

SAFETY PRODUCTS

Connection diagrams

Sentry safety relays



Important information

Sentry connection diagrams

The connection diagrams in this document are only general recommendations from ABB. The conditions of a specific application could make alternative connections more suitable.

With regards to the stated functional safety levels, they apply under the assumption that the installation complies with all other relevant functional safety requirements in EN ISO 13849-1/-2, such as product selection, product placement, cable installation, environmental effects on the system etc.

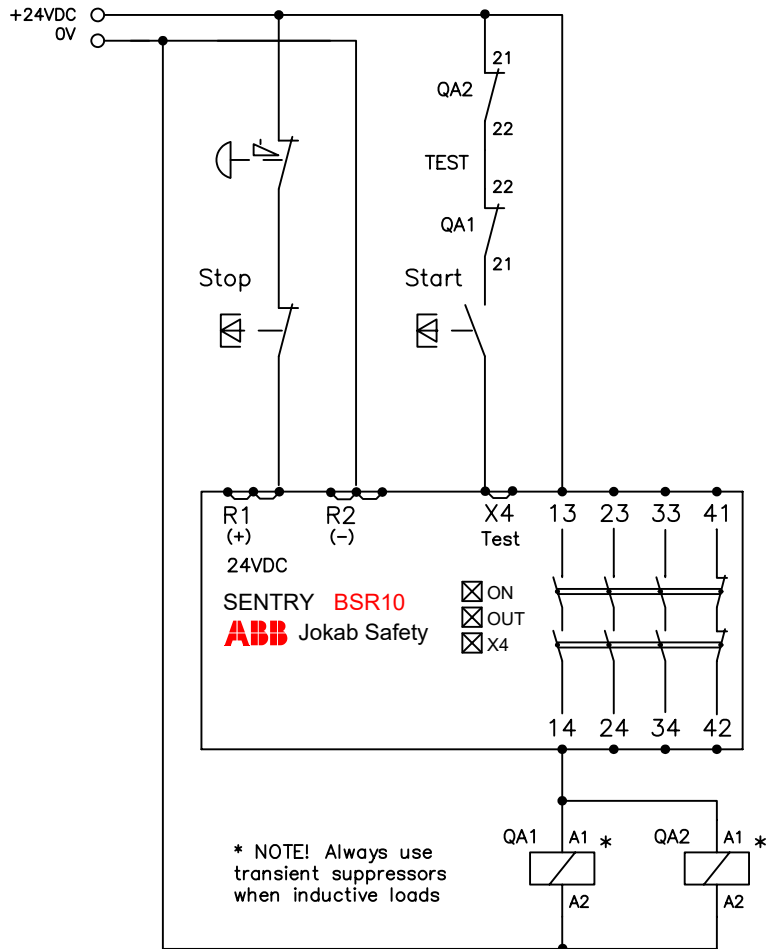
ABB does not accept any liability and/or responsibility whatsoever for any errors or lack of information in this document. It is the responsibility of the machine builder to make a risk assessment and make sure the appropriate functional safety levels are achieved.

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Sentry connection diagrams

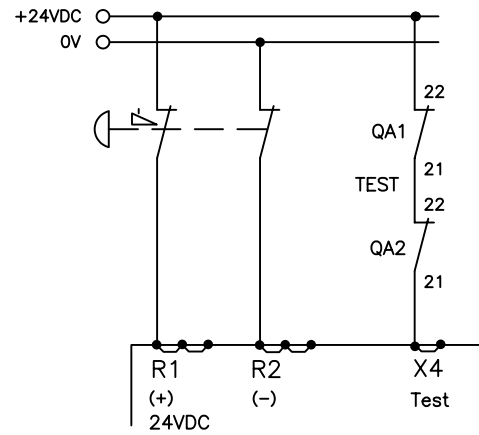
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A) One signal from +24VDC, Start** and Stop

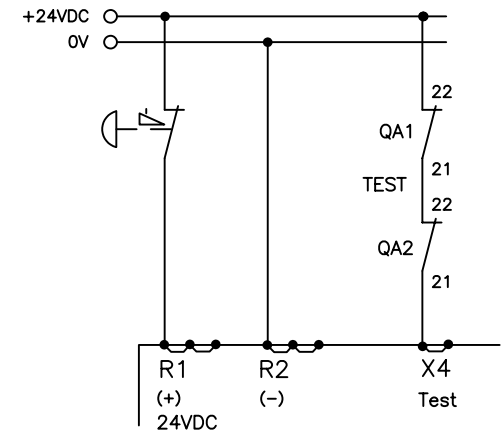


** The Start function should not be used as Reset

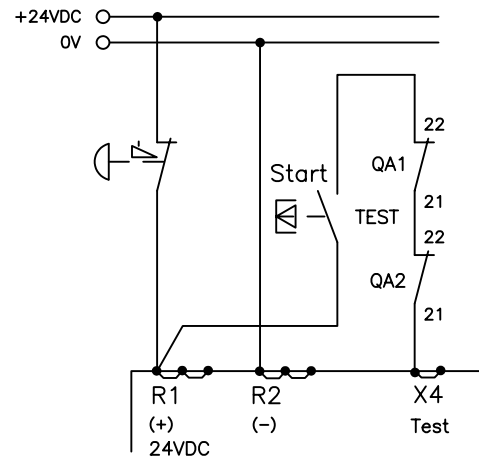
B) Two signals from +24 VDC/0 V



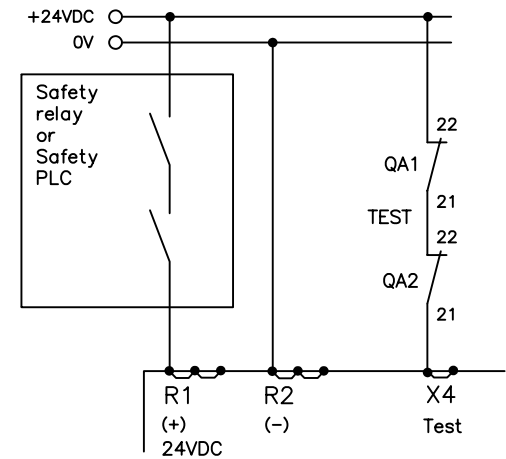
C) One signal from +24VDC



C) One signal from +24 VDC and Start**



E) Expansion of safety relay/safety PLC



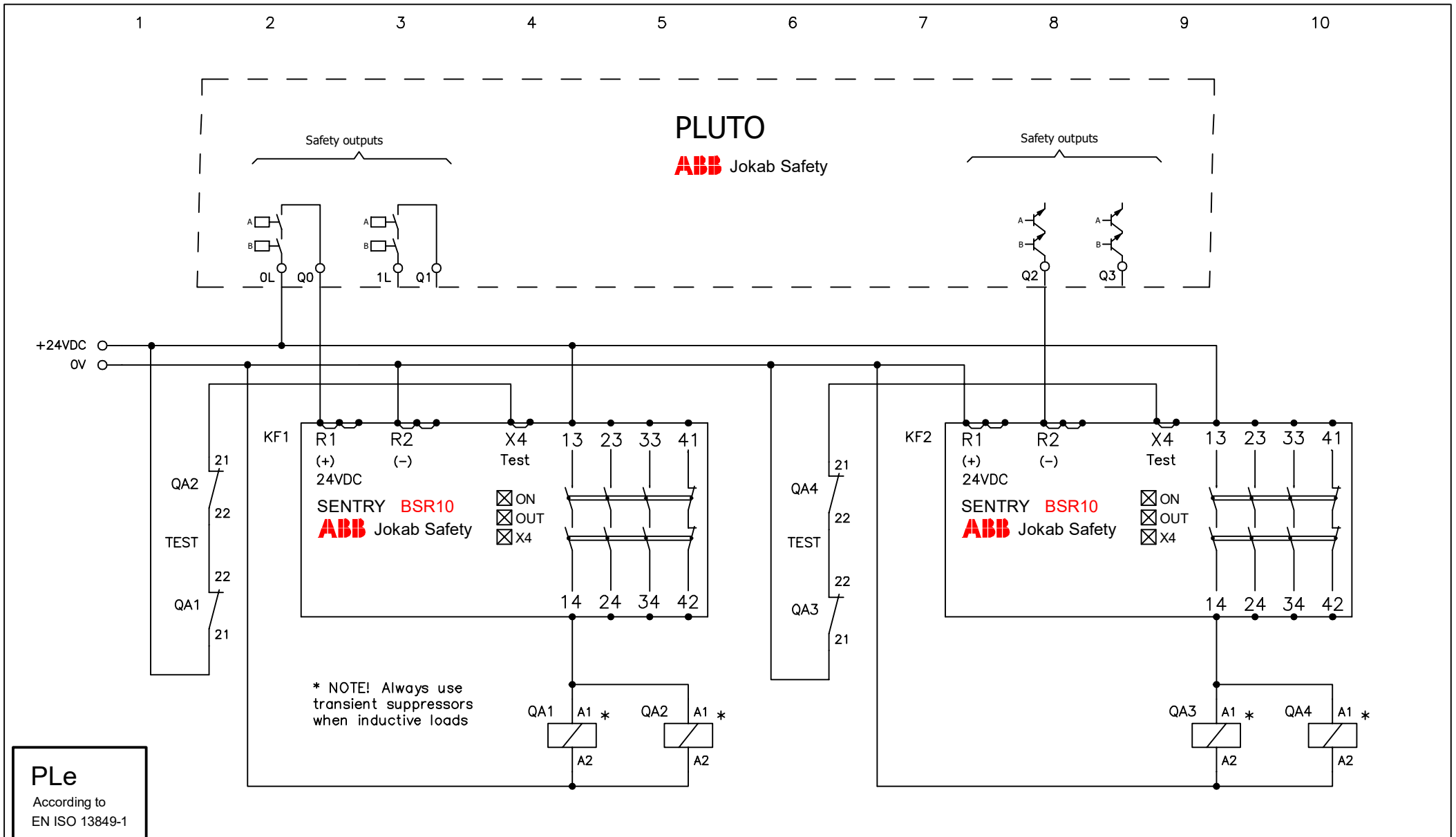
Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

BSR10 general

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210707	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010004T0001	Forts Cont

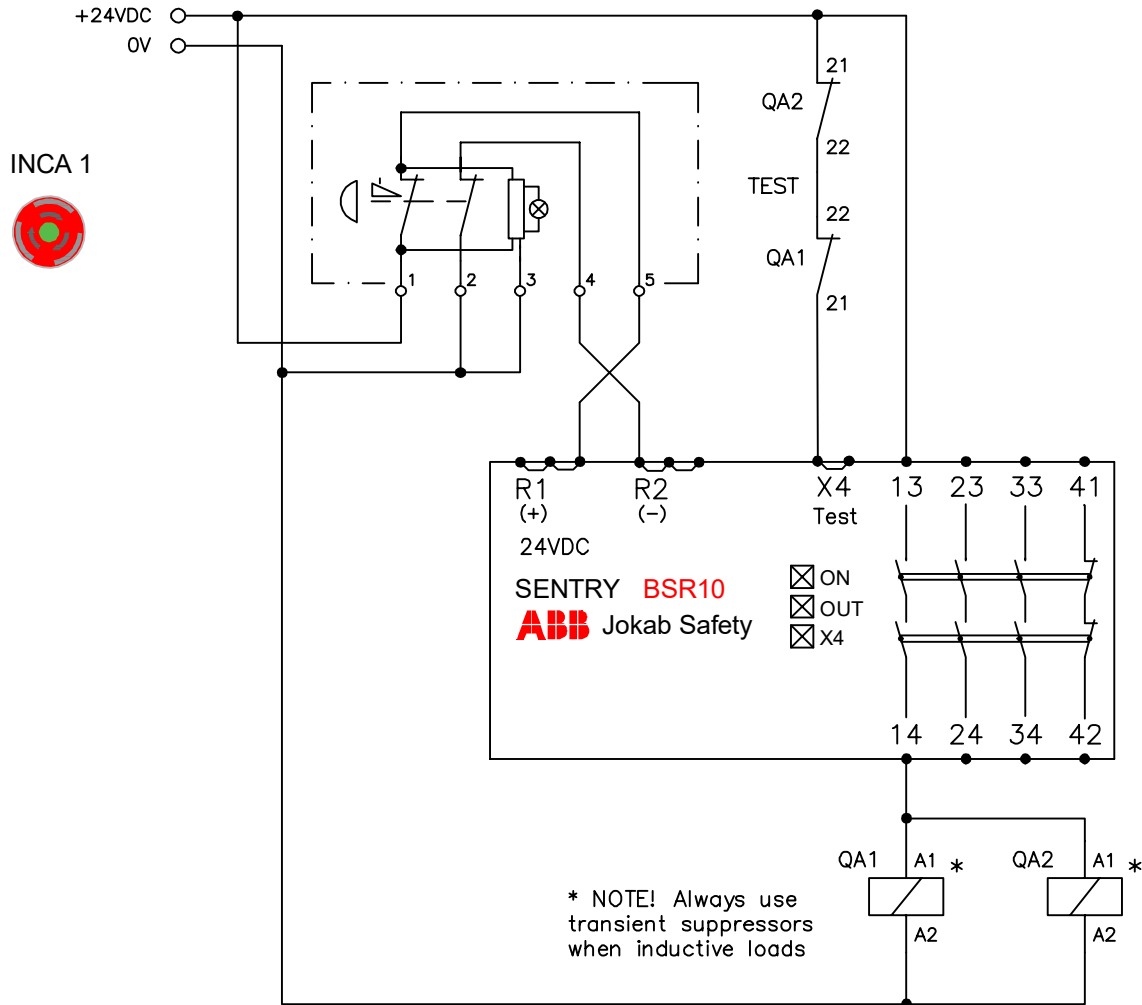


PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark BSR10 as PLUTO expansion	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210705	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010004T0002	Forts Cont

1 2 3 4 5 6 7 8 9 10



PL_e
According to
EN ISO 13849-1

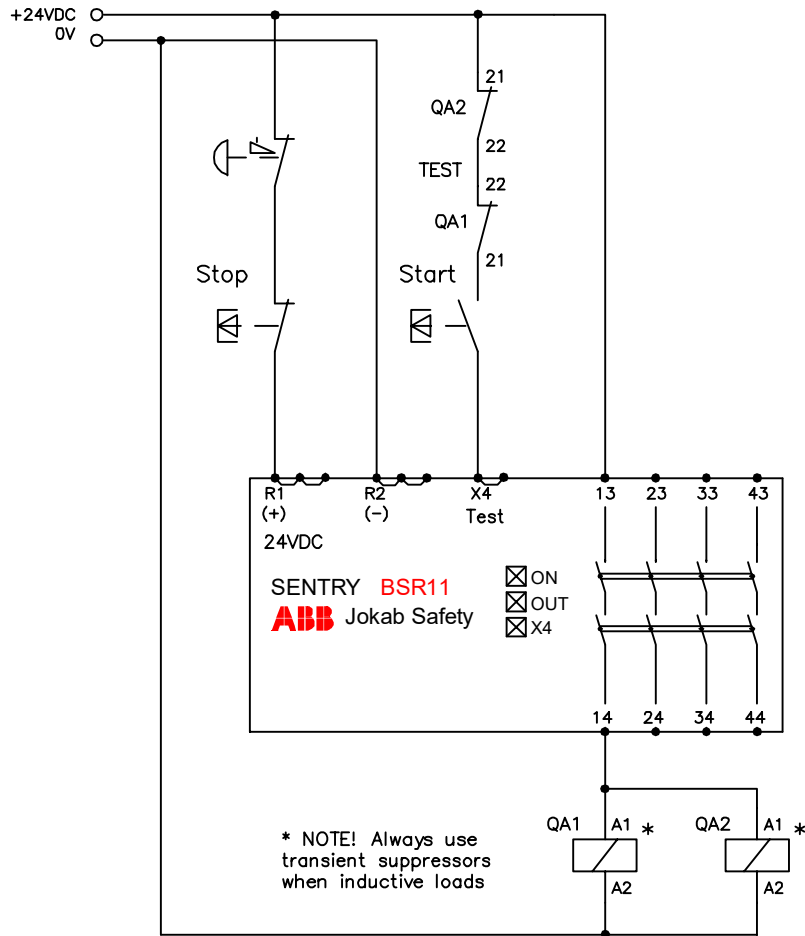
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	
BSR10 with INCA1	

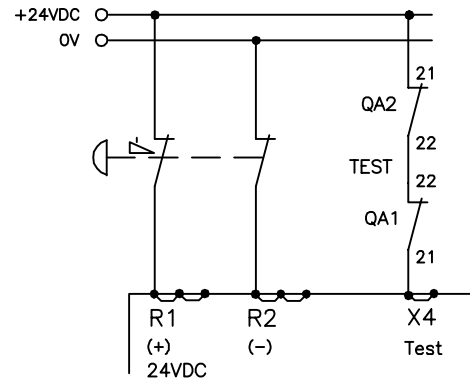


Konstr Design ABB	Godk Appr	Datum Date 20210705	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010004T0004	Forts Cont

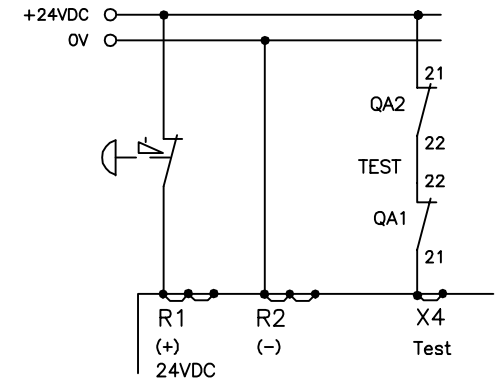
A) One signal from +24VDC, Start** and Stop



