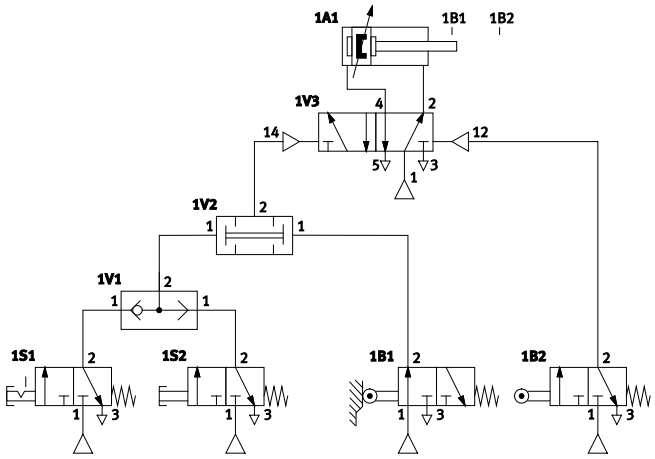
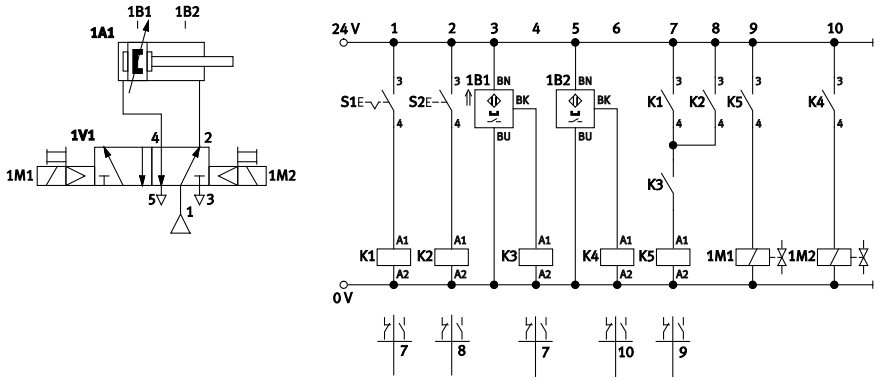
Reference identification to ISO 1219-2 and/or EN 81346-2

Introduction

According to the previously applied standard ISO 1219-2:1995-12 components were identified in pneumatic and electric circuit diagrams as shown in the following figures.



Circuit diagram of a pneumatic control system – components identified to ISO 1219-2:1995-12



Circuit diagram of an electro-pneumatic control system – component identification to ISO 1219-2:1995-12 and EN 81346-2:2009-10

Current status

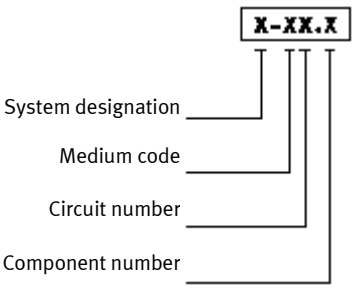
In order to clearly identify components in circuit diagrams, equipment and reference identification is used. For pneumatic and electric circuit diagrams the designation rules are printed in the standards ISO 1219-2 and EN 81346-2. Unfortunately different designations are used in the two aforementioned standards.

The following status applies for the standards ISO 1219-1 and ISO 1219-2:

- ISO 1219-1:2006-10: withdrawn, replaced by ISO 1219-1:2012-06
- ISO 1219-2:1995-12: withdrawn, replaced by ISO 1219-2:2012-09

Designation code for components to ISO 1219-2:2012-09

In the current version of ISO 1219-2:2012-09, no identification letter was used for the function of a component. Every component (with the exception of connecting cables and hoses) is identified as in the following figure.



The designation code for components in pneumatic circuit diagrams

The designation code contains:

- The system designation (number or letter, can be left out if the entire circuit consists of one system), followed by a hyphen
- The medium code (letter), followed directly by
- The circuit number (number, absolutely necessary), followed by a full stop, followed directly by
- The component number (number, absolutely necessary)

The designation code should be enclosed in a frame.

System designation

If several systems and electropneumatic control systems are present in a plant, the system designation must be integrated into the designation code. All pneumatic components in a control system are identified by the same system number.

Medium code

Medium code	Medium
H	Hydraulics
P	Pneumatics
C	Cooling
K	Lubricant coolants
L	Lubrication
G	Gas technology

Medium code for fluid-related systems

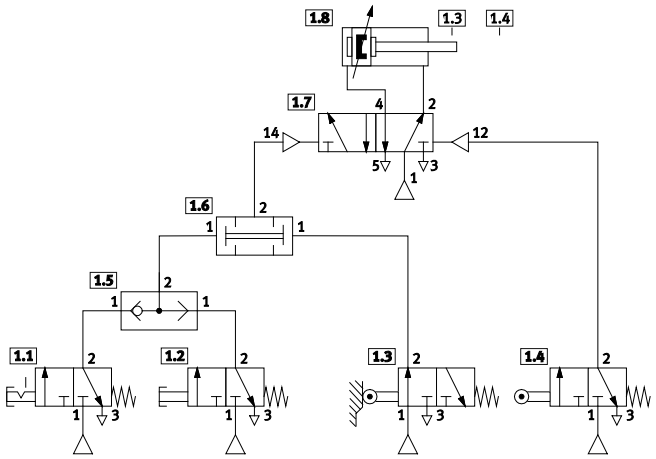
The medium code must be entered if different media are going to be used in a system. The medium code consists of letters. If only one medium is used, it can be left out.

Circuit number

All components for supplying energy are preferably identified by the circuit number 0. Other circuit numbers are reserved for different control chains (= circuits).

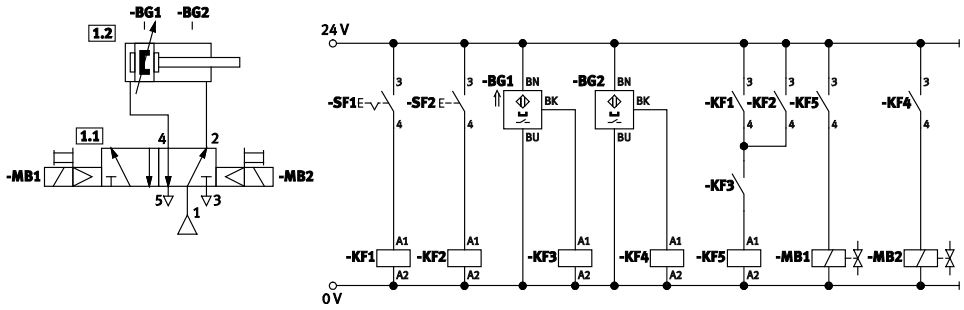
Component number

Each component in an electropneumatic control system is assigned a component identifier and a component number in the circuit diagram. Within a circuit, components with the same component identifier are numbered consecutively from bottom to top and from left to right.



Circuit diagram of a pneumatic control system – components identified to ISO 1219-2:2012-09

The standard ISO 1219-2:2012-09 stipulates that electric components are identified to EN 81346-2:2009-10. This mixed identification code is displayed in the following figure.



Circuit diagram of an electro-pneumatic control system – components identified to ISO 1219-2:2012-09 and EN 81346-2: 2009-10

Identification of components to EN 81346-2:2009-10

The aim of the standards EN 81346-1 and EN 81346-2 is to determine classification schemes for objects with respective identification letters that can be used in all technical subject areas, e.g. electrical engineering and mechanical engineering. The identification letters are supposed to be used in conjunction with the rules for forming reference identifiers in accordance with EN 81346-1.

Prefixes are put in front of the reference identifiers that are related to the functional aspect (=), the product-specific aspect (–) or the location-specific aspect (+) of the object. Product-related reference identifiers are used below.

The components in the circuit diagrams of a control system are identified by letters. Components with the same identification are numbered consecutively. Sensors and solenoid coils must be represented both in the pneumatic diagram and in the circuit diagram. In order to ensure clarity and good legibility, the circuit symbols in both diagrams should be identified and numbered in the same way.

Components	Identification	Components	Identification	Components	Identification
Limit switch, pressure switch	B	Valve solenoid coil	M	Contactor, directional control valve	Q
Relay	C	Signalling devices	P	Manually operated pushbuttons	S

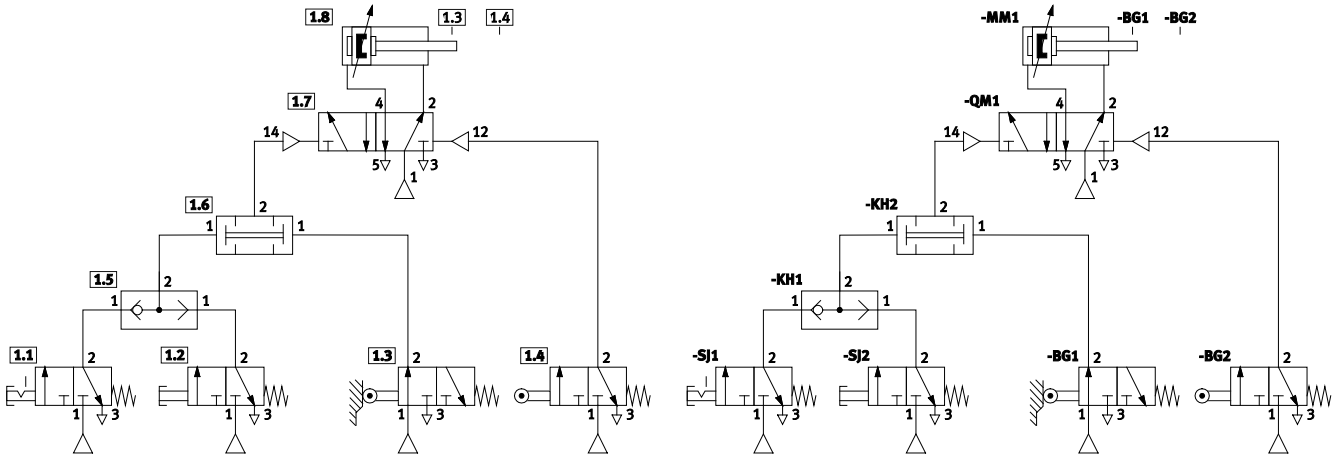
Designation of components in circuit diagrams (extract) – identification with one letter (EN 81346-2:2009-10)

Components	Identification
Air supply unit	AZ
Flow sensor	BF
Limit switch	BG
Pressure sensor	BP
Pump	GP
Fan, compressor	GQ
Auxiliary contactor, regulator, relay	KF

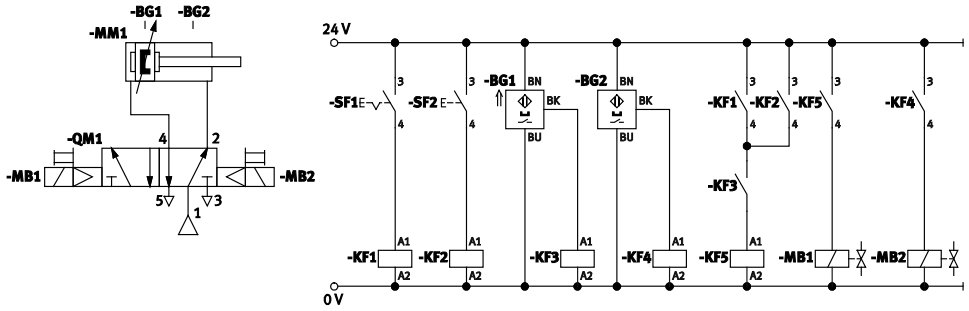
Components	Identification
Fluid regulator, valve block	KH
Electric motor	MA
Actuation coil (e.g. solenoid coil)	MB
Pneumatic/hydraulic cylinder	MM
Indicator lamp, LED	PF
Display instrument	PG
Power contactor	QA

Components	Identification
Disconnector (electric)	QB
Directional control valves (pneumatic/hydraulic)	qm
non-return valve,	RM
Hydraulic/pneumatic flow control valve	RN
One-way flow control valve	RZ
Pushbutton (electric)	SF
Manually operated valves	SJ

Designation of components in circuit diagrams (extract)– identification with two letters (EN 81346-2:2009-10)



Circuit diagram of a pneumatic control system – comparison of component identification as per ISO 1219-2:2012-09 (left) or as per EN 81346-2:2009-10 (right)



Circuit diagram of an electro-pneumatic control system – components identified as per EN 81346-2:2009-10

Summary

The function of a component cannot be identified conclusively with the designation code of ISO 1219-2:2012-09. For this reason, the identification letters of products or the reference identifiers (equipment identifiers) are being used in circuit diagrams in Festo Didactic documents as per EN 81346-2:2009-10 as of 2014. Component designation with two letters is used more frequently. The circuit symbols are displayed as per ISO 1219-1:2012-06 and EN 60617-2:1997-08 to EN 60617-13:1994-01.

Do you have any questions, suggestions or criticism regarding this representation? If so, please send an e-mail to: did@de.festo.com The authors and Festo Didactic look forward to your comments.