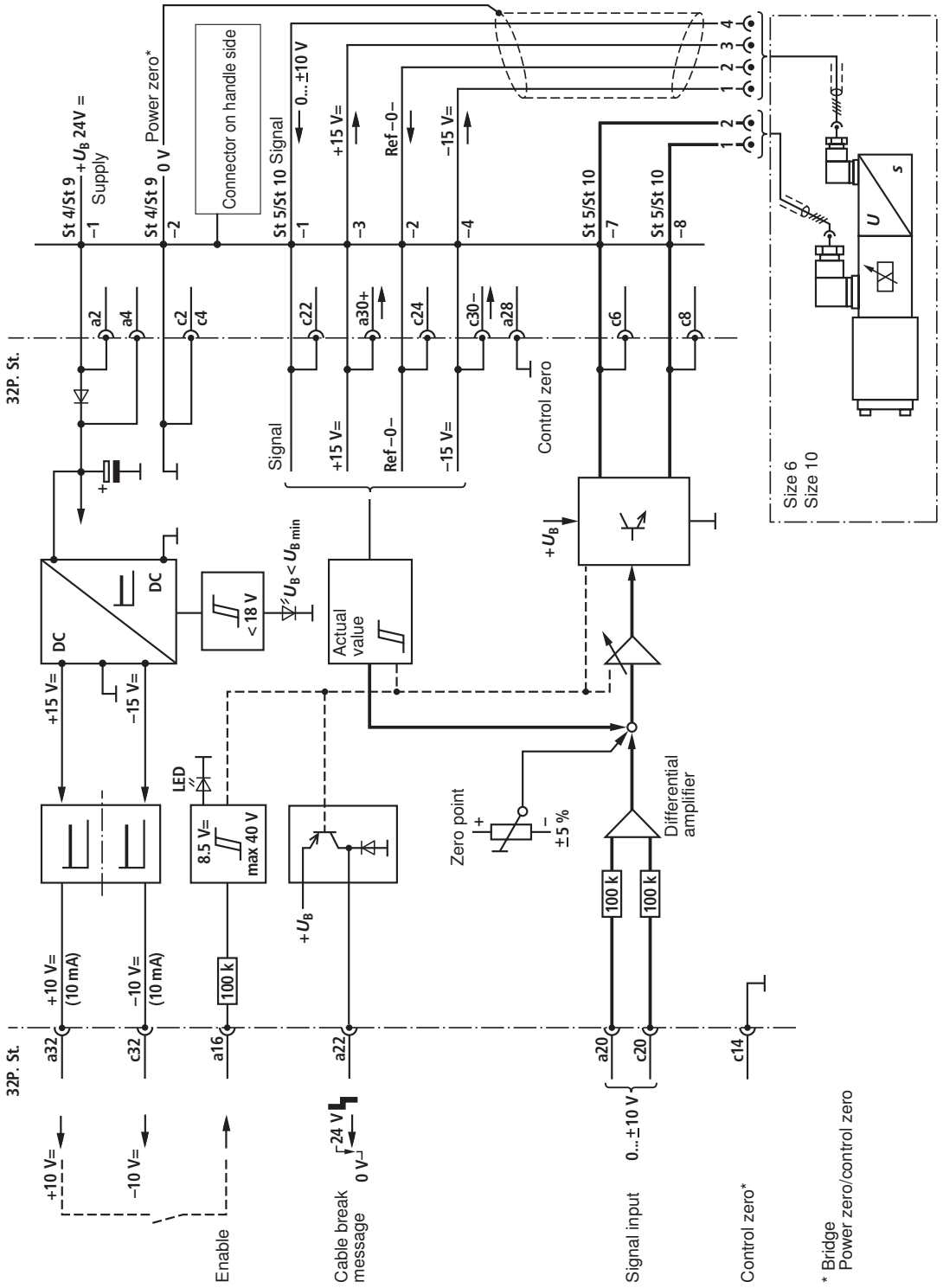
Displays

For cable break, enable and undervoltage.

Direct voltage controller (DC/DC converter)

For the supply of command value encoders, position transducers and internal supply together for both channels.

Block diagram with pin assignment



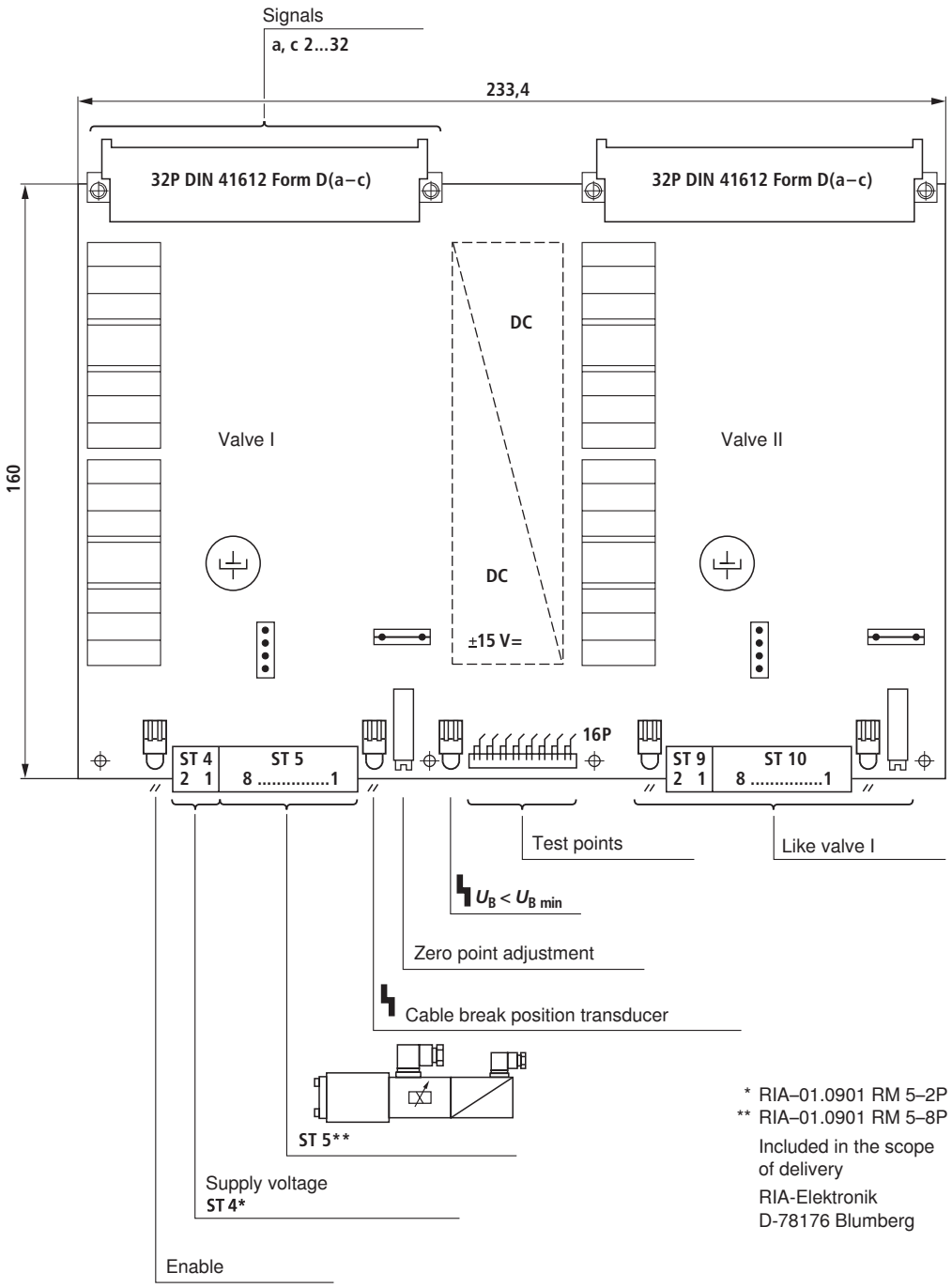
Technical data (For applications outside these parameters, please consult us!)

Supply voltage U_B at ST 4 and ST 9			Nominal 24 V = Battery voltage 21...40 V, Rectified alternating voltage U_{eff} = 21...28 V (one-phase, full-wave rectifier)
Smoothing capacitor			Recommendation: Capacitor module VT 11110 (see data sheet 30750) (only necessary if the ripple of U_B > 10 %)
Undervoltage UB > 18 V			LED (red) on handle side is illuminated
Current consumption – printed circuit board	VT-KRRA2-527		Max. 1.5 A per valve, the current consumption may increase up to 2.5 A with min. U_B and extreme cable length
	VT-KRRA2-537		Max. 2.7 A per valve, the current consumption may increase up to 3.5 A with min. U_B and extreme cable length
Power consumption – solenoid max.	VT-KRRA2-527		37 VA, nominal, per valve
	VT-KRRA2-537		55 VA, nominal, per valve (typical)
Command value at a20/c20			0...±10 V; R_i = 100 kΩ (differential amplifier), overload capacity < ±20 V
Signal source			External electronic control system, reference ±10 V from b32, z32
Enable output stage			At a16 U = 8.5...40 V; R_i = 100 kΩ, LED on handle side lights up (green)
Position transducer at ST 5 and ST 10	Supply		Cl. 4: –15 V/200 mA, short-circuit-proof
	Supply		Cl. 3: +15 V/200 mA, short-circuit-proof
	Signal		Cl. 1: 0 ... ±10 V; RL ≧ 10 kΩ
Reference voltage for external electronics			c32: –10 V/10 mA, short-circuit-proof a32: +10 V/10 mA, short-circuit-proof
Solenoid current max.	VT-KRRA2-527	A	2.9
	VT-KRRA2-537	A	3.7
Fault message a22 cable break			Error: 0 V; no errors: 24 V, max. 100 mA ↳ : LED (yellow) on handle side is illuminated
Cable between amplifier and valve			Solenoid cable: to 20 m Ø 1.5 mm² 20 to 60 m Ø 2.5 mm² Position transducer: 4 x 0.5 mm² (shielded)
Circuit board format		mm	(233.4 x 160 x approx. 30) / (W x L x H), double Europe format
Plug-in connection	Signals		Connector DIN 41612, design D (a–c)
	Valve and supply		Screw-plug-in connection on handle side
Ambient temperature		°C	0...+70
Storage temperature range		°C	–20...+70
Weight		*m*	0.54 kg

Notice:
Power zero and control zero c14/c12 must be bridged.
If the distance to the power supply unit is < 1 m, directly onto the DIN connector at c2/c4.
With larger distances, lead the control separately to the ground.
Connect the supply voltage to connectors ST 4 and ST 9.

Adjustment
Zero point adjustment via trimming potentiometer.

Disposition, unit dimensions (dimensions in mm)



Project planning / maintenance instructions / additional information

- The amplifier card may only be unplugged and plugged when de-energized.
- The distance to aerial lines, radios and radar systems must be sufficient (> 1 m).
- Do not lay solenoid and signal lines near power cables.
- For signal lines and solenoid conductors, we recommend using shielded cables.
  The cable shield must be connected to the control cabinet extensively and as short as possible.
- The valve solenoid must not be connected to free-wheeling diodes or other protective circuits.
- The cable lengths and cross-sections specified on page 4 must be complied with.