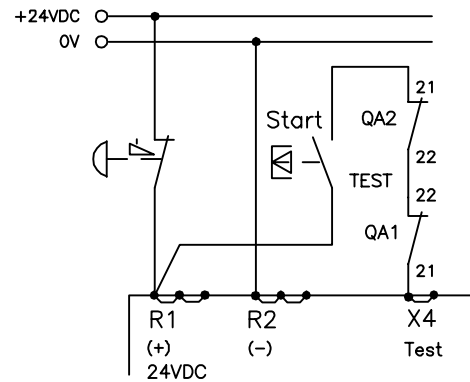
B) Two signals from +24 VDC/0 V



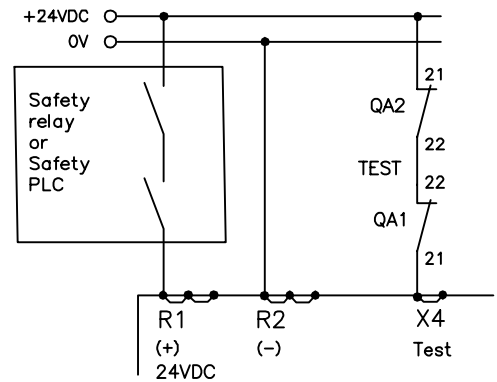
C) One signal from +24VDC



D) One signal from +24VDC, start*



E) One signal from +24VDC



** The Start function should not be used as Reset

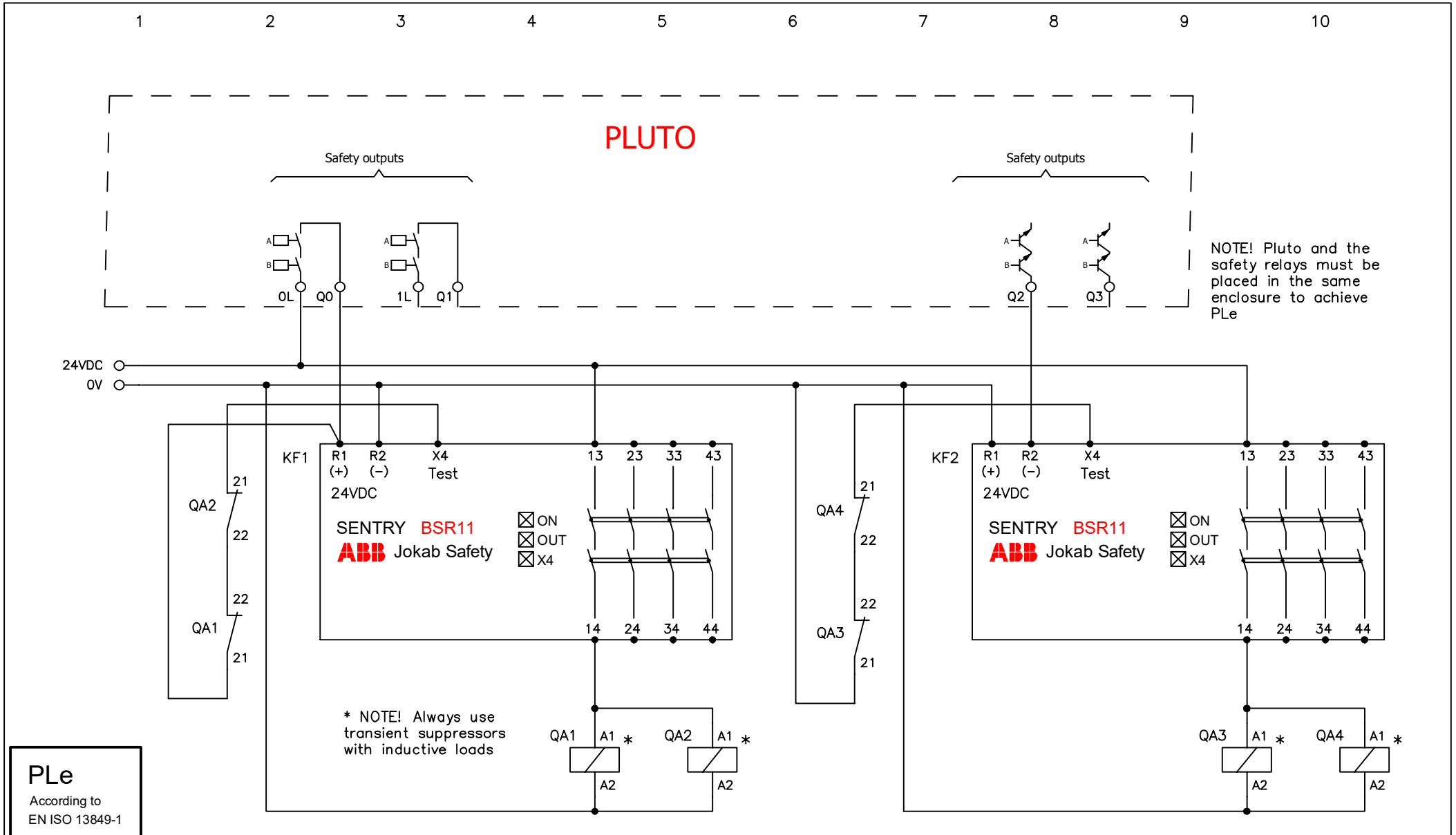
Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

BSR11 general

ABB Safety Products

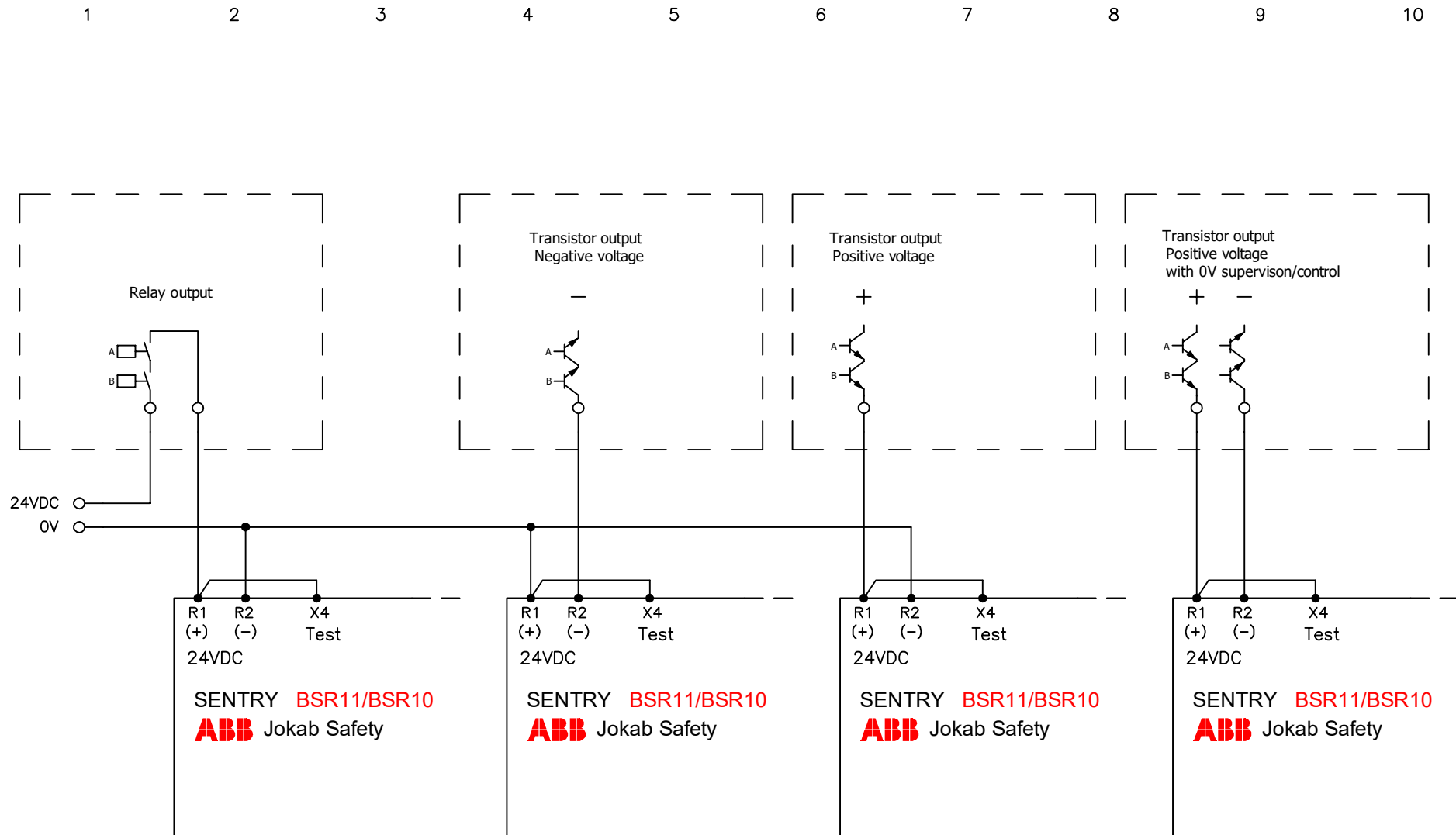
Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210707	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010005T0001	



PLe
According to
EN ISO 13849-1

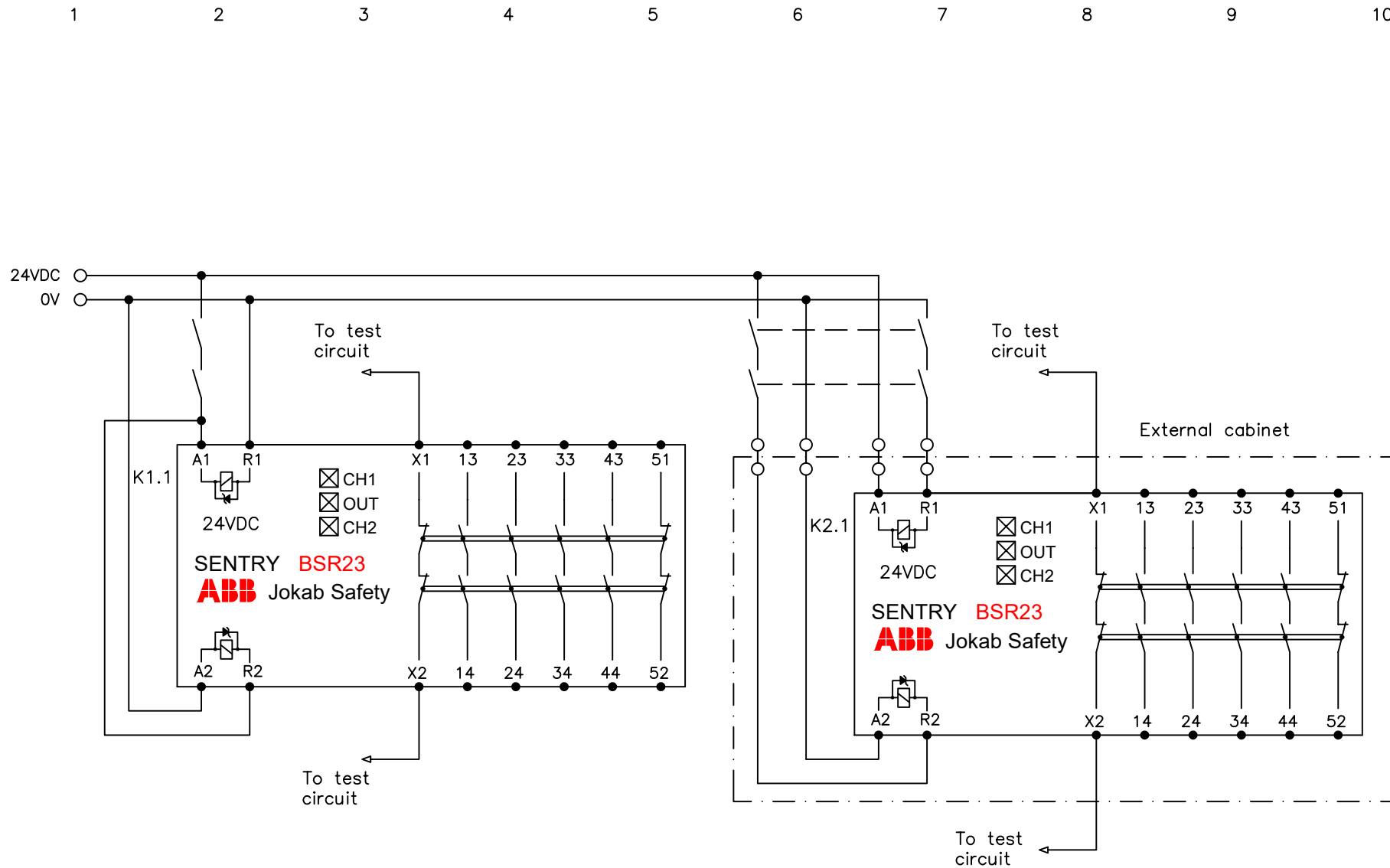
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark BSR11 as Pluto expansion	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010005T0002	Forts Cont



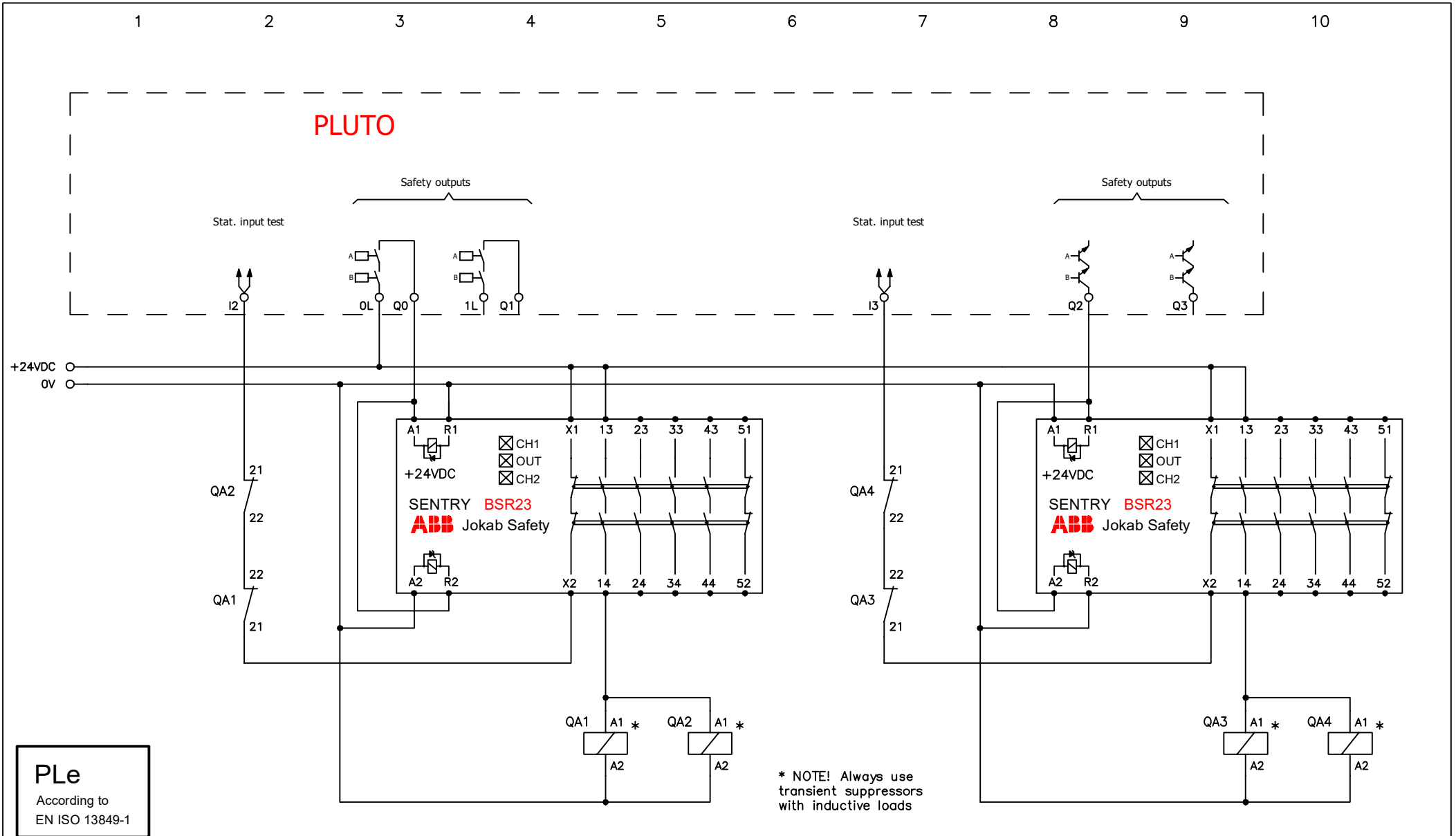
Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark BSR11/BSR10 as expansion relay	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210707	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010005T0004	Forts Cont



Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

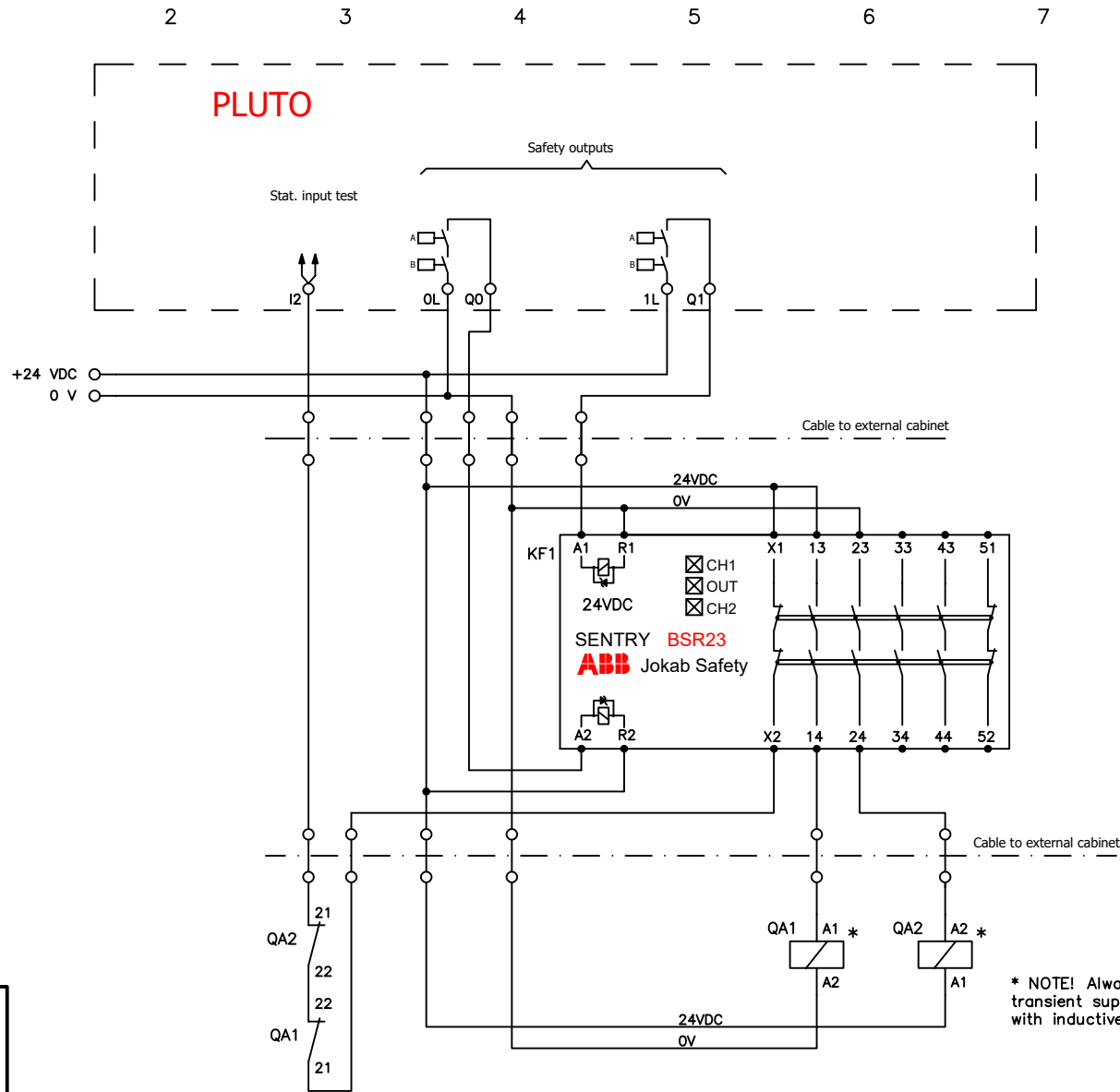
Anmärkning Remark		Konstr Design	Godk	Appr	Datum Date	Blad Sheet
BSR23 general		ABB			20210707	
		Ritad Drawn	Sidor	Pages	Ritn nr Drawing no	Forts Cont
		ABB			2TLC010006T0001	



PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark BSR23 to Pluto Q0 and Q2 outputs	ABB Safety Products		Konstr Design	Godk Appr	Datum Date	Blad Sheet
			ABB		20210706	
			Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
			ABB		2TLC010006T0002	



PLe
According to
EN ISO 13849-1

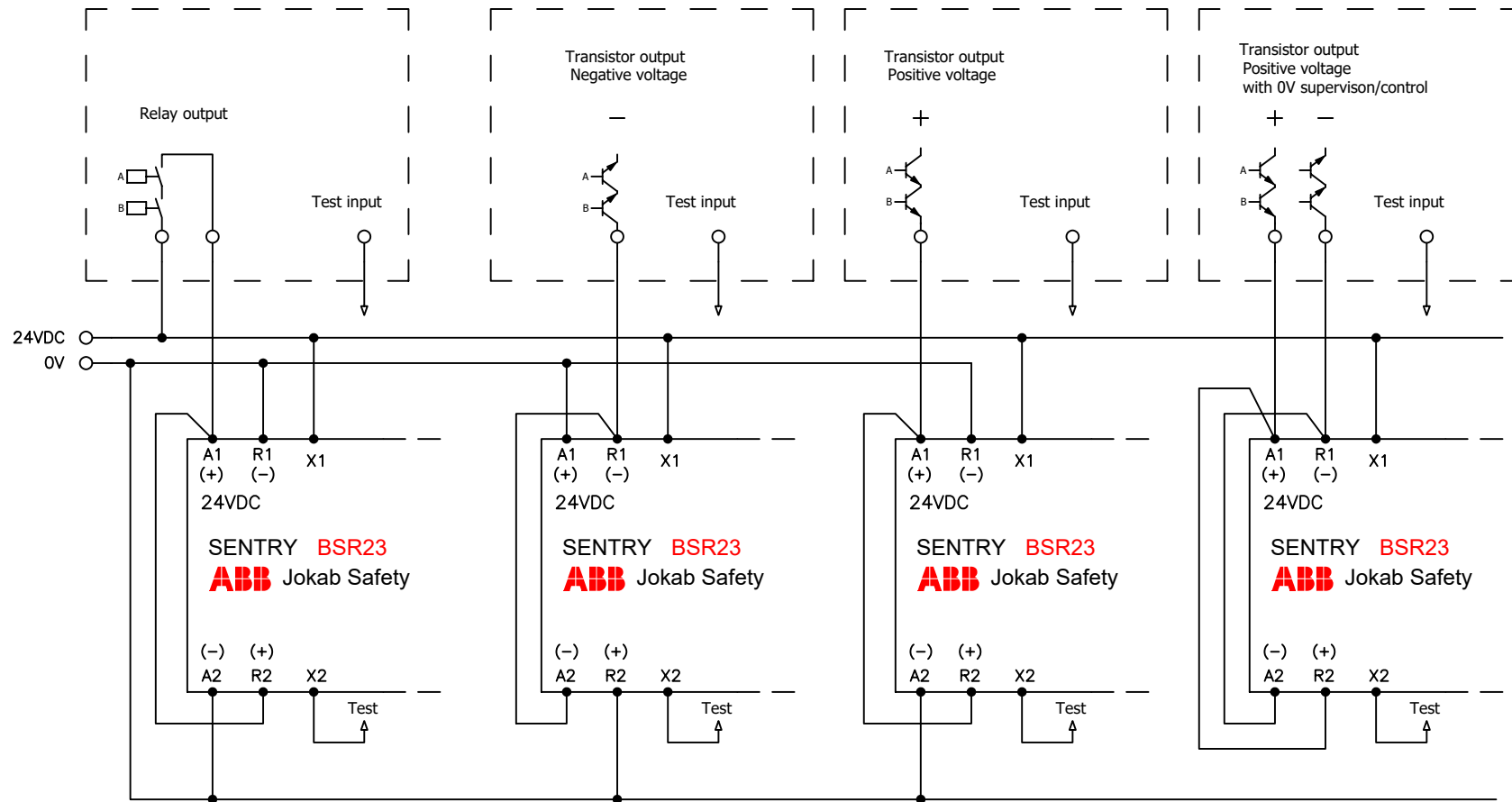
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	
BSR23 to Pluto Q0 and Q1 outputs	



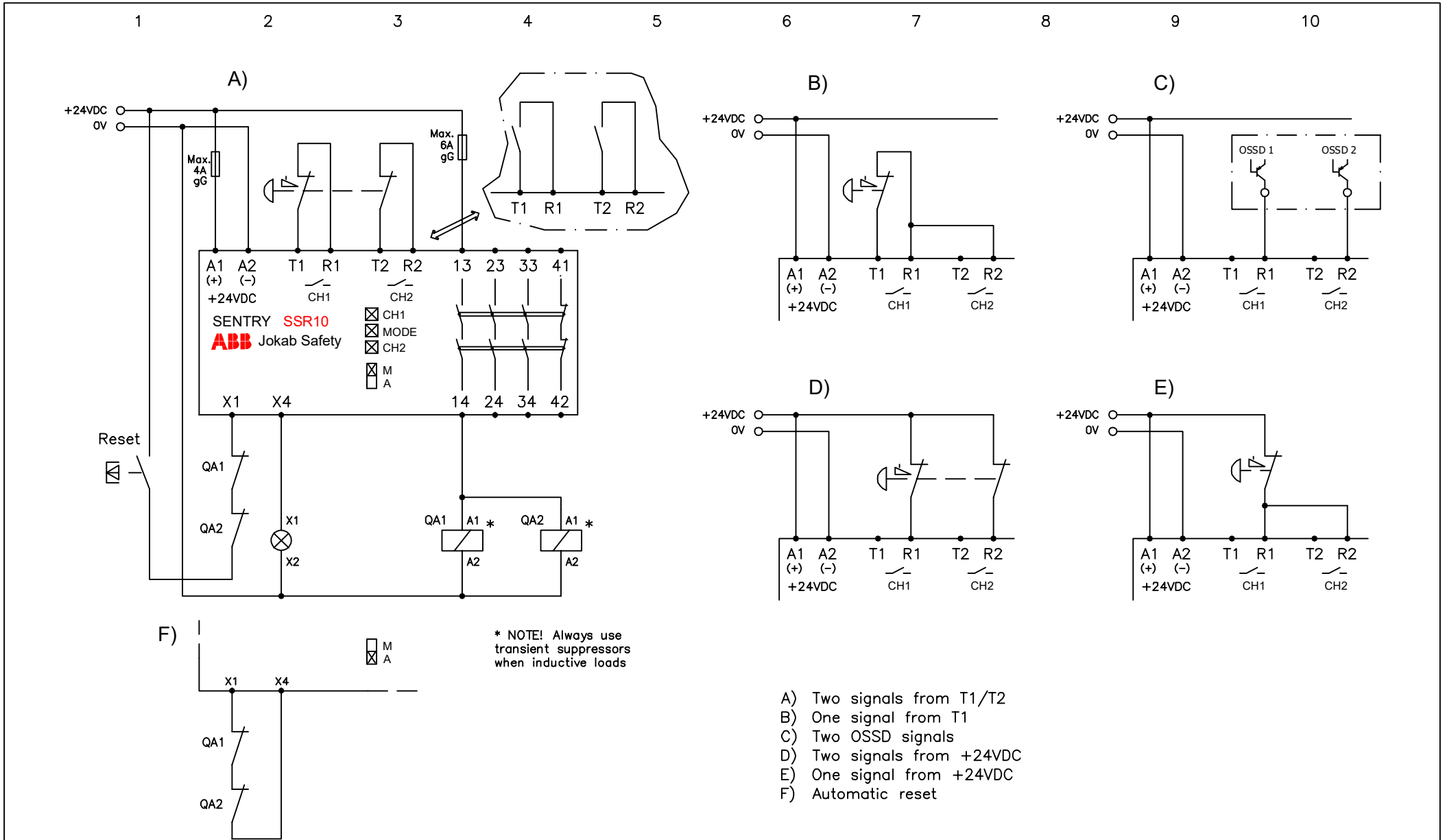
Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210706	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010006T0003	

1 2 3 4 5 6 7 8 9 10



Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark		Konstr Design	Godk Appr	Datum Date	Blad Sheet
BSR23 as expansion relay		ABB		20210707	
		Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
		ABB		2TLC010006T0004	



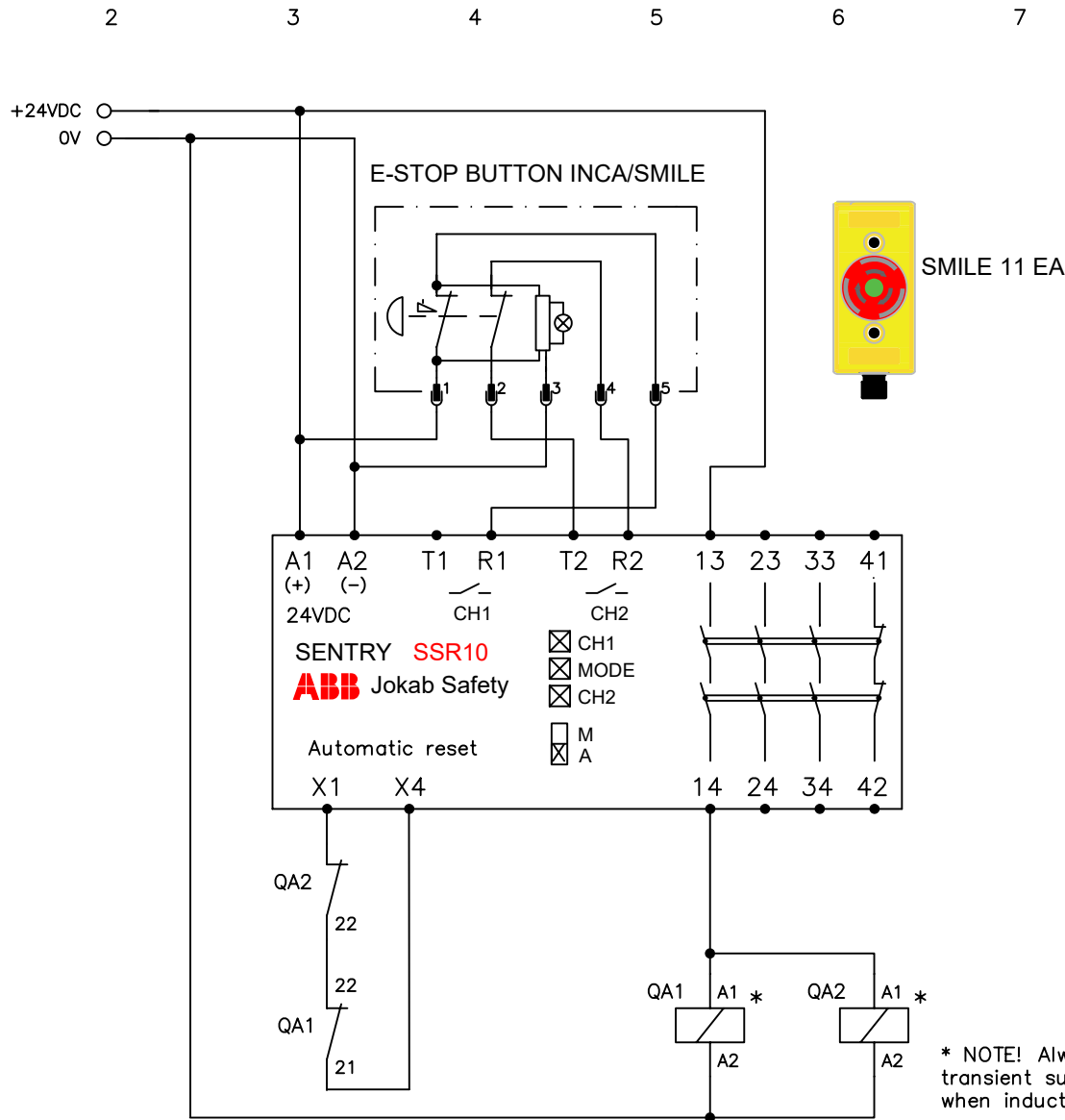
- A) Two signals from T1/T2
- B) One signal from T1
- C) Two OSSD signals
- D) Two signals from +24VDC
- E) One signal from +24VDC
- F) Automatic reset

Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	
SSR10 general	



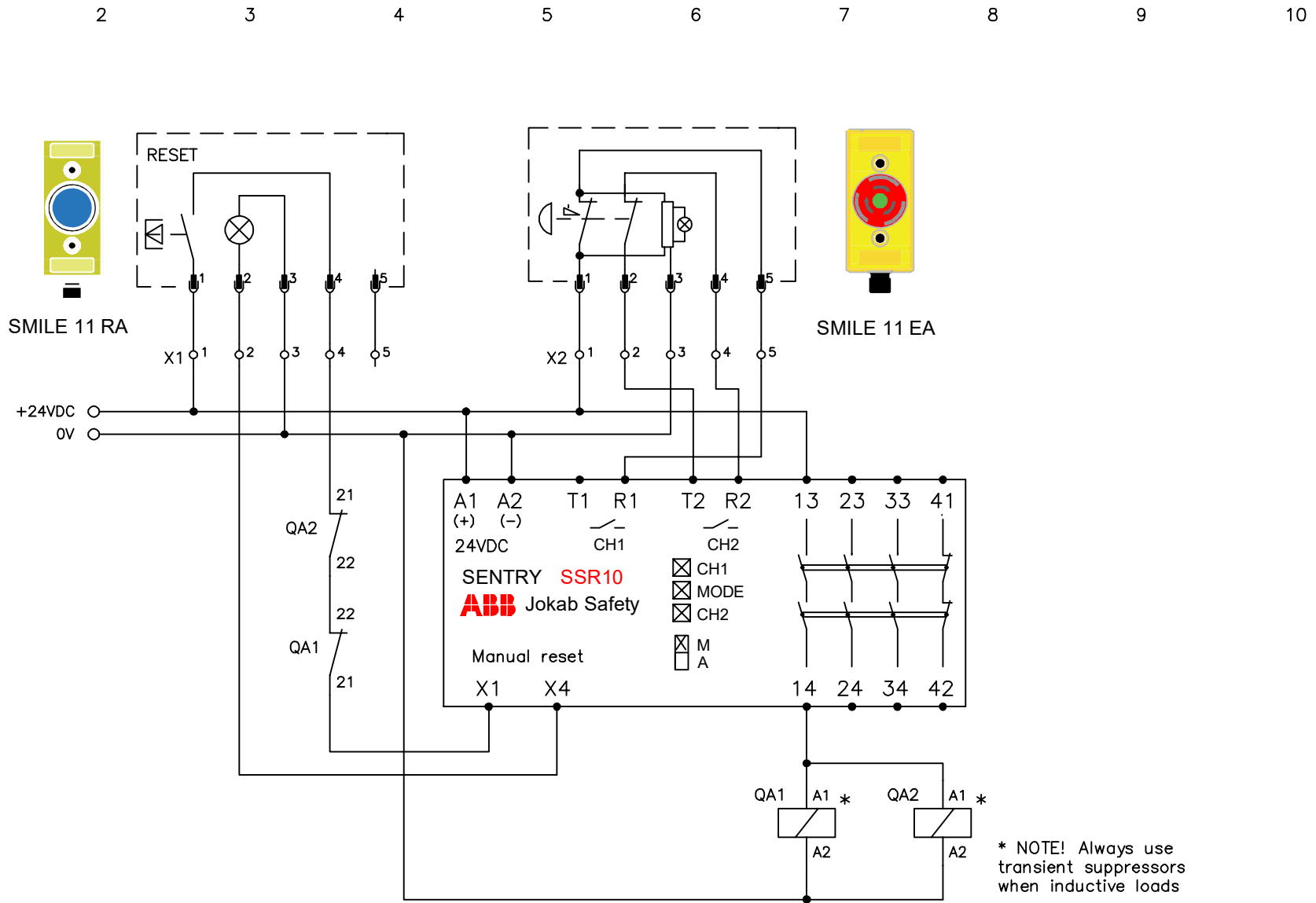
Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210707	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010007T0001	



PL_e
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10 with SMILE	ABB Safety Products	Konstr Design	Godk Appr	Datum Date	Blad Sheet
		ABB		20210706	
		Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
		ABB		2TLC010007T0003	



PLe
According to
EN ISO 13849-1

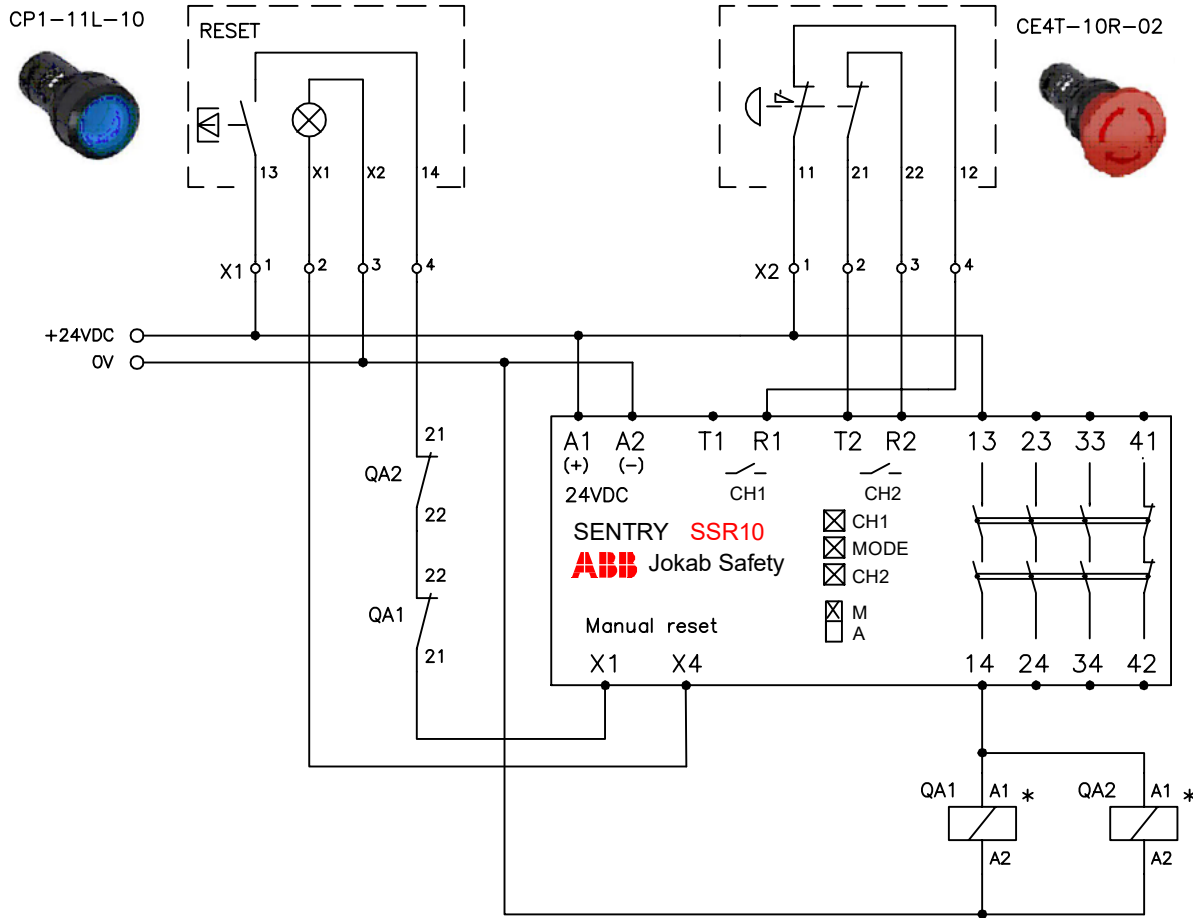
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	
SSR10 with SMILE and RESET	



Konstr Design	ABB	Godk Appr		Datum Date	20210706	Blad Sheet	
Ritad Drawn	ABB	Sidor Pages		Ritn nr Drawing no	2TLC010007T0014	Forts Cont	

1 2 3 4 5 6 7 8 9 10



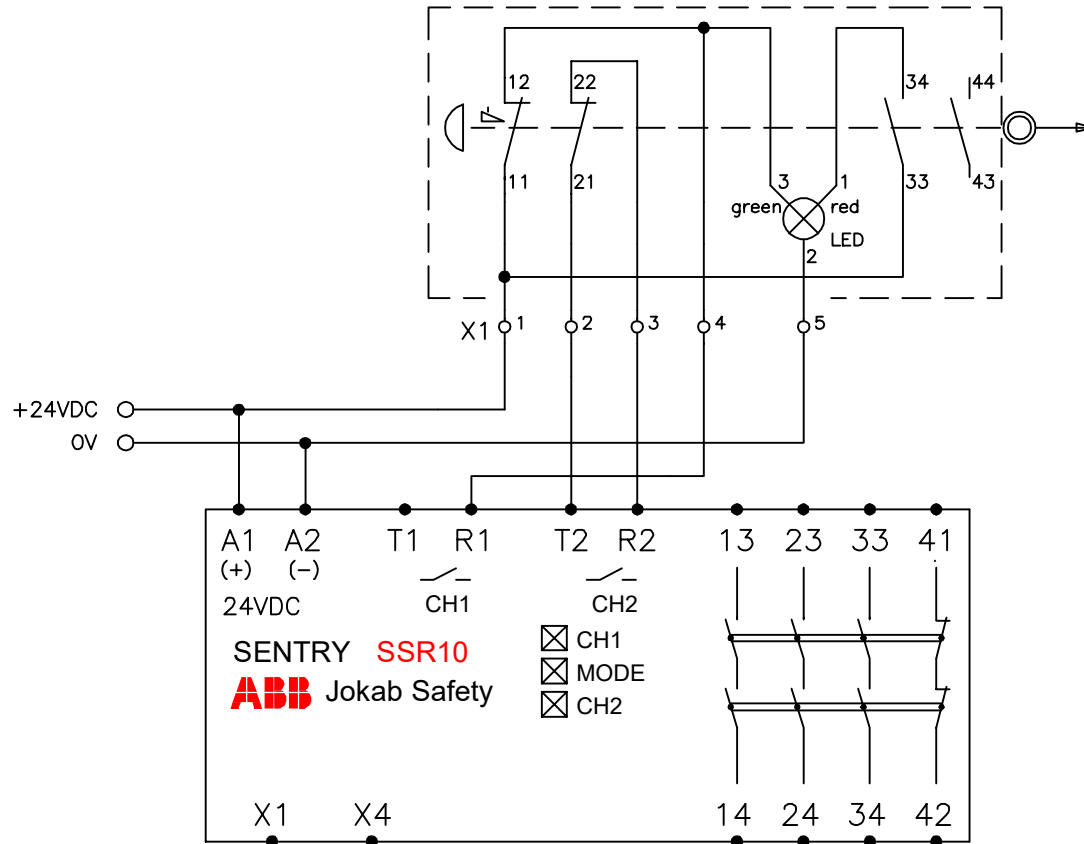
PLe
According to
EN ISO 13849-1

* NOTE! Always use transient suppressors when inductive loads

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10 with compact pilot devices	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0016	Forts Cont

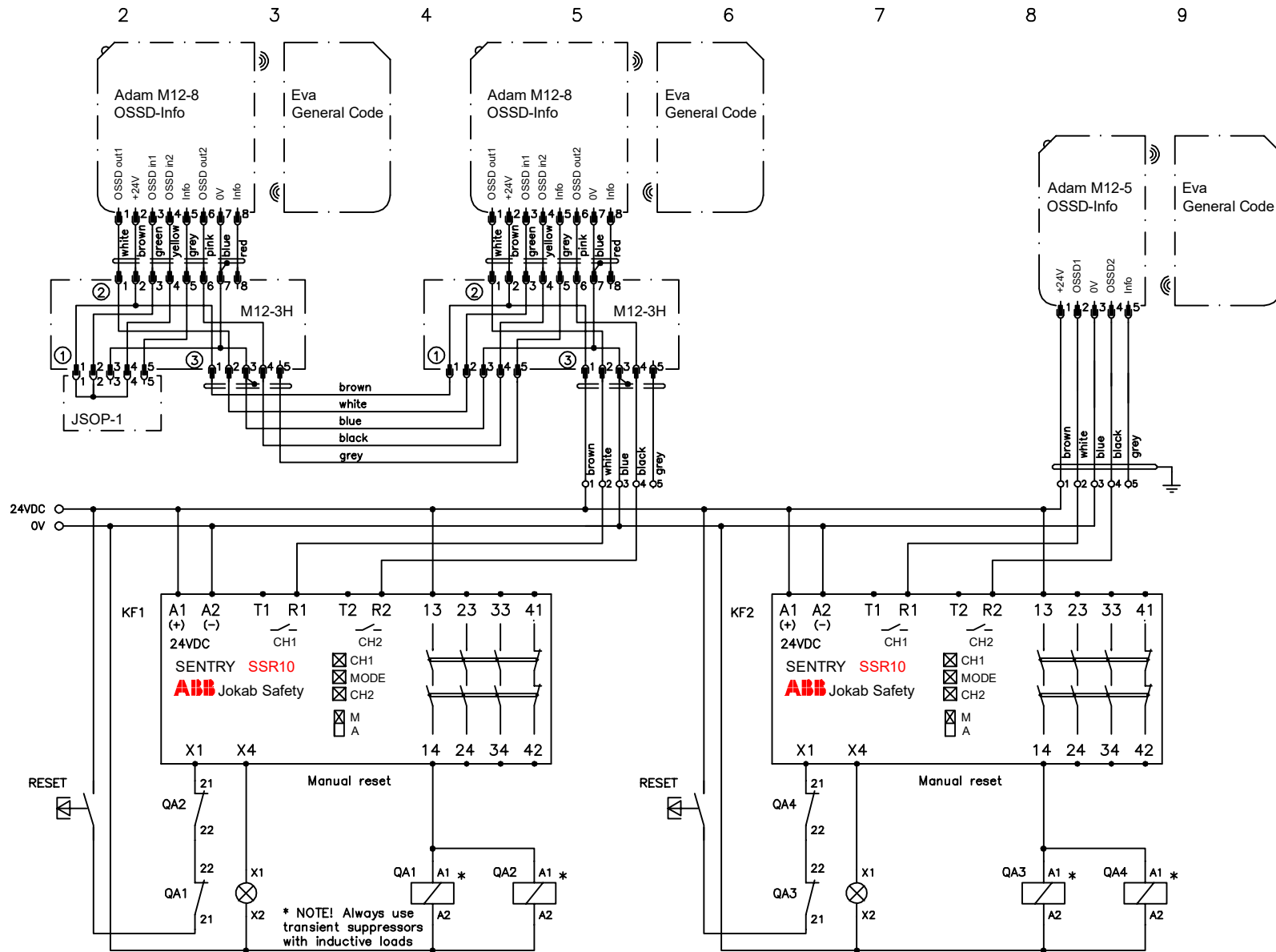
1 2 3 4 5 6 7 8 9 10



PL_e
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10 with LineStrong	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0018	Forts Cont



PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

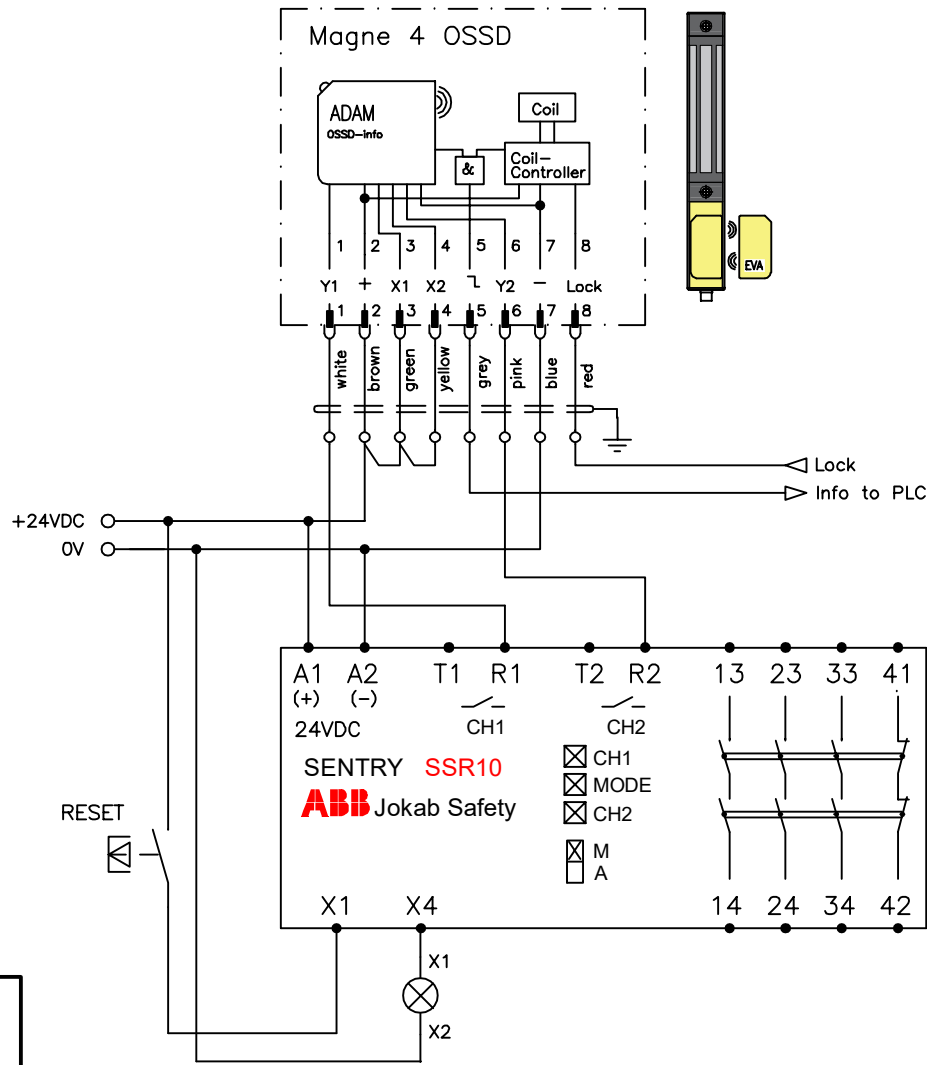
Anmärkning Remark

SSR10 with Eden OSSD



Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210706	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010007T0005	

1 2 3 4 5 6 7 8 9 10

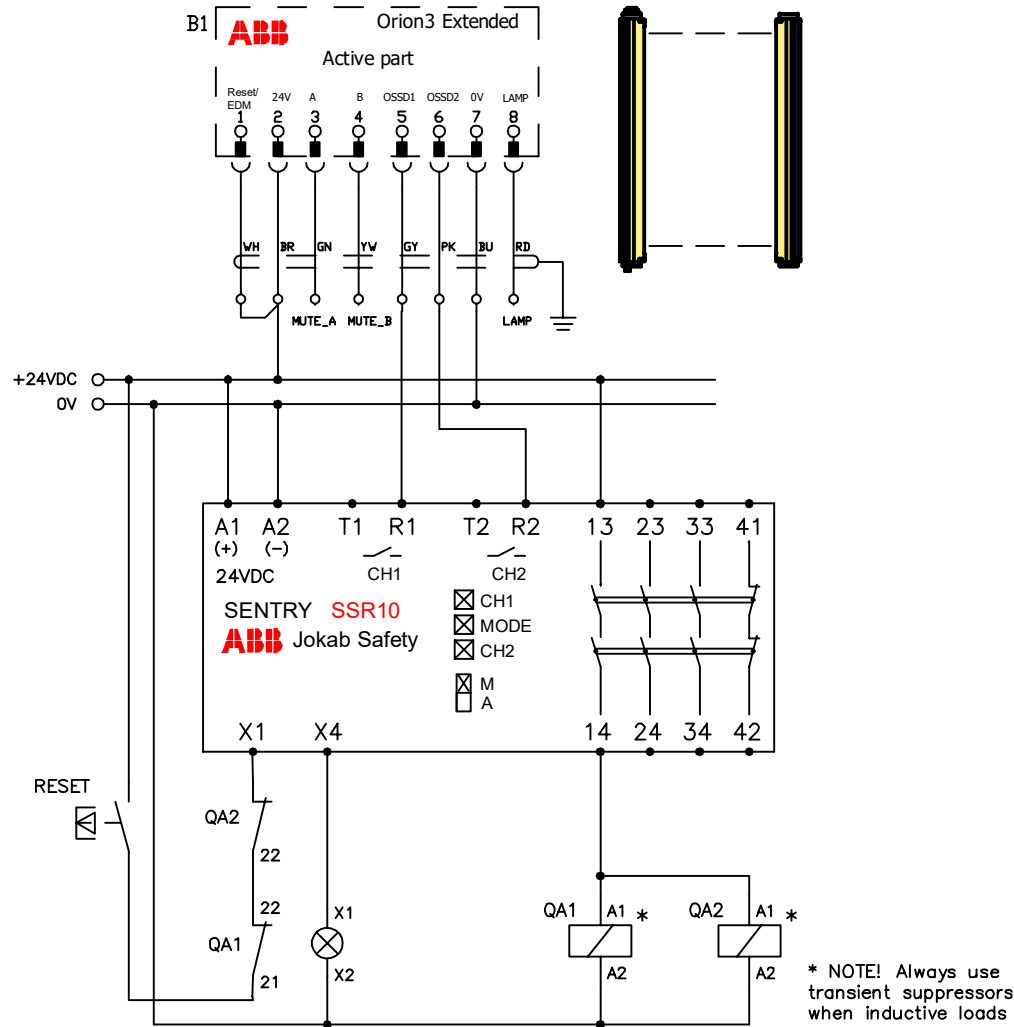


PLe
According to
EN ISO 13849-1

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Anmärkning Remark SSR10 with Magne 4 OSSD	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0013	Forts Cont

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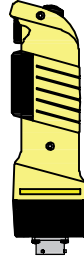
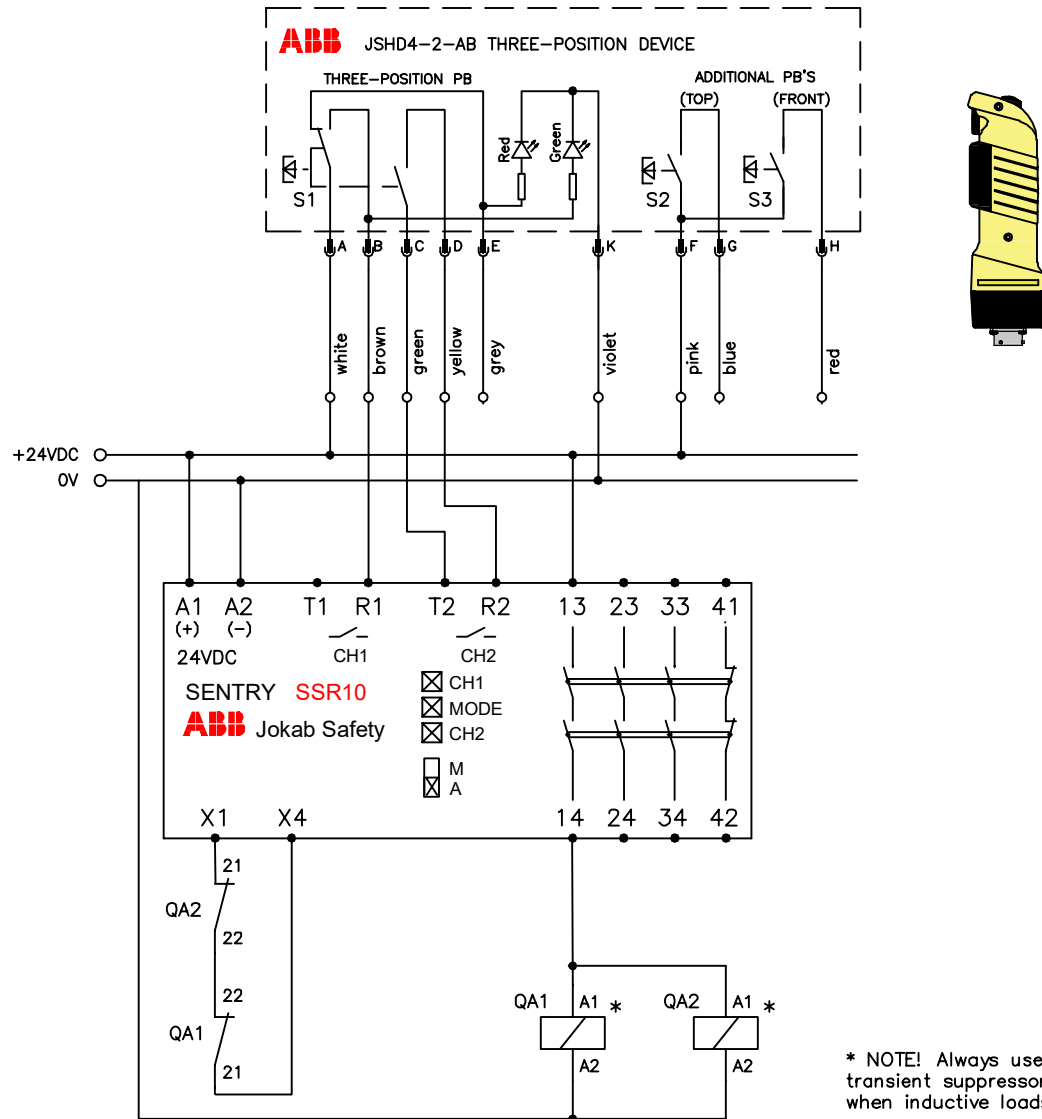


PL_e
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10 with ORION3 Extended	ABB Safety Products		Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
			Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0004	Forts Cont

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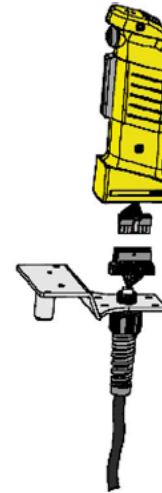
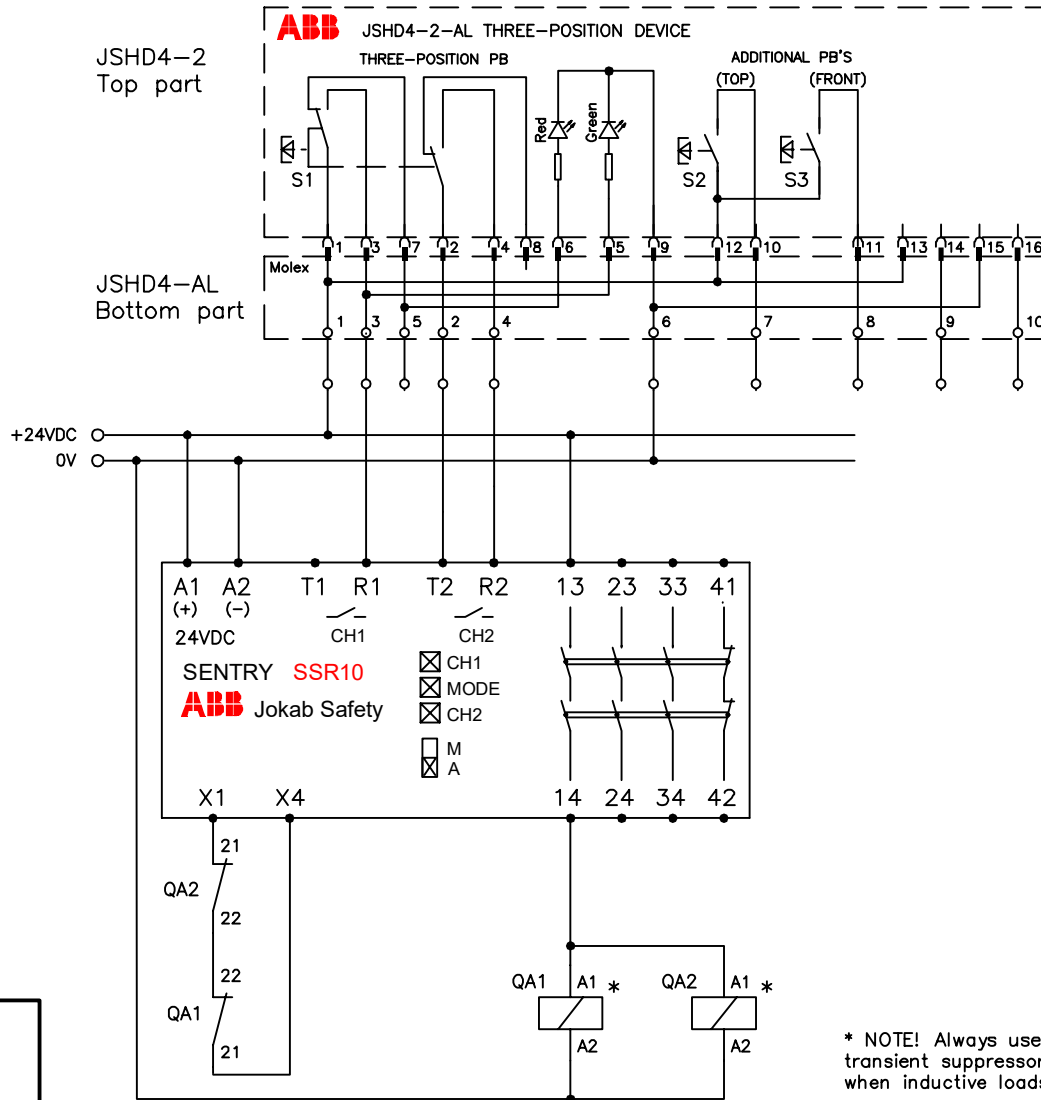


PLe
 According to
 EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	SSR10 with JSHD4-2-AB	 Safety Products	Konstr Design	Godk Appr	Datum Date	Blad Sheet
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			Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
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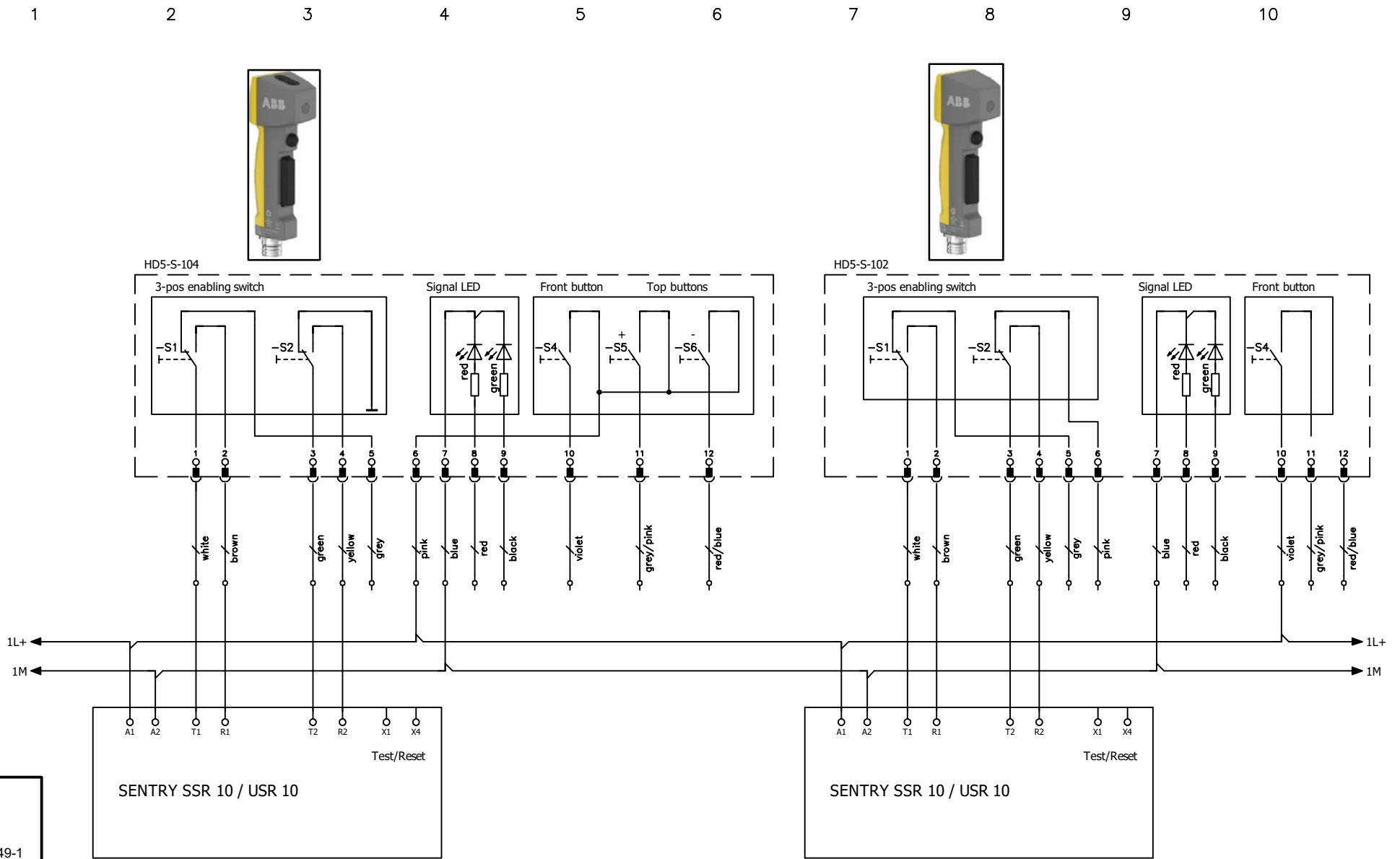


PLe
According to
EN ISO 13849-1

* NOTE! Always use transient suppressors when inductive loads

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

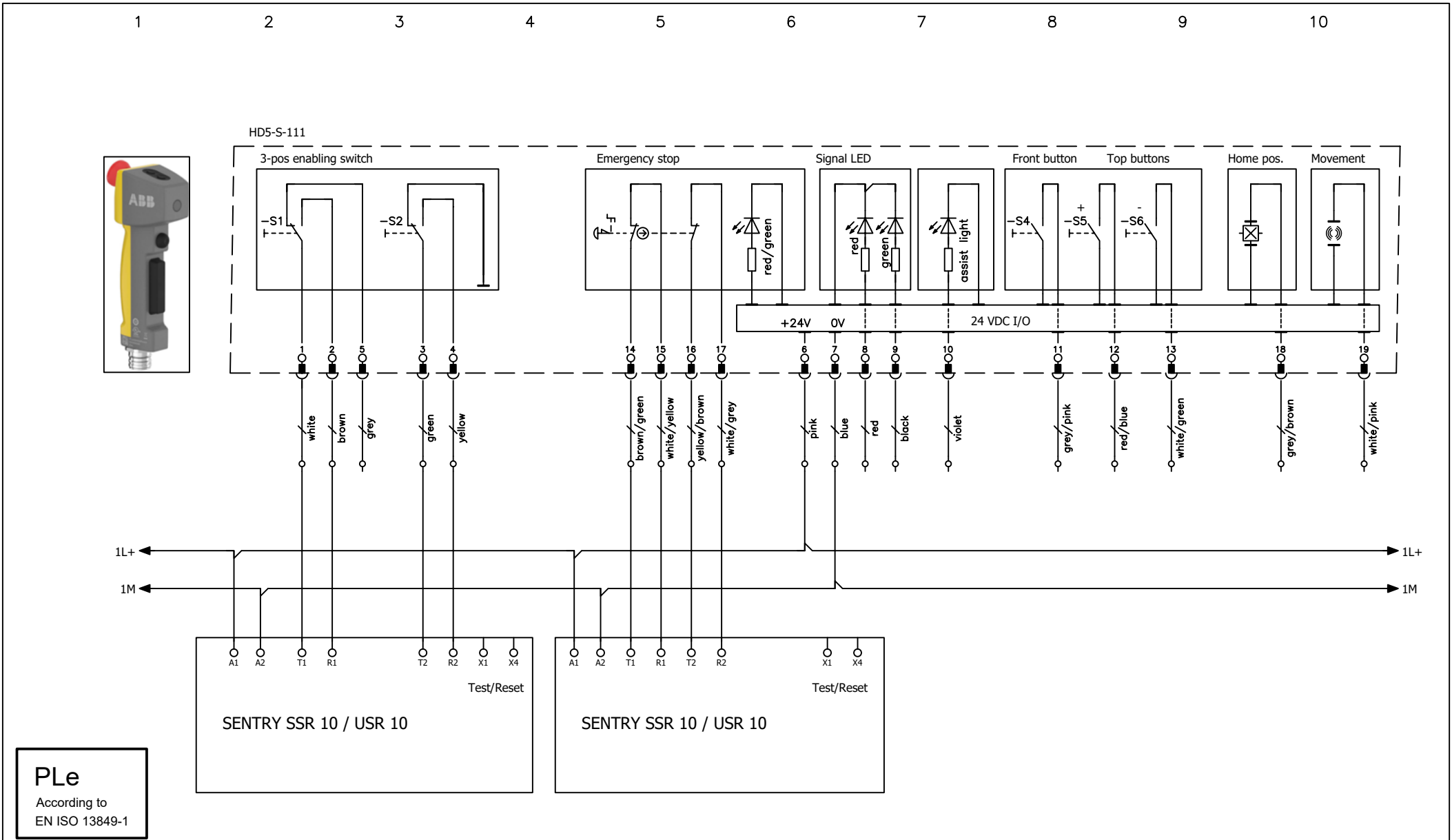
Anmärkning Remark	SSR10 with JSHD4-2-AL	 Safety Products	Konstr Design	Godk Appr	Datum Date	Blad Sheet
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			Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
			ABB		2TLC010007T0009	



PL_e
According to
EN ISO 13849-1

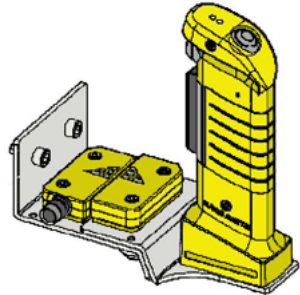
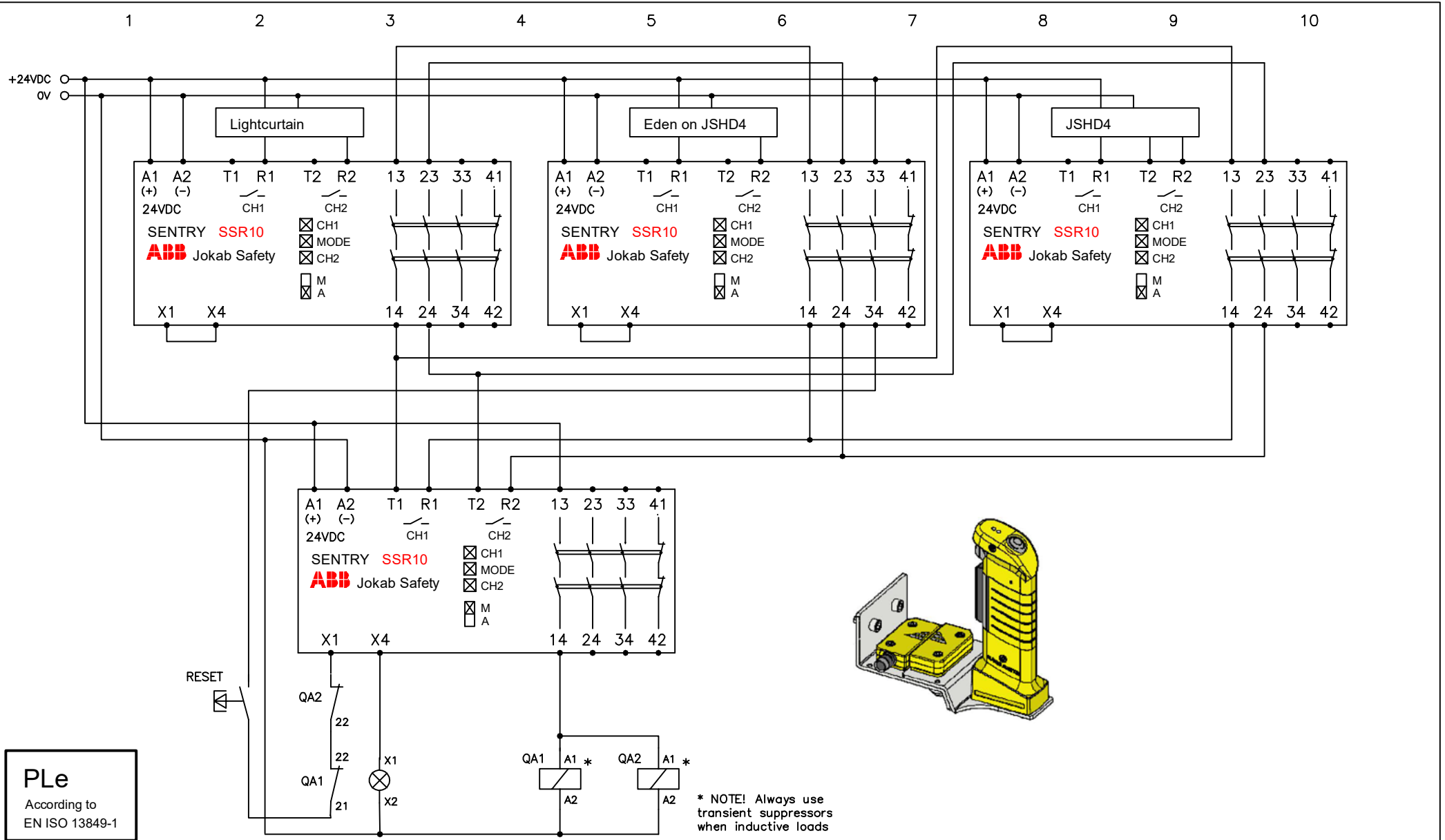
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10/USR10 with HD5-S-104 and -102	ABB Safety Products		Konstr Design	Godk Appr	Datum Date	Blad Sheet
			ABB		20210706	
		Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont	
		ABB		2TLC010007T0105		



Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10/USR10 with HD5-S-111			Konstr Design	Godk	Appr	Datum Date	Blad Sheet
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			Ritad Drawn	Sidor	Pages	Ritn nr Drawing no	Forts Cont
			ABB			2TLC010007T0106	



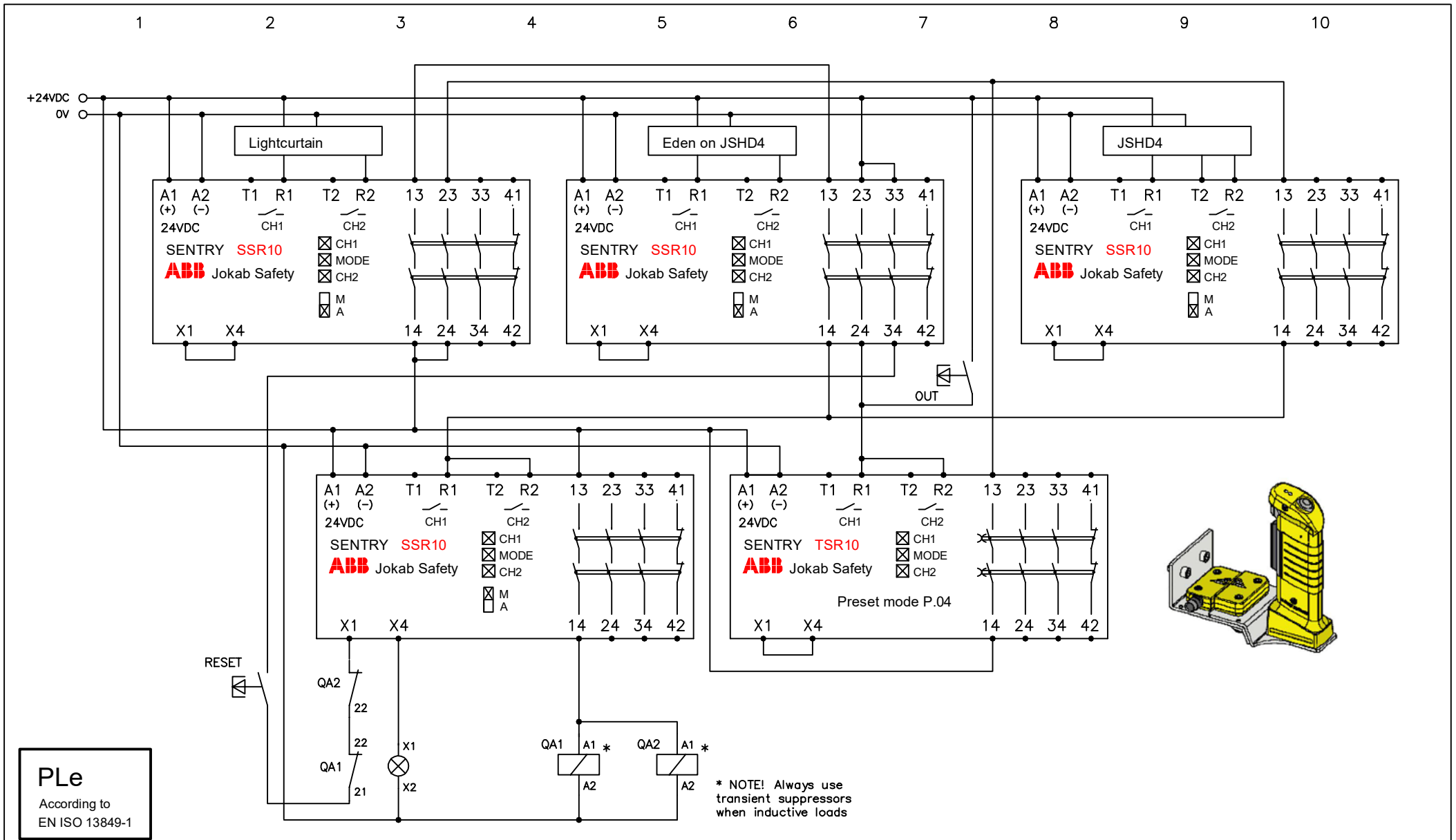
PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning	Remark
SSR10 with bypass from a JSHD4	



Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210706	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010007T0010	



PLe
According to
EN ISO 13849-1

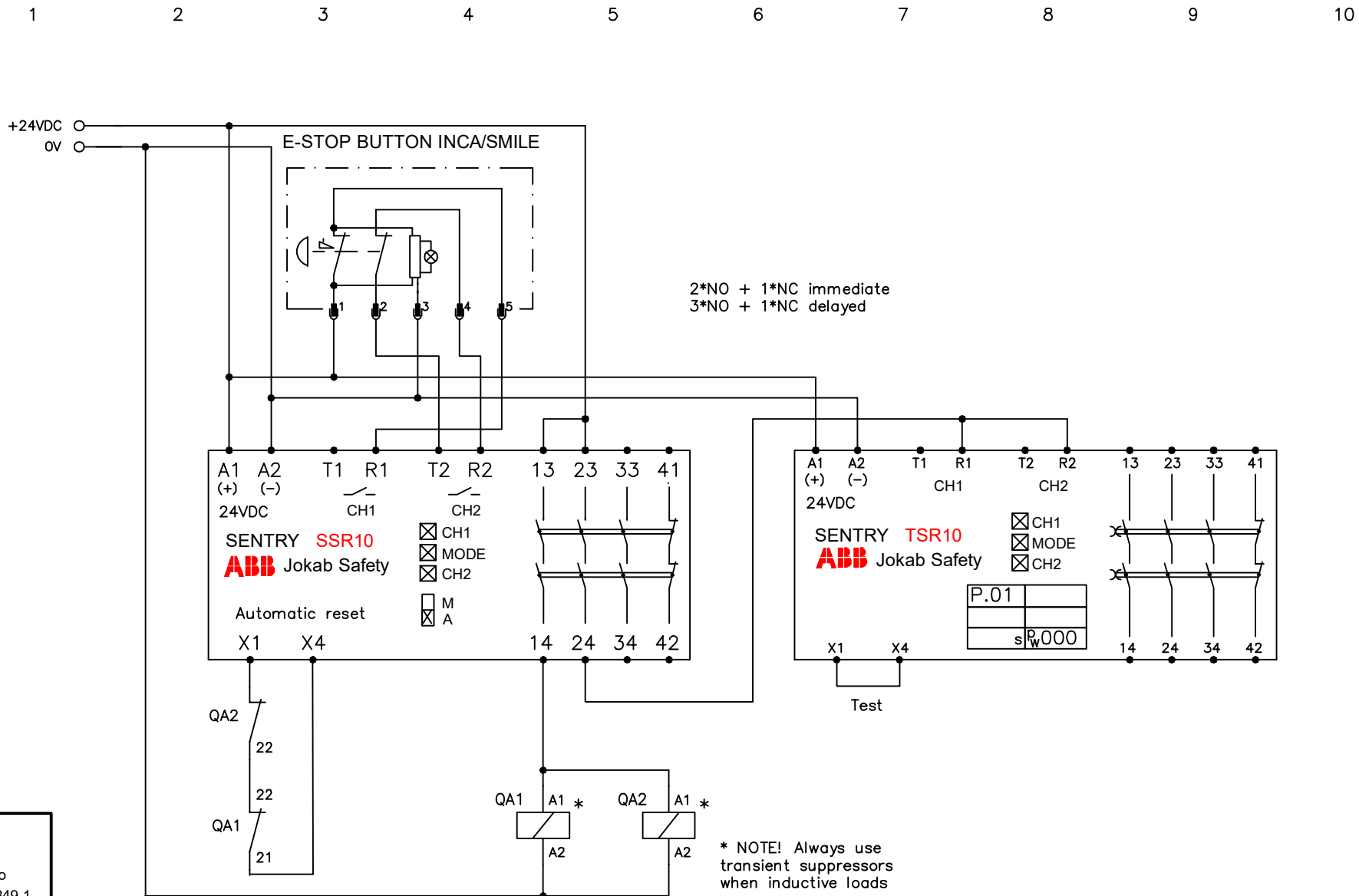
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

SSR10 with time limited bypass

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0011	Forts Cont



PL_e
According to
EN ISO 13849-1

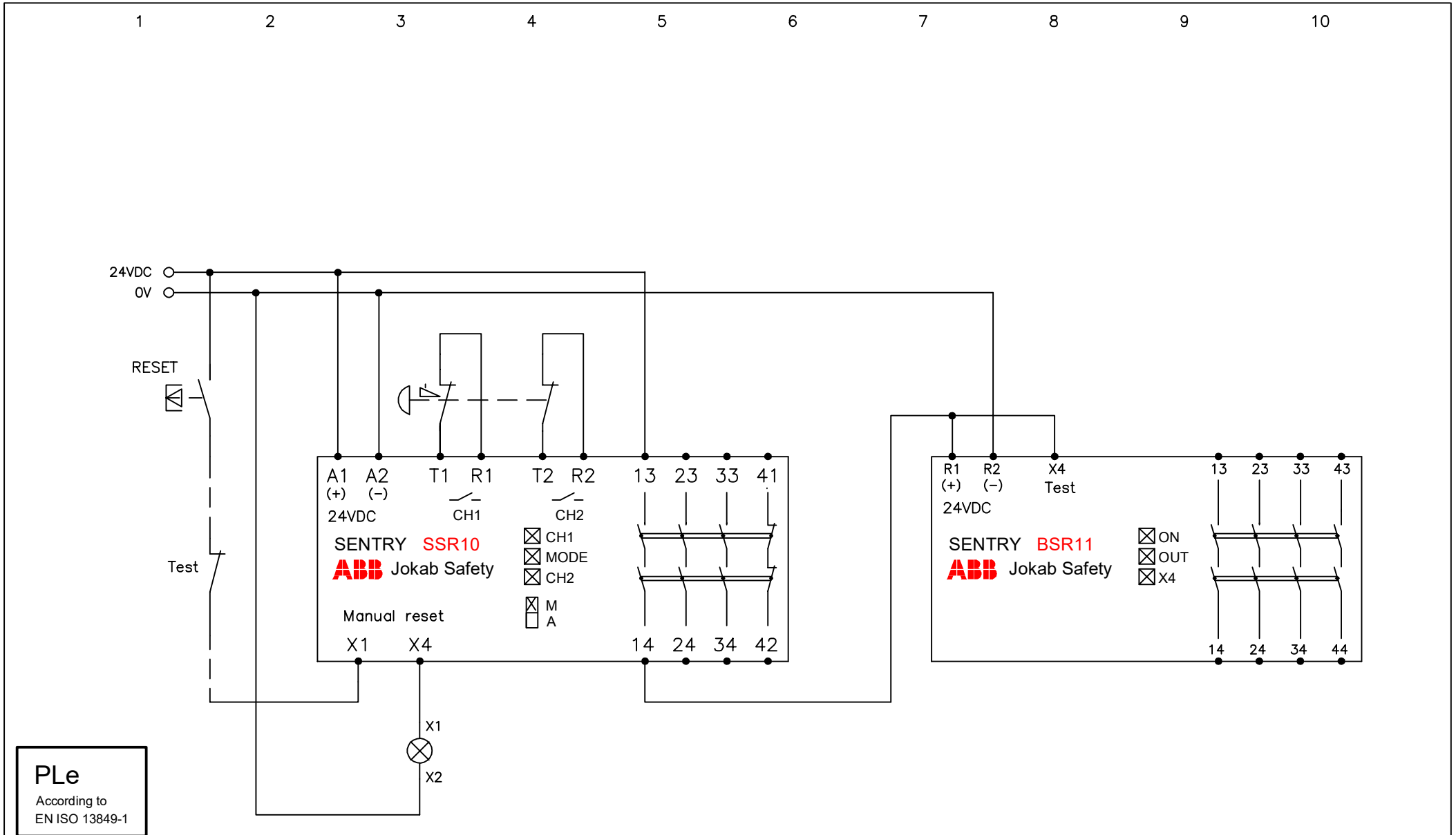
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

SSR10 expansion TSR10

ABB Safety Products

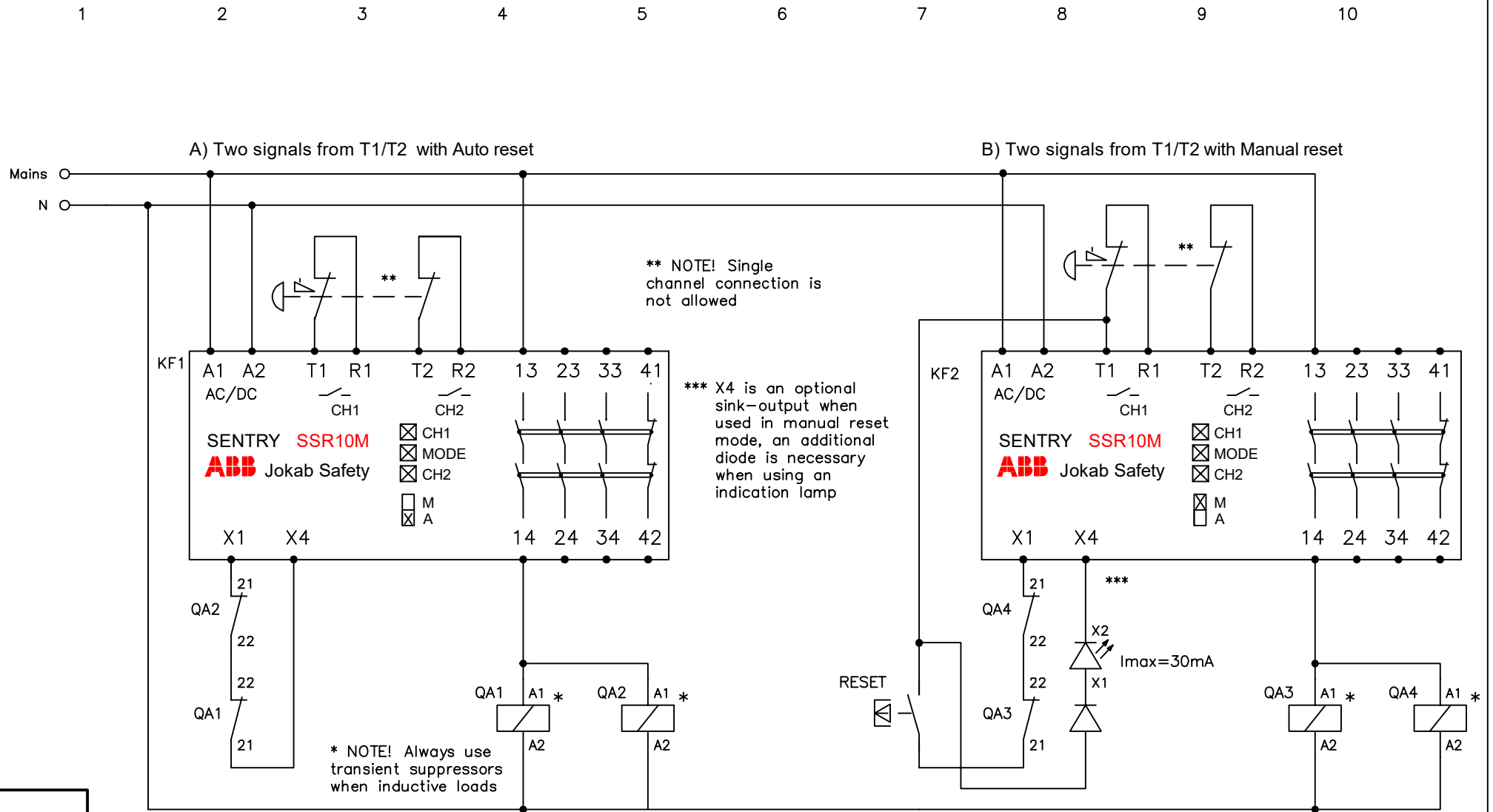
Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0007	Forts Cont



PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10 expansion BSR11	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010007T0017	Forts Cont



PL_e
According to
EN ISO 13849-1

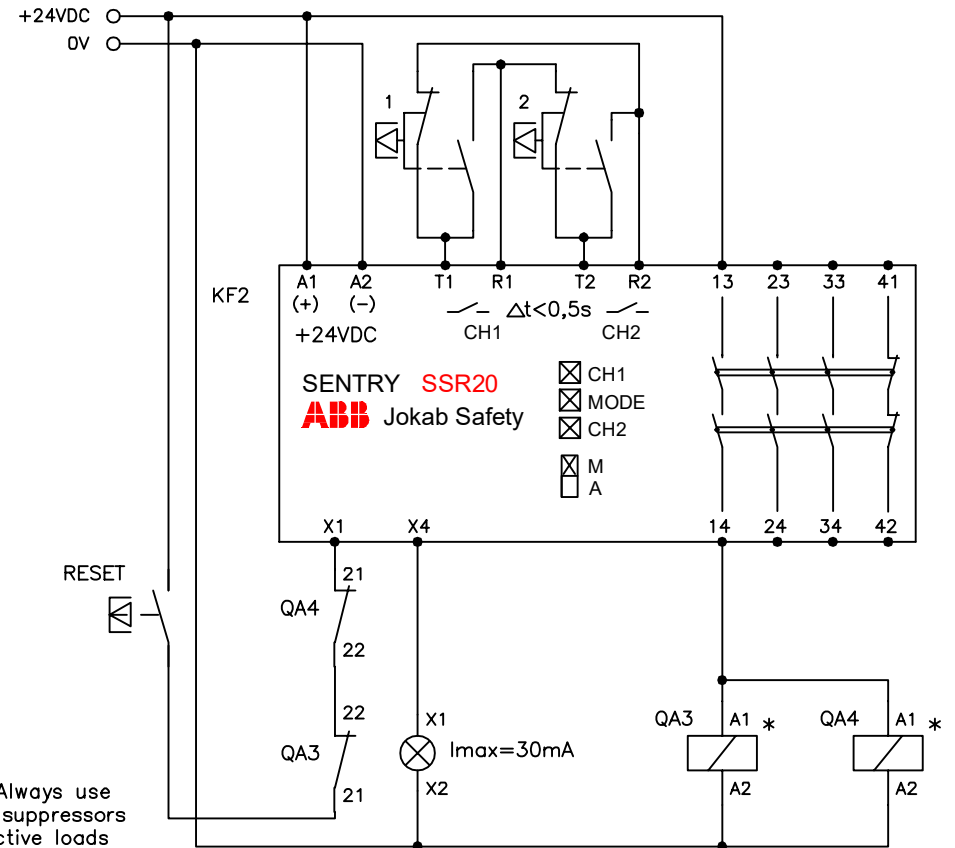
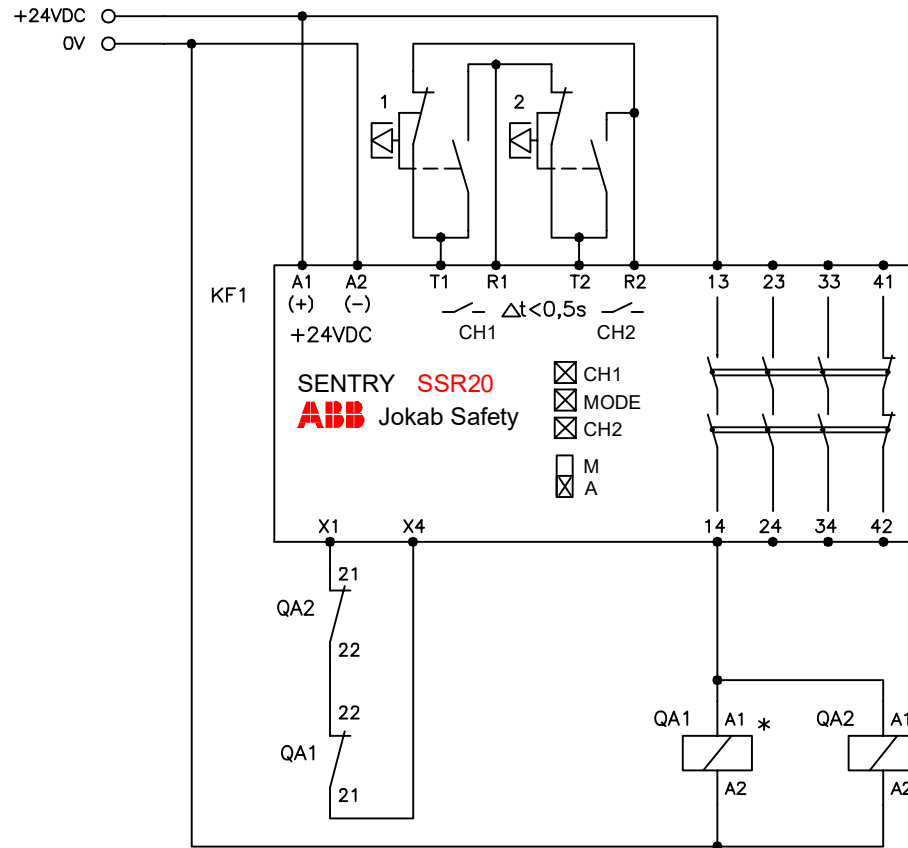
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR10M general	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210707	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010008T0001	Forts Cont

1 2 3 4 5 6 7 8 9 10

A) Two-hand device / Auto reset

A) Two-hand device / Manual reset



PL_e
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

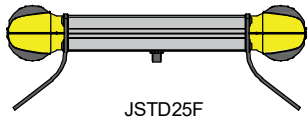
Anmärkning Remark

SSR20 general

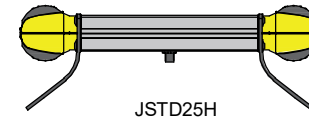
ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010009T0001	Forts Cont

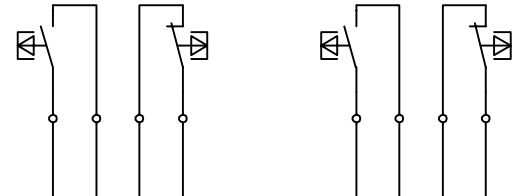
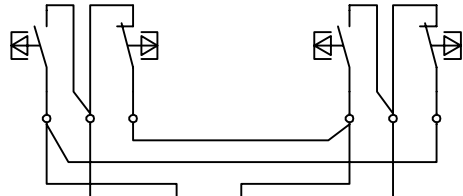
1 2 3 4 5 6 7 8 9 10



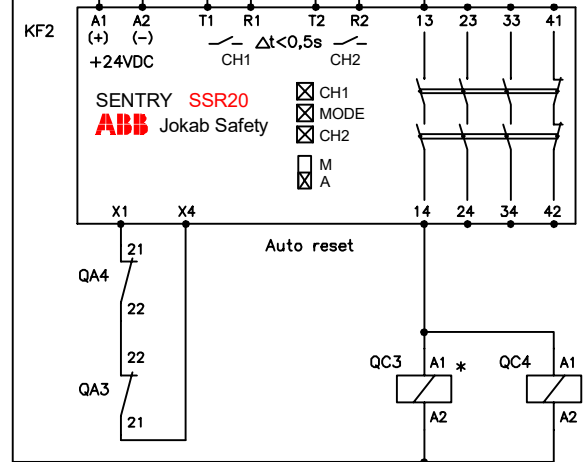
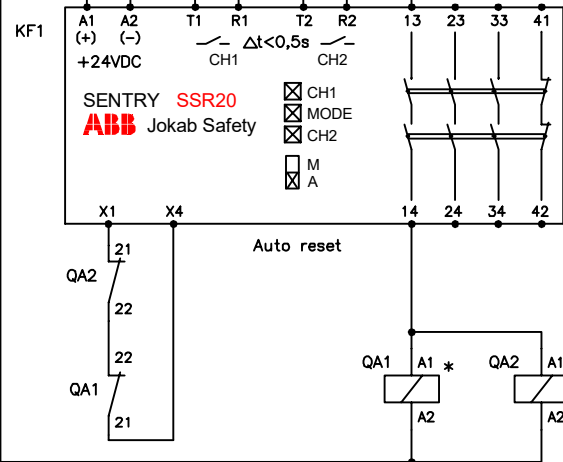
JSTD25F



JSTD25H



+24VDC
0V

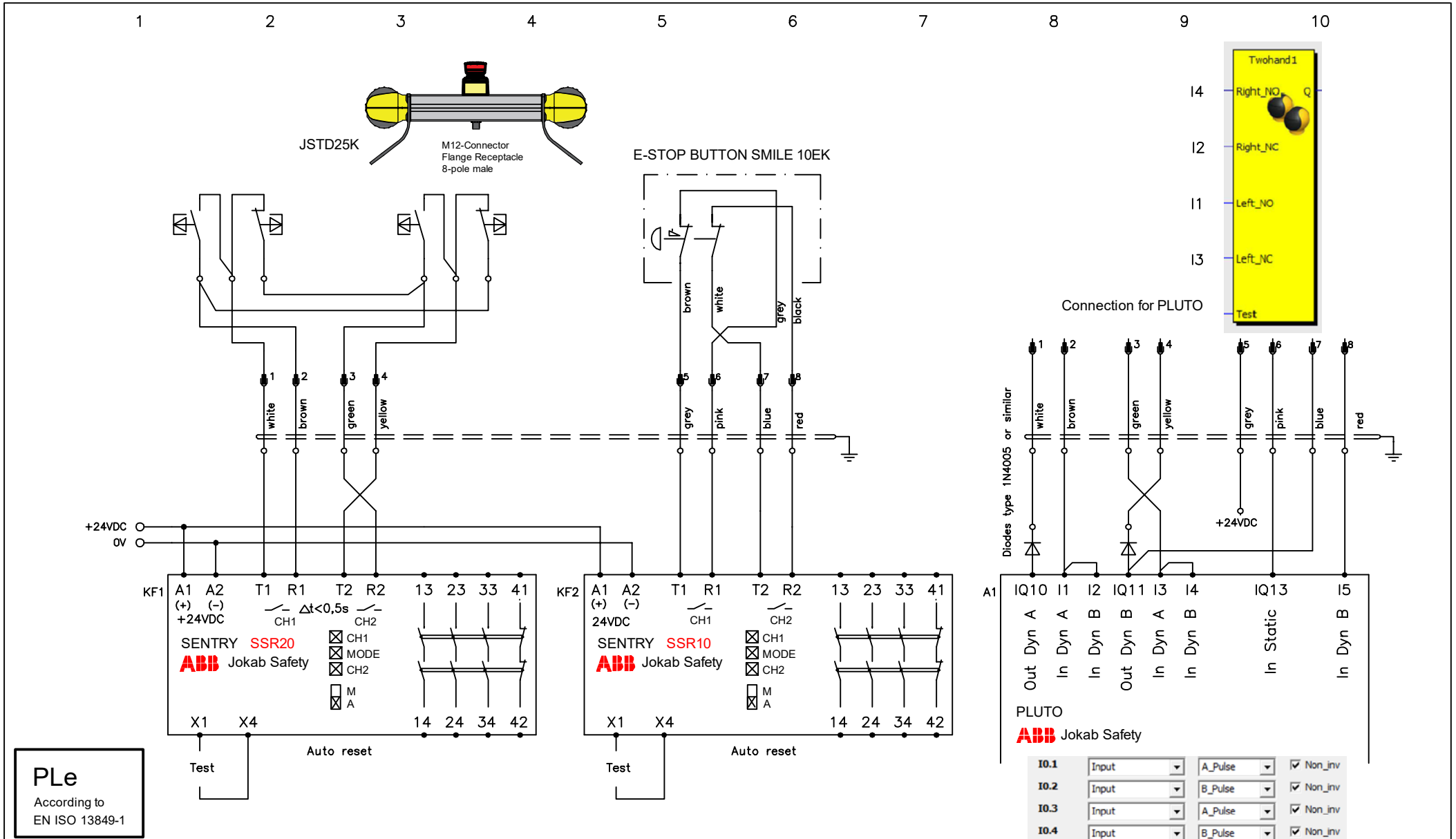


* NOTE! Always use transient suppressors with inductive loads

PL_e
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR20 with JSTD25F and H			Konstr Design	Godk Appr	Datum Date	Blad Sheet
			ABB		20210706	
			Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
			ABB		2TLC010009T0002	



Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

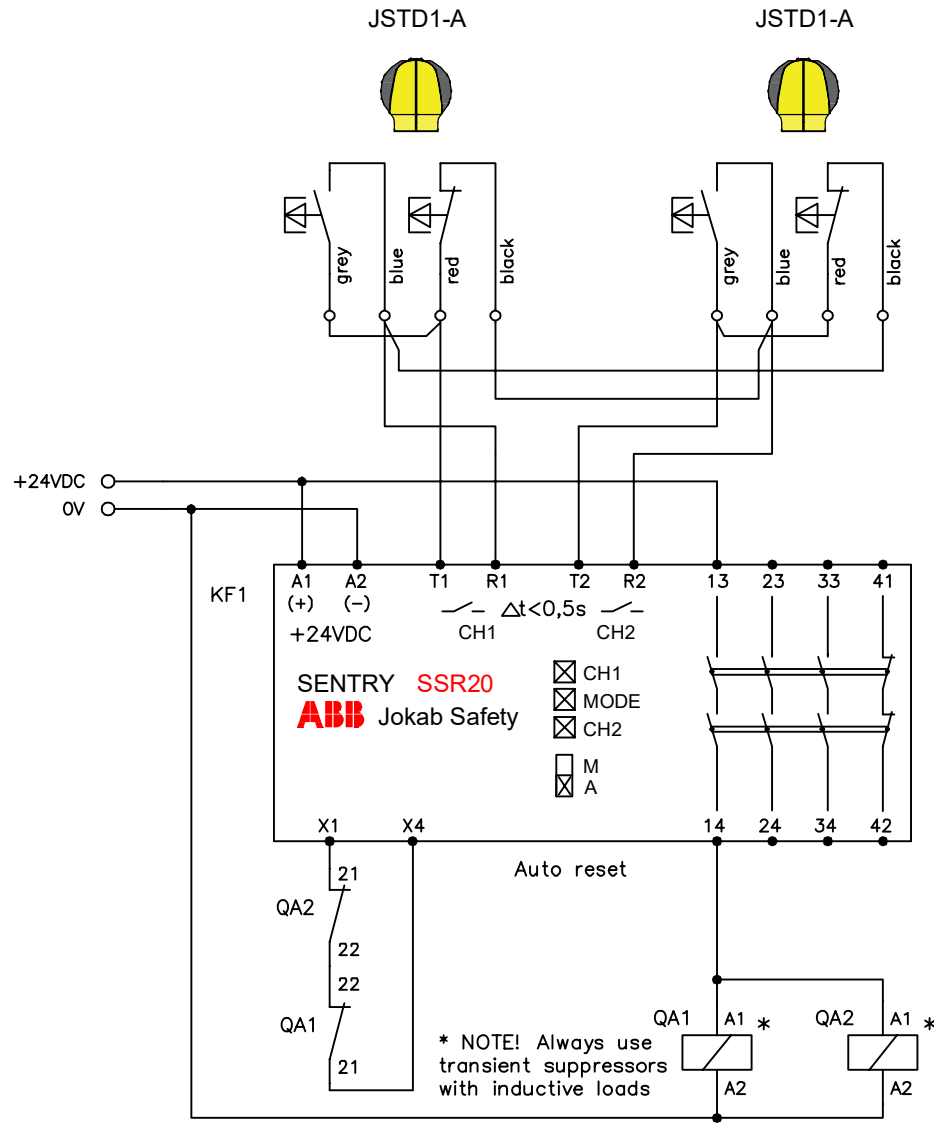
Anmärkning Remark

SSR20 with JSTD25K



Konstr Design	ABB	Godk Appr	Datum Date	20210706	Blad Sheet
Ritad Drawn	ABB	Sidor Pages	Ritn nr Drawing no	2TLC010009T0005	Forts Cont

1 2 3 4 5 6 7 8 9 10



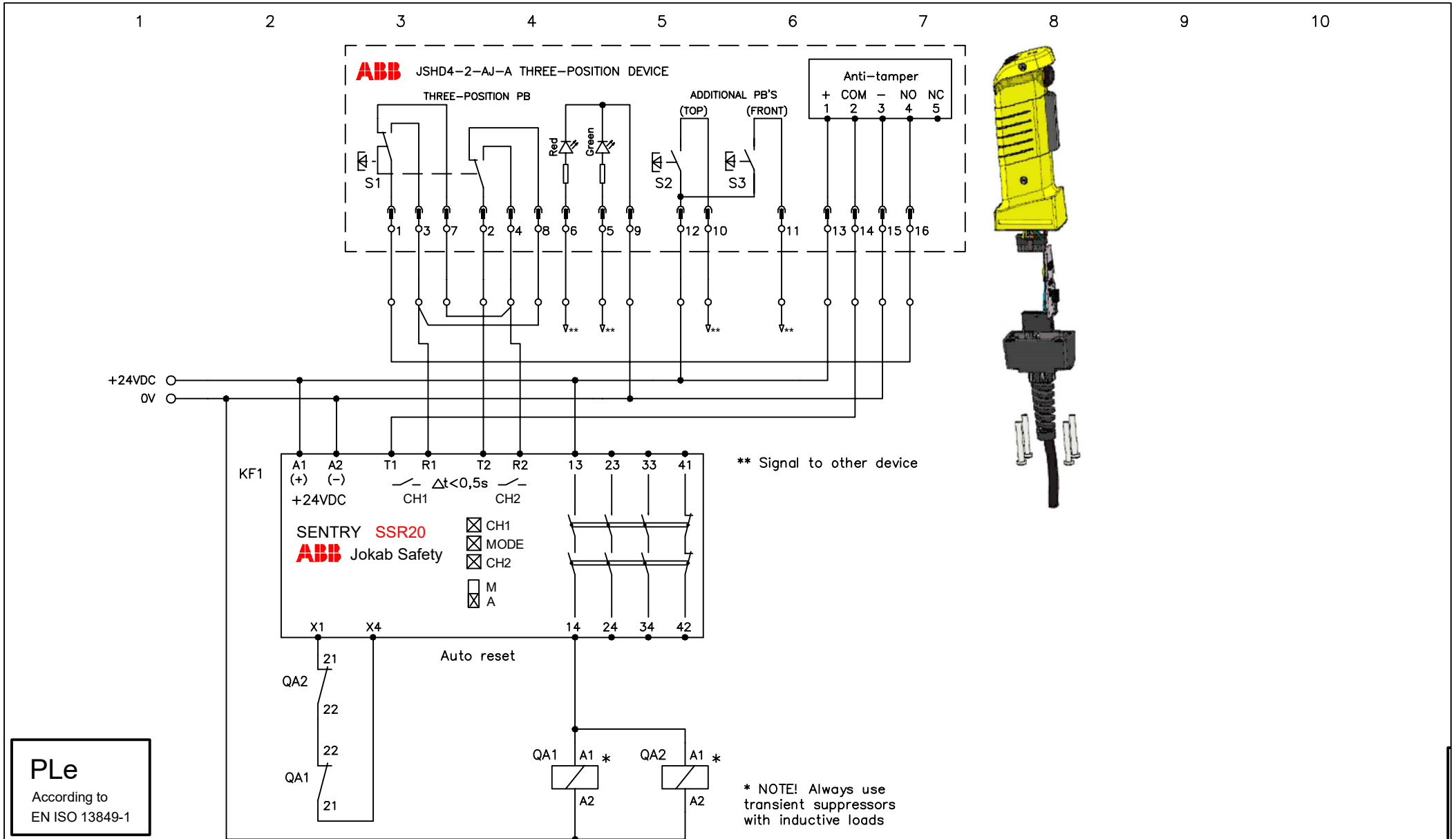
PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	
SSR20 with JSTD1-A	



Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210706	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010009T0004	



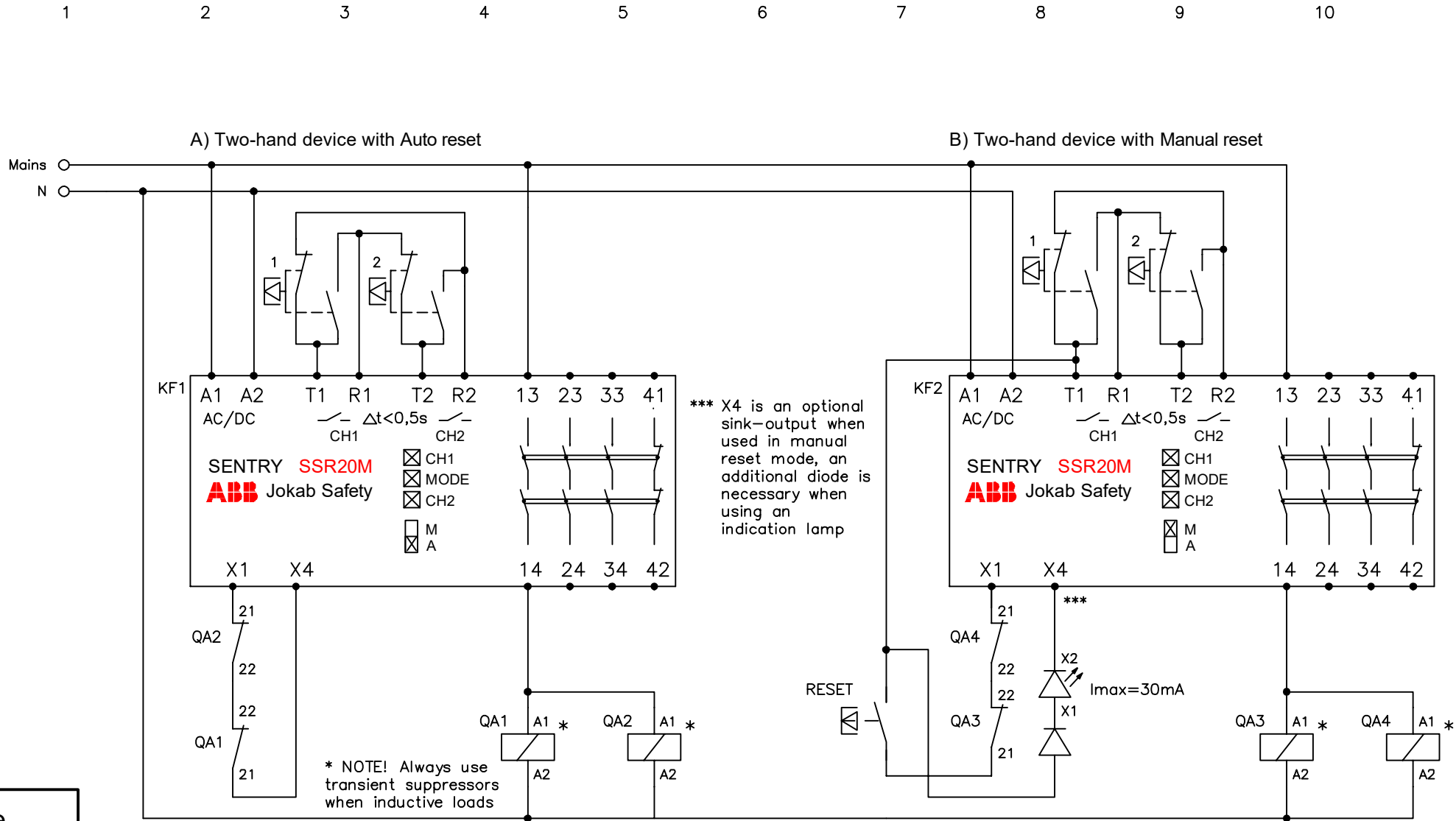
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

SSR20 with JSHD4-2-AJ-A

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010009T0003	Forts Cont



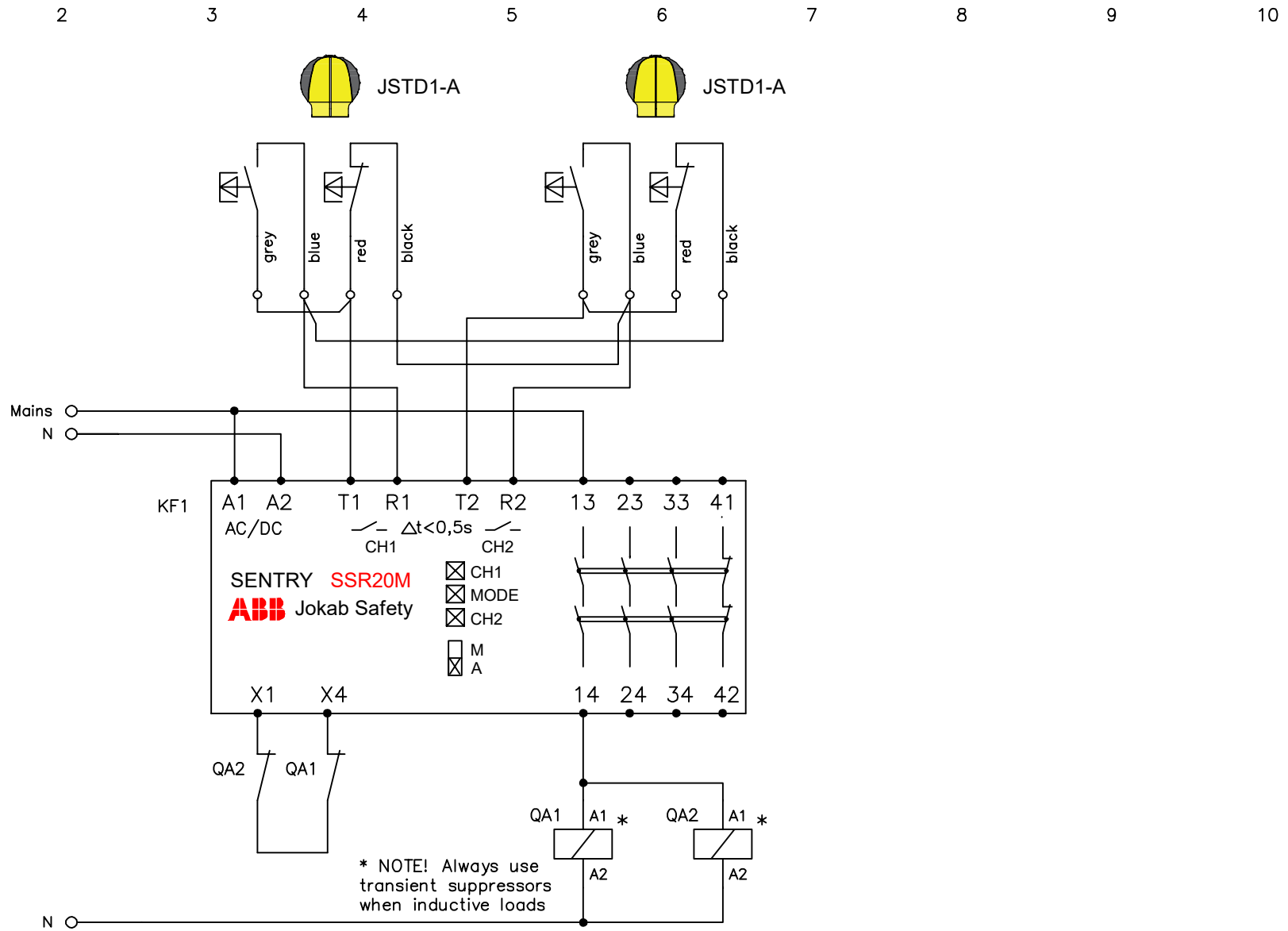
PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark	
SSR20M general	



Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210706	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010010T0001	



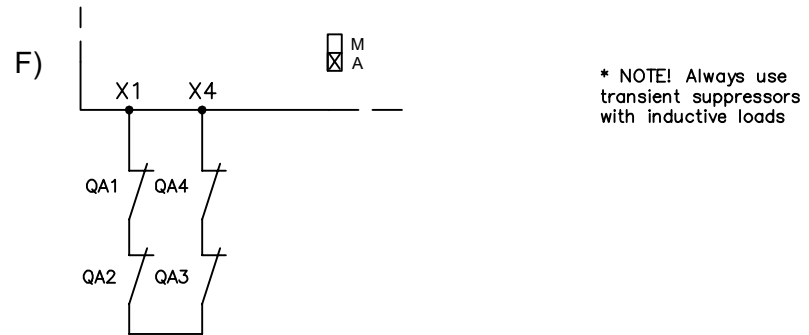
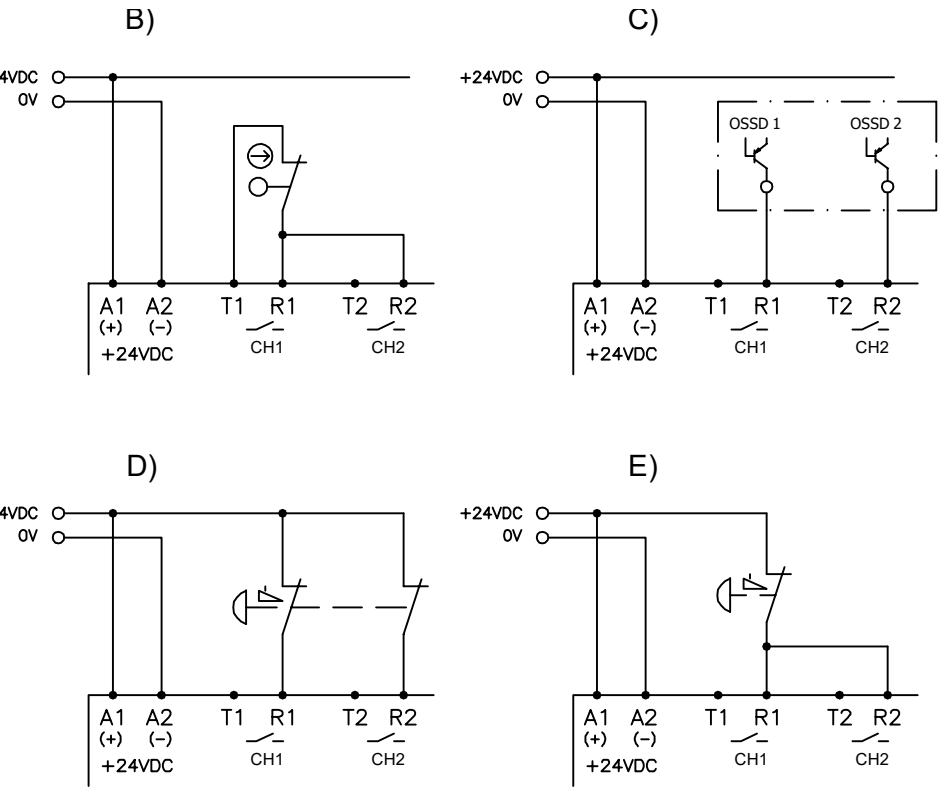
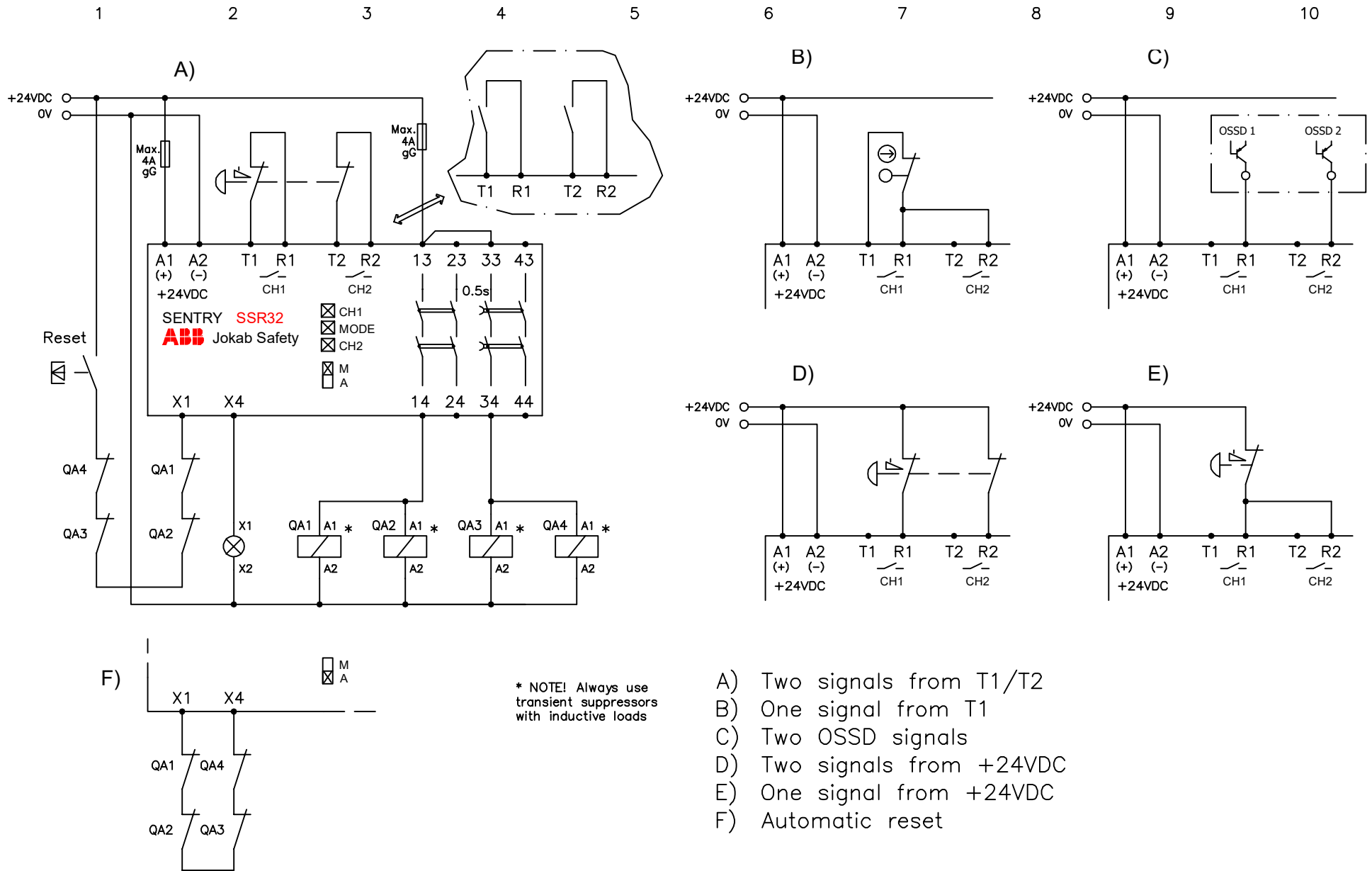
PL_e
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark
SSR20M with JSTD1-A



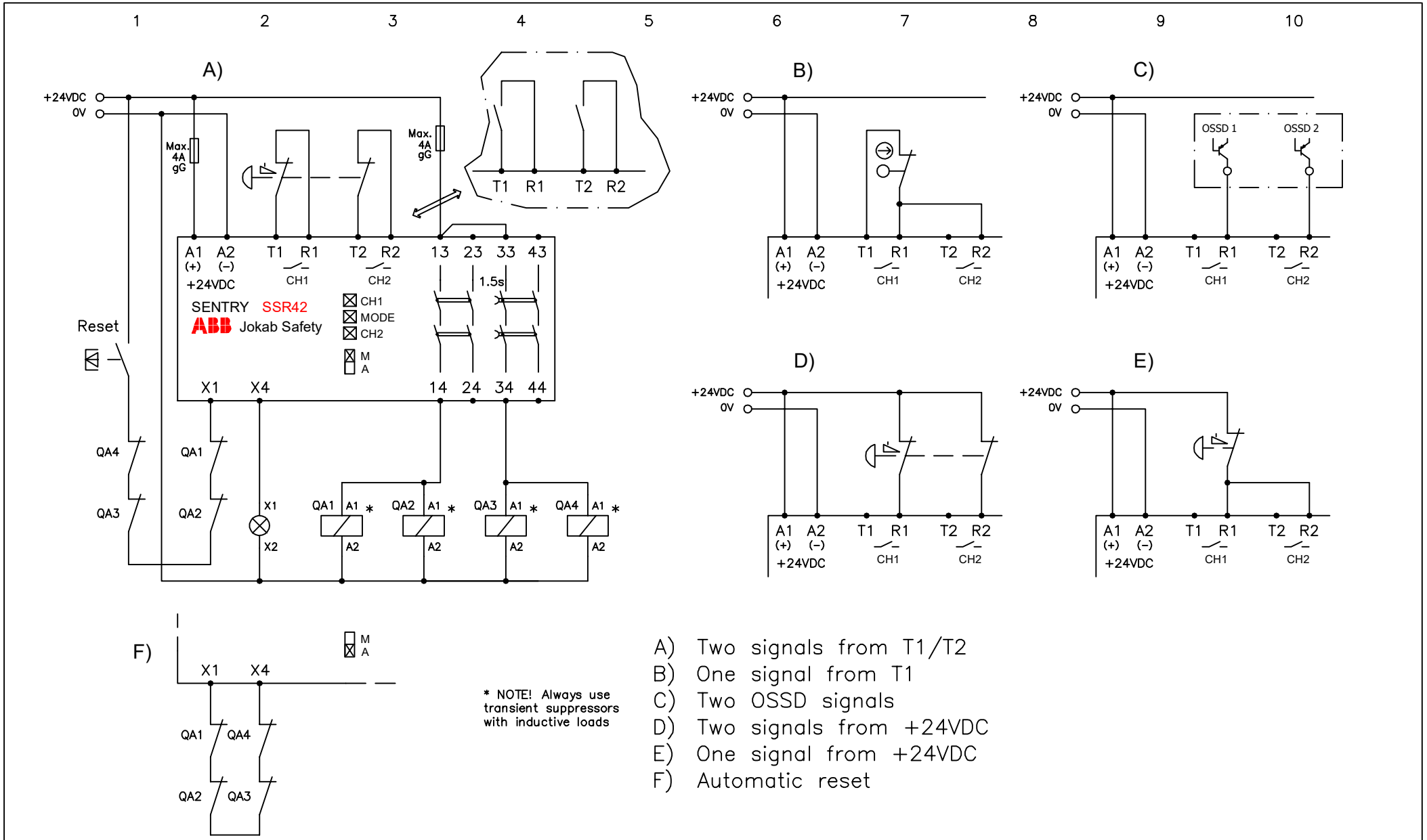
Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010010T0002	Forts Cont



- A) Two signals from T1/T2
- B) One signal from T1
- C) Two OSSD signals
- D) Two signals from +24VDC
- E) One signal from +24VDC
- F) Automatic reset

Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

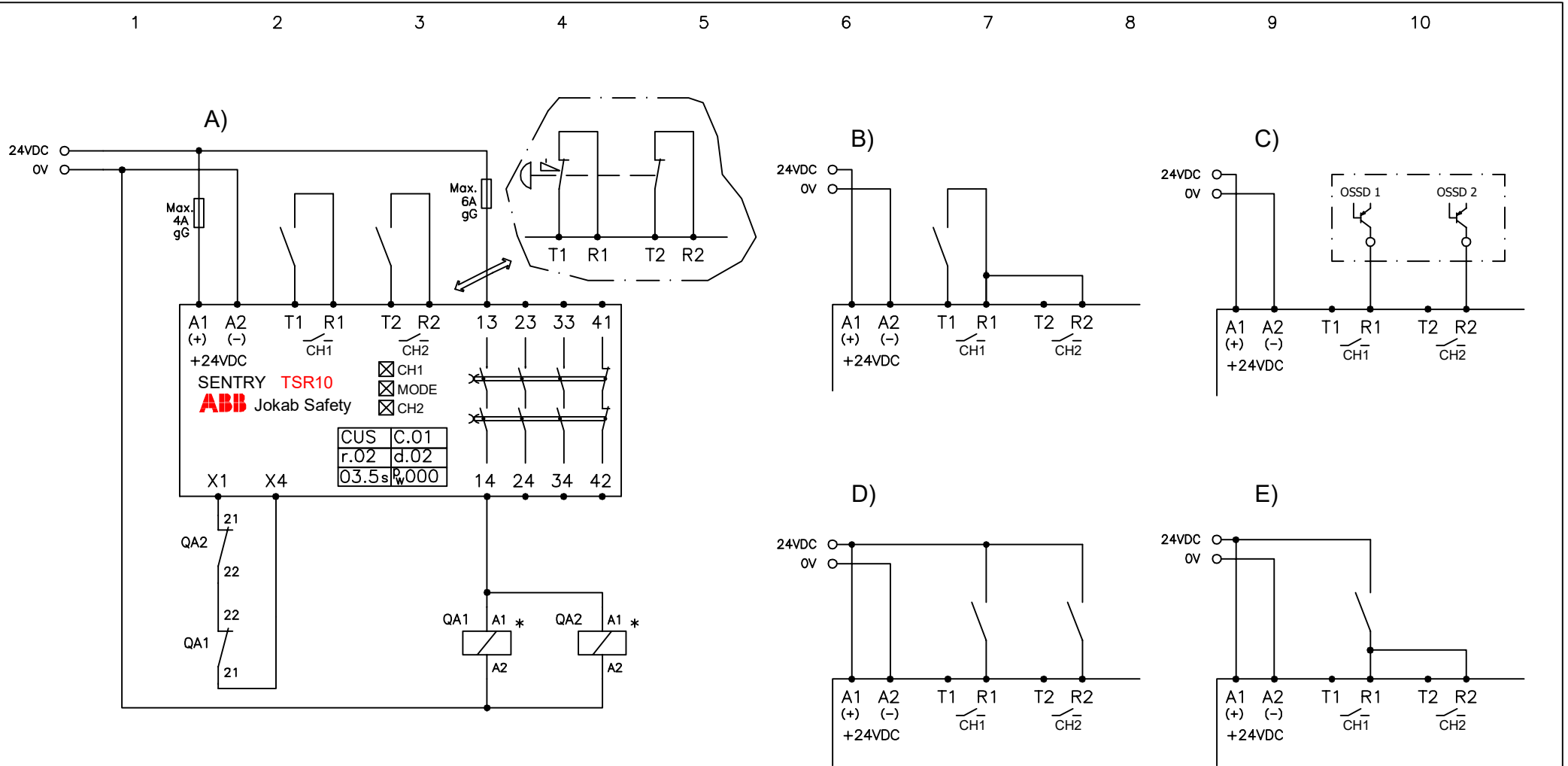
Anmärkning Remark SSR32 general	ABB Safety Products	Konstr Design ABB	Godk Appr	Datum Date 20210707	Blad Sheet
		Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010011T0001	Forts Cont



- A) Two signals from T1/T2
- B) One signal from T1
- C) Two OSSD signals
- D) Two signals from +24VDC
- E) One signal from +24VDC
- F) Automatic reset

Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark SSR42 general	ABB Safety Products	Konstr Design	Godk Appr	Datum Date	Blad Sheet
		ABB		20210707	
		Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
		ABB		2TLC010012T0001	



- A) Two signals from T1/T2
- B) One signal from T1
- C) