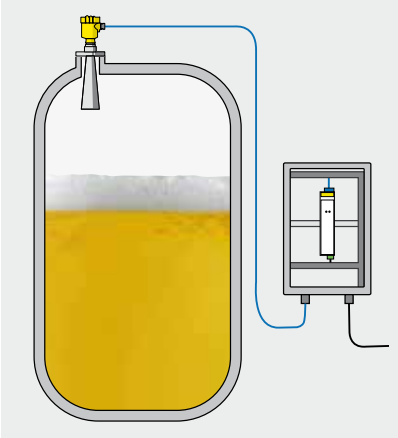
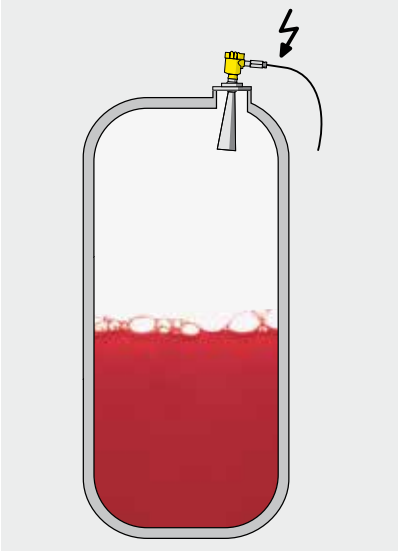
Isolation and Protection Devices

Overview Isolation and Protection Devices





Area of application

These devices are used in all applications where explosion protection regulations must be observed. In addition to powering the sensors in the field, they ensure electrical isolation from the connected PLC or process control system.

Principle of operation

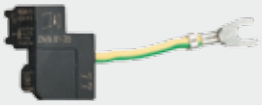
Isolation devices separate intrinsically safe circuits from non-intrinsically safe circuits. Distinguishing features are the type of power supply and the size of the Ex-specific characteristic values.

Advantages

Reliable separation of intrinsically safe and non-intrinsically safe circuits. Simple installation, as no additional power supply is required. Simple installation via DIN rail mounting.

	Safety barrier 9001	VEGATRENN 149A Ex	VEGATRENN 151/152
			
Application	Single channel safety barrier for measuring current transmission	Galvanically separated voltage supply for 4 … 20 mA sensors	Separator for 4 … 20 mA sensors
Sensors	4 … 20 mA	4 … 20 mA	4 … 20 mA
Mounting	Carrier rail 35 x 7.5 acc. to EN 50022	Carrier rail 35 x 7.5 acc. to EN 50022	Carrier rail 35 x 7.5 acc to. EN 50022
Input and power supply	1 x 4 … 20 mA indication	1 x 4 … 20 mA sensor input active at 16.7 V	1 x 4 … 20 mA sensor input
Output	1 x 4 … 20 mA	1 x 4 … 20 mA	1 x 4 … 20 mA
Operting voltage	Passive	20 … 253 V AC/DC, 50/60 Hz	Passive
Approvals	ATEX	ATEX, IEC, FM, CSA, GOST, Ship, SIL2	ATEX, IEC, Ship, SIL2

	B53-19/B61-300/B61-300 FI	B62-36G/B62-30W
		
Application	B53-19: Overvoltage arresters for conductive probes B61-300: Overvoltage arresters of supply and control cables B61-300FI: Overvoltage arresters of supply and control cables with FI protective circuits	B62-36G: Overvoltage arresters for two-wire circuits B62-30W: Overvoltage arresters for Profibus PA and Foundation Fieldbus circuits
Mounting	Carrier rail 35 x 7.5 acc. to EN 50022 or on carrier rail 32 mm acc. to EN 50035	Carrier rail 35 x 7.5 acc. to EN 50022 or on carrier rail 32 mm acc. to EN 50035
Operating voltage	B53-19: max. 19 V AC, 27 V DC B61-300/B61-300 FI: 110 … 300 V AC/DC, max. 16 A	B62-36G: 9.6 … 36 V DC, max. 450 mA B62-30W: 12 … 36 V DC, max. 450 mA
Nominal leak current	< 10 kA	< 10 kA
Protection	IP 20	IP 20
Temperature range	-40 … +60 °C	-40 … +60 °C
Approvals	ATEX	ATEX

	B63-48/B63-32	B81-35
		
	B63-48: Overvoltage arresters for two-wire circuits B63-32: Overvoltage arresters for Profibus PA and Foundation Fieldbus circuits	Pluggable overvoltage arresters for supply and signal circuits
	Direct mounting in the cable entry of the field device	Pluggable to the plics® mains electronics of VEGAPULS series 60, VEGAFLEX series 80, VEGABAR series 80 and VEGADIS 82
	B63-48: 12 ... 48 V DC B63-32: max. 32 V DC	max. 35 V DC
	< 10 kA	< 10 kA
	IP 66	-
	-40 … +85 °C	-40 … +85 °C
	ATEX	-

Safety barrier type 9001

Safety barrier for intrinsically safe measurement current transmission in Ex zone 1

Application area
The safety barrier type 9001 is used for separation of the intrinsically safe and non-intrinsically safe circuits and is ideal in conjunction with signal conditioning instruments without Ex approval.

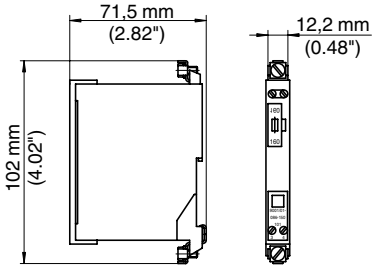
Your benefit
- Reliable separation of intrinsically safe and non-intrinsically safe circuits
- Simple installation, because no additional voltage supply required
- Simple installation through carrier rail mounting

Technical data

Input/Output:	4 … 20 mA signal circuit
Nominal data:	6 V, 73 Ohm
Mounting:	carrier rail 35 x 7.5 acc. to EN 50022 or on carrier rail 32 acc. to EN 50035
Mounting location:	outside the Ex area

Delivery time: SPEED

TRENN9001.



VEGATRENN 149A Ex

Ex-separator for 4 … 20 mA/HART sensors

Application area
VEGATRENN 149A Ex is used for galvanic separation, intrinsically safe power supply as well as signal transmission of Ex approved 4 … 20 mA/HART sensors in hazardous areas. The separate voltage supply ensures a reliable measured value transmission. The VEGATRENN 149A Ex is used in all industries with Ex applications.

Your benefit
- Universal use of the Ex separator for all 4 … 20 mA/HART sensors
- Complete HART permeability enables free access to sensor settings
- Simple mounting through carrier rail

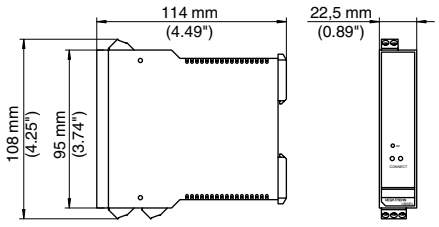
Technical data

Input:	1 x 4 … 20 mA sensor input active
Output:	1 x 4 … 20 mA/24 V
Operating voltage:	20 … 253 V AC/DC, 50/60 Hz
Mounting:	carrier rail 35 x 7.5 acc. to EN 50022
SIL qualification:	optionally up to SIL2

Delivery time: SPEED

Approval
EX.X ATEX II (1) G, D [Ex ia] IIC
EX.X ATEX II (1) G, D [Ex ia] IIC + Ship approval
EX.X IEC [Ex ia] IIC
EX.X IEC [Ex ia] IIC + Ship approval

TRENN149A	



VEGATRENN 151

Single channel separator in two-wire technology for 4 … 20 mA sensors

Application area
The single channel VEGATRENN 151 is used for galvanic separation, intrinsically safe power supply as well as signal transmission of Ex-approved 4 … 20 mA sensors in hazardous areas. The separator is ideal in conjunction with signal conditioning instruments without own Ex approval.

Your benefit
- Reliable separation of intrinsically safe and non-intrinsically safe circuits
- Simple installation, because no additional voltage supply necessary
- Simple installation through carrier rail mounting as well as detachable, coded terminals

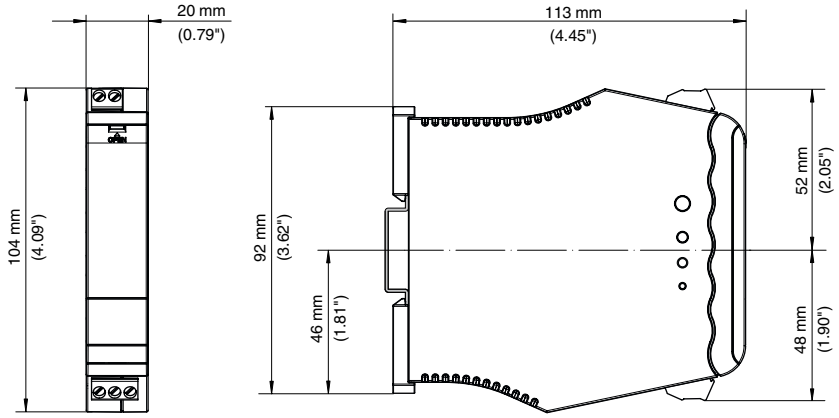
Technical data

Input:	1 x 4 … 20 mA sensor input
Output:	1 x 4 … 20 mA
Operating voltage:	passive
Mounting:	Carrier rail 35 x 7.5 acc. to EN 50022
SIL qualification:	optionally up to SIL2

Replaces separator type KFD0-CS-Ex1.51P

Scope
A Europe
I Worldwide
Approval
X for Ex-free area
M Ship approval (DNV GL, LR)
A ATEX II 3G Ex nA nC ic IIC T4 Gc + II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I
C ATEX II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I
U ATEX II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I + WHG
O ATEX II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I + Ship approval (DNV GL, LR)
A IEC Ex nA nC ic IIC T4 Gc + [Ex ia Ga/Da] IIC/IIIC, [Ex ia Ma] I
C IEC [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
U IEC [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + WHG
O IEC [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + Ship approval (DNV GL, LR)
Version / Angle
X Single channel separator for 4...20mA sensors
SIL qualification
X without
Housing / Protection
K Plastic / IP20
Terminal blocks / Connection
X 2.5mm² detachable terminal blocks 1x black / 2x black
B 2.5mm² detachable terminal blocks 1x blue / 2x black
Certificates
X no
M yes, further add. prices possible

TRENN151. | | | | | | | |



VEGATRENN 152

Double channel separator in two-wire technology for 4 … 20 mA sensors

Application area
The double channel VEGATRENN 152 is used for galvanic separation, intrinsically safe power supply as well as signal transmission of Ex-approved 4 … 20 mA sensors in hazardous areas. The separator is ideal in conjunction with signal conditioning instruments without own Ex approval.

Your benefit
- Reliable separation of intrinsically safe and non-intrinsically safe circuits
- Simple installation, because no additional voltage supply necessary
- Simple installation through carrier rail mounting as well as detachable, coded terminals

Technical data

Input:	2 x 4 … 20 mA sensor input
Output:	2 x 4 … 20 mA
Operating voltage:	passive
Mounting:	Carrier rail 35 x 7.5 acc. to EN 50022
SIL qualification:	optionally up to SIL2

Scope
A Europe
I Worldwide

Approval
X for Ex-free area
M Ship approval (DNV GL, LR)
A ATEX II 3G Ex nA nC ic IIC T4 Gc + II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I
C ATEX II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I
U ATEX II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I + WHG
O ATEX II (1) G/D [Ex ia Ga/Da] IIC/IIIC, I (M1) [Ex ia Ma] I + Ship approval (DNV GL, LR)
A IEC Ex nA nC ic IIC T4 Gc + [Ex ia Ga/Da] IIC/IIIC, [Ex ia Ma] I
C IEC [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
U IEC [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + WHG
O IEC [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + Ship approval (DNV GL, LR)

Version / Angle
X Double channel separator fro 4...20mA sensors

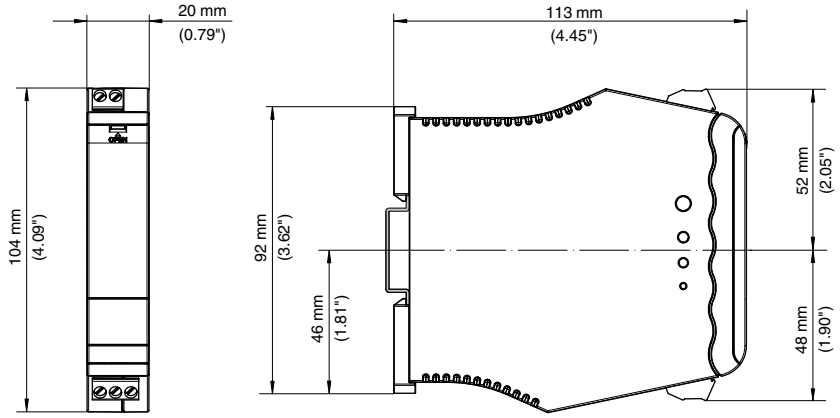
SIL qualification
X without

Housing / Protection
K Plastic / IP20

Terminal blocks / Connection
X 2.5mm² detachable terminal blocks 2x black / 2x black
B 2.5mm² detachable terminal blocks 2x blue / 2x black

Certificates
X no
M yes, further add. prices possible

TRENN152. [ ][ ][ ][ ][ ][ ][ ][ ]



Overvoltage protection B 53-19

Overvoltage arrester for the measuring cable of conductive electrodes

Application area
The overvoltage arrester B53-19 limits excess voltage. It protects the electronics of the connected probe effectively against the influences of overvoltages.

Your benefit
– High reliability even with impermissible excess voltages
– Simple mounting through carrier rail

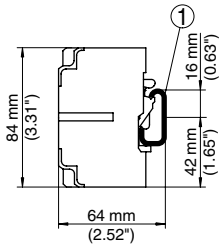
Technical data

Characteristics value:	max. 19 V AC, 27 V DC
Mounting:	carrier rail 35 x 7.5 according to EN 50022 or on carrier rail 32 mm according to EN 50035

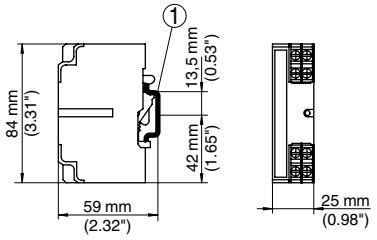
Delivery time: SPEED

Housing / Protection
X without / IP20 .....
GA mounted into aluminium housing / IP65 .....
GK mounted into plastic housing / IP65 .....

ÜSB53-19.X [ ]



① Carrier rail 32 acc. to EN 50035



① Carrier rail 35 x 7.5 acc. to EN 50022

Overvoltage protection B 61-300

Overvoltage arrester for supply and control cables

Application area
The overvoltage arrester B61-300 limits excess voltage on supply cables. The arrester protects the electronics of the connected instruments effectively against overvoltages.

Your benefit
- High reliability even with impermissible excess voltages
- Simple installation through carrier rail mounting

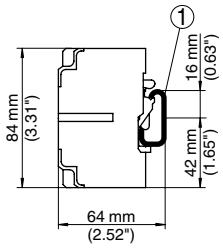
Technical data

Characteristics values:	110 … 300 V AC/DC, max. 16 A
Mounting:	carrier rail mounting 35 x 7.5 according to EN 50022 or carrier rail 32 mm according to EN 50035

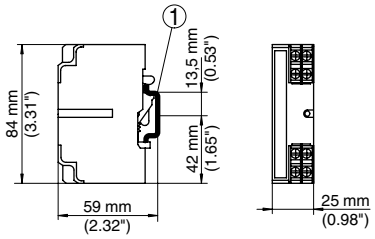
Delivery time: SPEED

Housing / Protection
- **X** without / IP20
- **GA** mounted into aluminium housing / IP65
- **GK** mounted into plastic housing / IP65

ÜSB61-300.X	



① Carrier rail 32 acc. to EN 50035



① Carrier rail 35 x 7.5 acc. to EN 50022

Overvoltage protection B 61-300 FI

Overvoltage arrester for supply and control cables

Application area
The overvoltage arrester B61-300 FI limits excess voltage on supply cables. The arrester protects the electronics of the connected instruments effectively against overvoltages.

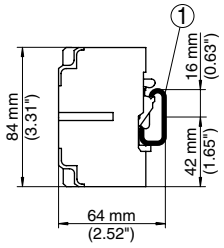
Your benefit
- High reliability even with impermissible excess voltages
- Simple installation through carrier rail mounting
- Suitable for use in circuits with fault-current circuit breaker

Technical data

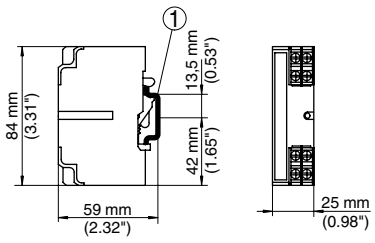
Characteristics values:	110 … 300 V AC/DC, max. 16 A
Mounting:	carrier rail mounting 35 x 7.5 according to EN 50022 or carrier rail 32 mm according to EN 50035
Delivery time:	SPEED

Housing / Protection
X without / IP20 .....
GA mounted into aluminium housing / IP65 .....
GK mounted into plastic housing / IP65 .....

ÜSB61-300FI.X	



① Carrier rail 32 acc. to EN 50035



① Carrier rail 35 x 7.5 acc. to EN 50022

Overvoltage protection B 62-36 G

Overvoltage arrester for supply and signal cables in 4 … 20 mA circuits

Application area
The overvoltage arrester B62-36 G limits excess voltage in supply and signal cables. The arrester protects the electronics of the connected instruments effectively against overvoltages.

Your benefit
- High reliability even with impermissible excess voltages
- Simple installation through carrier rail mounting

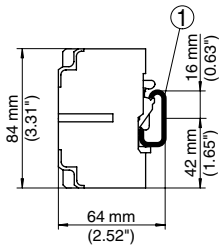
Technical data

Characteristics values:	9.6 … 36 V DC, max. 450 mA
Mounting:	carrier rail 35 x 7.5 acc. to EN 50022 or on carrier rail 32 mm according to EN 50035

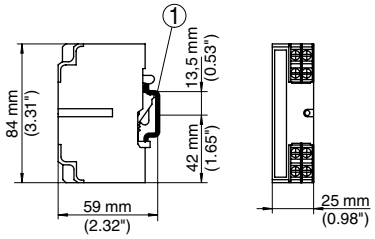
Delivery time: SPEED

Approval
CX ATEX II (1)2G Ex [ia Ga] IIC T6 Gb, II 2G Ex ia IIC T6 Gb
CI IEC Ex [ia Ga] IIC T6 Gb, Ex ia IIC T6 Gb
Housing / Protection
X without / IP20
GA mounted into aluminium housing / IP65
GK mounted into plastic housing / IP65

ÜSB62-36G. | | |



① Carrier rail 32 acc. to EN 50035



① Carrier rail 35 x 7.5 acc. to EN 50022

Overvoltage protection B 62-30 W

Overvoltage arrester in two-wire technology for Profibus PA and Foundation Fieldbus circuits

Application area
The overvoltage arrester B62-30 W limits excess voltage on bus cables. The arrester protects the electronics of the connected instruments effectively against overvoltages.

Your benefit
- High reliability even with impermissible excess voltages
- Simple installation through carrier rail mounting
- Especially developed for the requirements of Profibus PA and Foundation Fieldbus applications

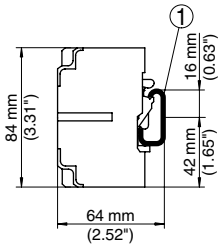
Technical data

Characteristics values:	12 … 36 V DC, max. 450 mA
Mounting:	carrier rail 35 x 7.5 acc. to EN 50022 or on carrier rail 32 mm according to EN 50035

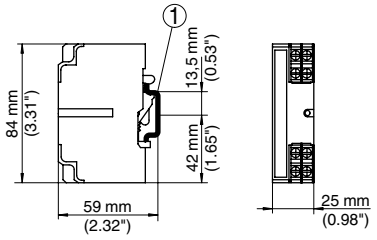
Delivery time: SPEED

Approval
CX ATEX II (1)2G Ex [ia Ga] IIC T6 Gb, II 2G Ex ia IIC T6 Gb .....
CI IEC Ex [ia Ga] IIC T6 Gb, Ex ia IIC T6 Gb .....
Housing / Protection
X without / IP20 .....
GA mounted into aluminium housing / IP65 .....
GK mounted into plastic housing / IP65 .....

ÜSB62-30W. | | |



① Carrier rail 32 acc. to EN 50035



① Carrier rail 35 x 7.5 acc. to EN 50022

Overvoltage protection B 63-48

Overvoltage arrester in two-wire technology in 0/4 … 20 mA circuits

Application area
The overvoltage arrester B63-48 limits excess voltage in signal cables. The arrester protects the electronics of the connected instruments effectively against the effects of overvoltages.

Your benefit
- High reliability even with impermissible excess voltages
- Simple mounting in the cable gland of the field device

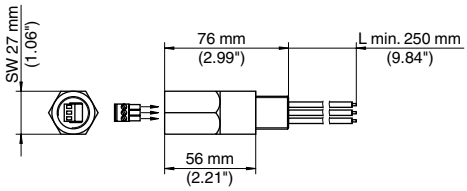
Technical data

Characteristics values:	12 ... 48 V DC
Mounting:	in the cable gland on the field device
Protection:	IP 66

Delivery time: SPEED

Thread
G M20 Iso thread .....
N ½NPT thread .....

ÜSB63-48. ☐



① Connection cables, length 300 mm, cross-section 1 mm²

Overvoltage protection B 63-32

Overvoltage arrester in two-wire technology for Profibus PA and Foundation Fieldbus circuits

Application area
The overvoltage arrester B63-32 limits excess voltage in bus cables. The arrester protects the electronics of the connected instruments effectively against the effects of overvoltages.

Your benefit
- High reliability even with impermissible excess voltages
- Simple mounting in the cable gland of the field device

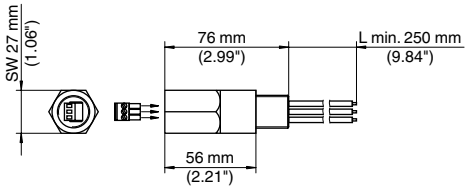
Technical data

Characteristics values:	max. 32 V DC
Mounting:	in the cable gland on the field device
Protection:	IP 66

Delivery time: SPEED

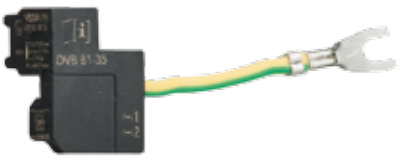
Thread
G M20 Iso thread
N ½NPT thread

ÜSB63-32. ☐



① Connection cables, length 300 mm, cross-section 1 mm²

Overvoltage protection B 81-35



Pluggable overvoltage arrester for supply and signal cables

Application area
The overvoltage arrester B81-35 limits excess voltage in the supply and signal cables. It protects the electronics of the connected instruments effectively against the influences of overvoltages. If necessary, the overvoltage arrester B81-35 is simply plugged onto the supply terminals of the plics® sensor. The supply or signal cable is directly connected to the overvoltage arrester and powered as well as protected through the sensor.

Your benefit
- High reliability even with impermissible excess voltages
- Due to compact, integrated version in plics® sensor housing, no separate installation required
- Universal use for sensors with 4 … 20 mA, Profibus PA and Foundation Fieldbus interface

Technical data

Operating voltage:	max. 35 V DC
Nominal discharge current:	max. 10 kA
Temperature range:	-40 … +85 °C
Mounting:	pluggable in plics® mains electronics of VEGAPULS series 60, VEGAFLEX series 80, VEGABAR series 80 and VEGADIS 82

Delivery time: SPEED

OVB81-35.