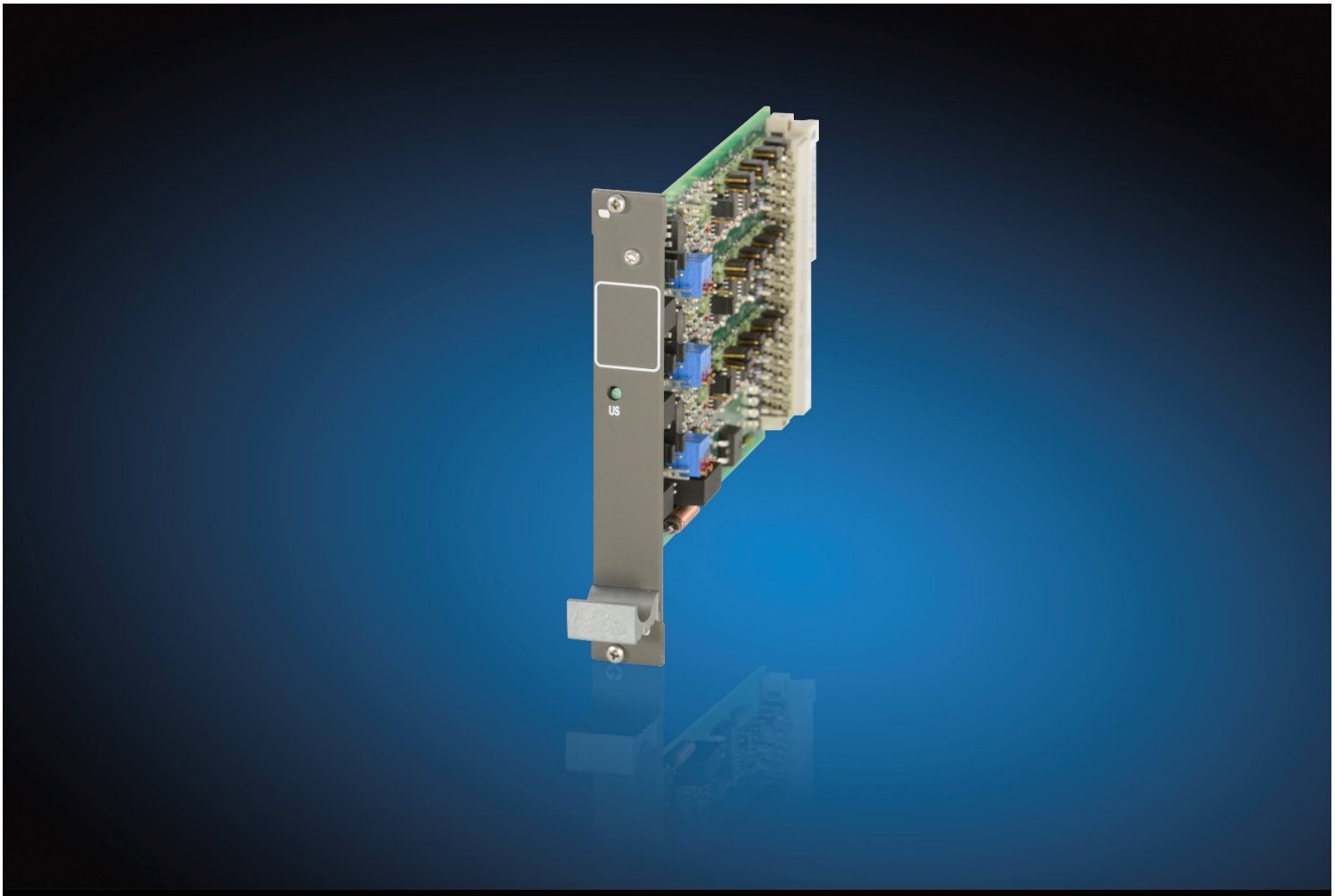

Procontrol P14

89AS30R0100
Module and Application Description
Analog Signal Multiplier

Power and productivity
for a better world™

Procontrol P14

89AS30R0100

Analog Signal Multiplier

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1. APPLICATION

This module is used for converting and multiplying analog signals.

2. FEATURES

The module is designed to process input signals of a level of 0 ... 20 mA or 4 ... 20 mA or 0 ... 10 V DC, the ranges being selected by means of jumpers. From the input signal, three output signals of 0 ... 20 mA or 4 ... 20 mA are formed which can be selected individually by using jumpers; also a signal of 0 ... 10 V is formed.

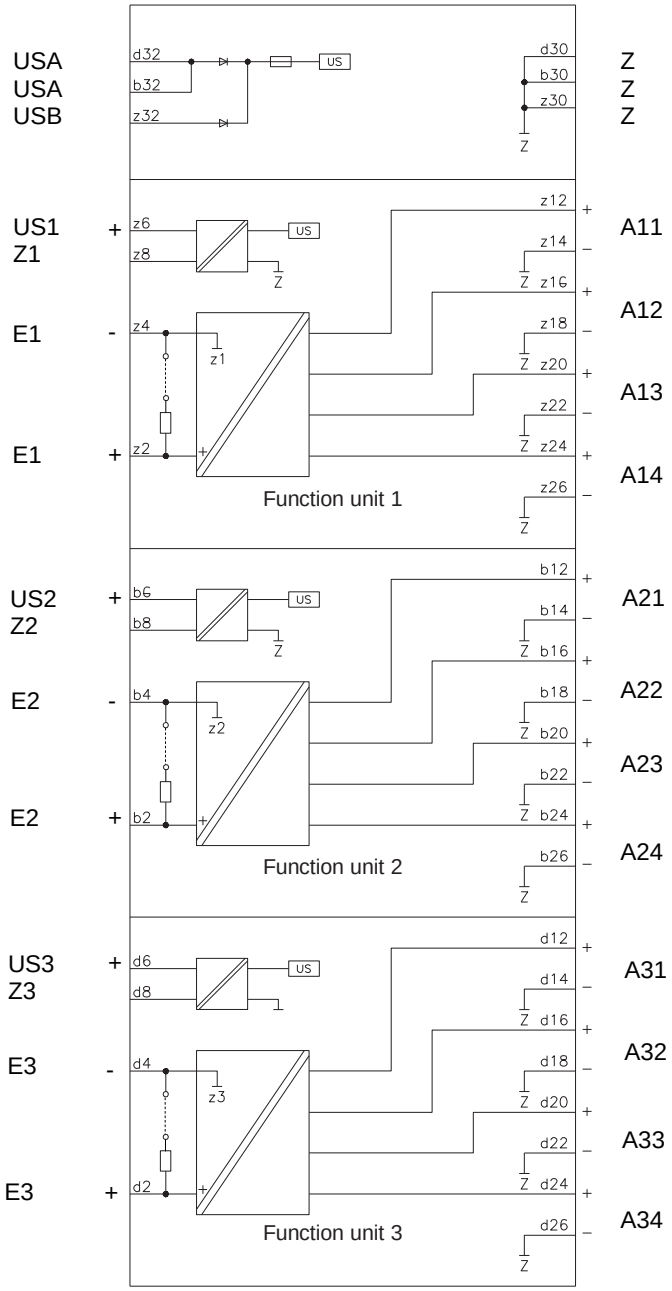
3. DESCRIPTION

The inputs are electrically isolated from the rest of the circuitry. For supplying transmitters and other devices, a voltage of 15 V or 24 V DC is available for each input, also electrically isolated.
The module contains three identical function units. The outputs are separated.

4. ANNUNCIATION FUNCTION

A green light-emitting diode on the front panel indicates when the module is ready for operation.

5. FUNCTION DIAGRAM



6. SETTINGS

Type of input signals and output signals desired, and transmitter supply need to be selected by means of jumpers (JPxx).

Inputs

FE1 E1 FE2 E2 FE3 E3	JP10 JP20 JP30	JP11 JP21 JP31	JP12 JP22 JP32
	I U	I U	I U
0 … 20 mA			
4 … 20 mA			
0… 10 V			

Transmitter supply

US1 US2 US3	JP19 JP29 JP39
	24 V 15 V
15 V	
24 V	

Outputs

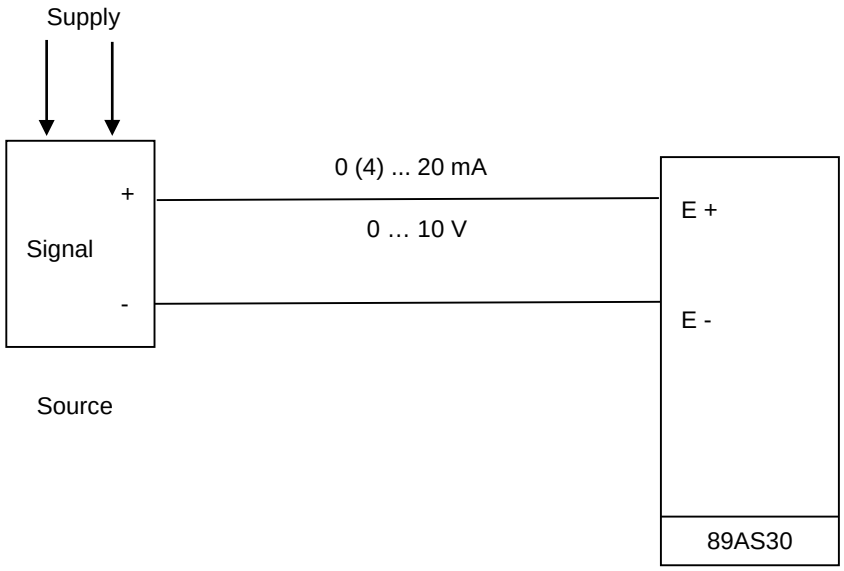
FE1 A11 FE2 A21 FE3 A31	JP13 JP23 JP33	JP14 JP24 JP34
	4 mA 0 mA	4 mA 0 mA
0 … 20 mA		
4 … 20 mA		

FE1 A12 FE2 A22 FE3 A32	JP15 JP25 JP33	JP16 JP26 JP36
	4 mA 0 mA	4 mA 0 mA
0 … 20 mA		
4 … 20 mA		

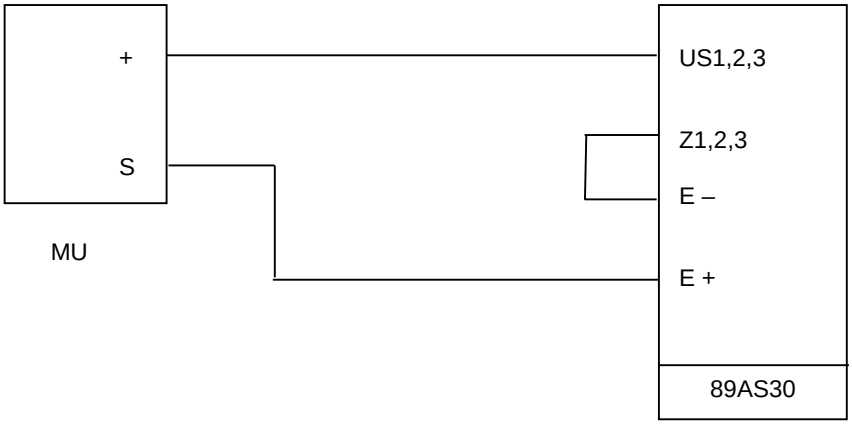
FE1 A13 FE2 A23 FE3 A33	JP17 JP27 JP37	JP18 JP28 JP38
	4 mA 0 mA	4 mA 0 mA
0 … 20 mA		
4 … 20 mA		

7. CONNNECTION DIAGRAM

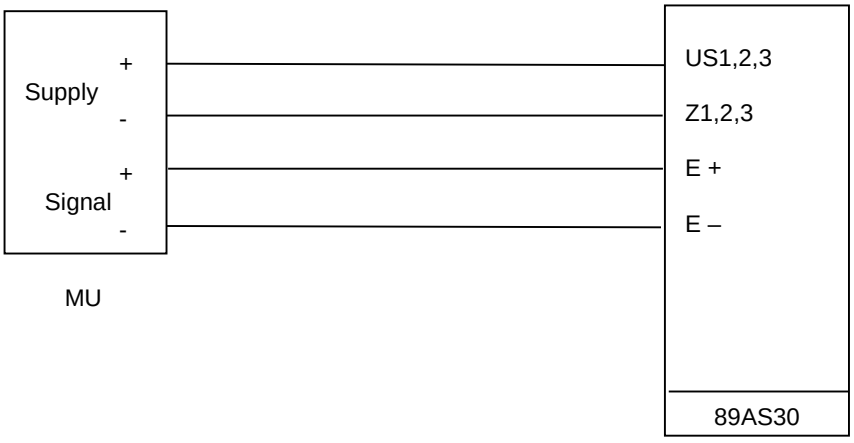
Connection of externally supplied signal sources



Connection of twin – core transducers



Connection of four-core transducers
Possible only if their current consumption < 25 mA



8. MODULE DESIGN

Board size: 3 units, 1 division, 160 mm deep

Connector: to DIN 41 612 / IEC 60603-2
1 x 48-pole edge connector, type F

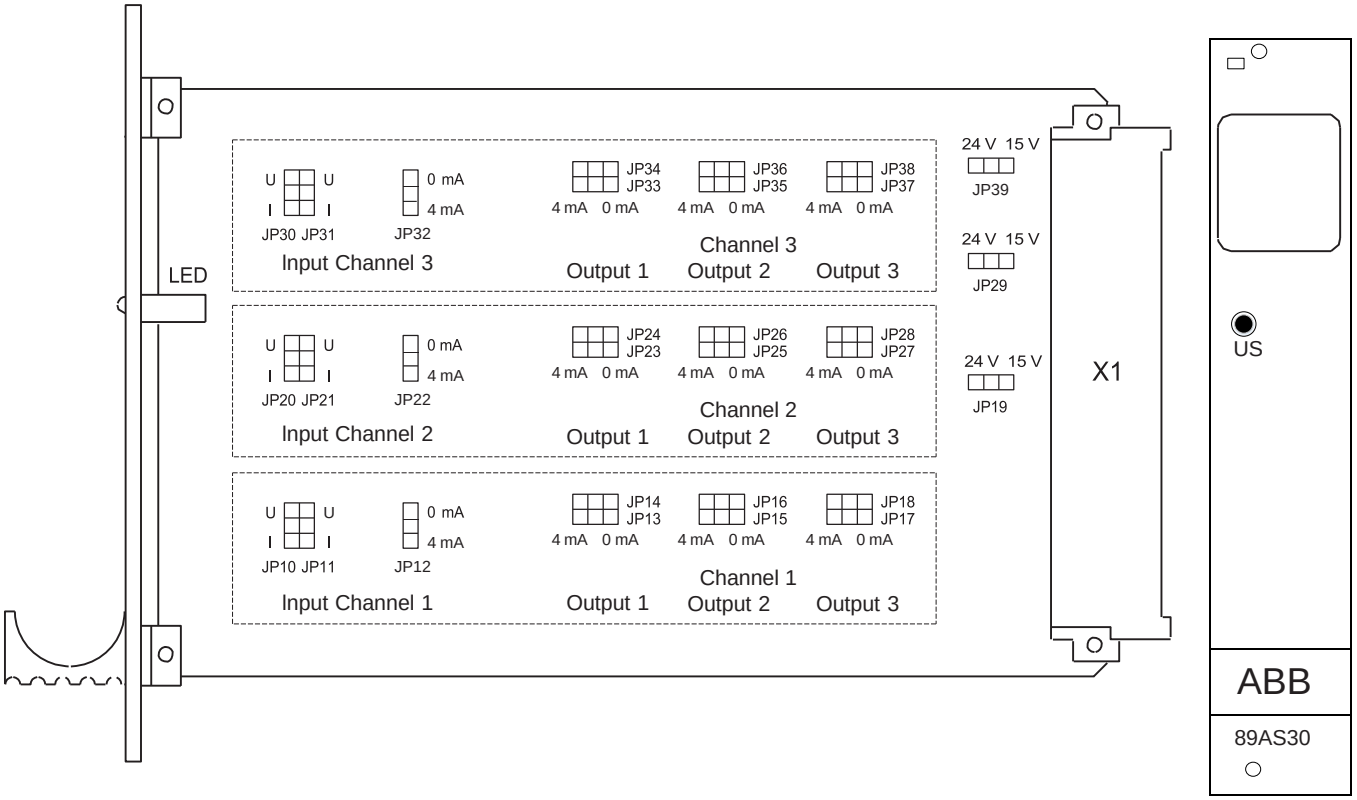
Weight: approx. 0.3 kg

Contact assignments of connector X1

View of contact side:

	d	*b*	*z*
02	E3+	E2+	E1+
04	E3-	E2-	E1-
06	US3+	US2+	US1+
08	Z3	Z2	Z1
10			
12	A31+	A21+	A11+
14	A31-	A21-	A11-
16	A32+	A22+	A12+
18	A32-	A22-	A12-
20	A33+	A23+	A13+
22	A33-	A23-	A13-
24	A34+	A24+	A14+
26	A34-	A24-	A14-
28			
30	Z	Z	Z
32	USA	USA	USB

Side view with jumper positions and view of module front



9. SYSTEM DATA

Kind of influence	Environmental Parameter	Standard	Characteristic/Value
Operating conditions			
Climatic environment	Ambient temperature	IEC/EN 60068-2-2	0°C to +70°C, 16h
	Relative humidity	IEC/EN 60068-2-78	5% to 95% RH
	Atmospheric pressure	IEC/EN 60068-1	86 kPa to 106 kPa
Electromagnetic compatibility (EMC)	Electrostatic discharge immunity	IEC/EN 61000-4-2 Class 3 Class 2	 Air discharge 8 kV Contact discharge 4 kV
	Radiated, radio-frequency, electromagnetic field immunity	IEC/EN 61000-4-3 Class 3	80 MHz to 3000 MHz, 10 V/m, 80 % AM (1 kHz)
	Electrical fast transient/burst immunity - Supply lines for AC 120/230 V (burst) - Supply lines for DC 24 V - Signal lines (I/O and bus lines)	IEC/EN 61000-4-4 Class 3	5/50 ns 2 kV 2 kV 2 kV
	Surge immunity - Supply lines for AC 120/230 V (burst) - Supply lines for DC 24 V - Signal lines (I/O and bus lines)	IEC/EN 61000-4-5 Class 4/3 Class 1/1 Class 3	1.2/50 ns 4/2 kV 0.5/0.5 kV 2 kV
	Immunity to conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6 Class 3	0.15 MHz to 80 MHz, 10 V, 80% AM (1 kHz), Source impedance 150 Ω
	Radiated emission	CISPR16 / EN 55016 Class A	30 MHz to 1000 MHz, Limit Class A, group 1
Conditions of storage and transport			
Climatic environment	Ambient temperature	IEC/EN 60068-2-2	-40°C to +85°C, 16h
	Relative humidity	IEC/EN 60068-2-30	5% to 100% RH +25°C to 40°C (6 cycles)
	Atmospheric pressure	IEC/EN 60068-1	70 kPa to 106 kPa

10. TECHNICAL DATA

10.1 Power supply

Supply voltage	+24 V DC
Current consumption	approx. 110 mA + output currents

10.2 Process Interface

10.2.1 Input values E1, E2, E3

Voltage input	0 ... 10 V (max. 30 V)
Input resistance	> 100 kOhm
Current input	0 ... 20 mA, 4 ... 20 mA
Load resistance RB	55 Ohm

10.2.2 Transmitter supply US1, US2, US3

Selectable by means of jumpers	15 V DC, max. 25 mA 24 V DC, max. 25 mA

10.2.3 Output values

Current outputs A11, A12, A13, A21, A22, A23, A31, A32, A33

Selectable by means of jumpers	0 … 20 mA 4 … 20 mA

Max. burden RB	1000 Ohm
Voltage outputs A14, A24, A34	0 ... 10 V (max. 12 V)
Max. current	5 mA

10.2.4 Transmission values

Transmission error at input/output within the permissible temperature range and the permissible Supply voltage tolerances	≤ 0.3 %
Signal delay	< 1 msec

10.3 Interference immunity (of process inputs and outputs)

The product is in conformity with the provisions of the following European Directive:

2014/30/EC	Directive of the European Parliament and of the Council of 26 Februar 2014 on the harmonization of the laws of member States relating to electromagnetic compatibility (EMC Directive)

Conformity to the stated Directive is assured through the application of the following harmonized standards:

Environment:	Industry
EMC, Emission:	EN 61000-6-4: 2007/A1:2011
EMC, Immunity:	EN 61000-6-2: 2005/AC:2005

See 2VAA002182R0301_CE-Conformity-P14.pdf for detailed technical data.

11. ORDERING DATA

Order no. for complete module:

Type designation: 89AS30R0100 Order number: GKWN000317R0100

Technical data are subject to change without notice!

11. REVISION HISTORY

Rev.			Date / Initial
1.0		Replaces D KWL 6348 94 E	2016-06-29 CG

ABB Inc.
Power Generation
Wickliffe, Ohio, USA
E-Mail: powergeneration@us.abb.com
www.abb.com/controlsystems

ABB AG
Power Generation
Mannheim, Germany
E-Mail: powergeneration@de.abb.com
www.abb.com/controlsystems

ABB Pte. Ltd.
Power Generation
Singapore
E-Mail: powergeneration@sg.abb.com
www.abb.com/controlsystems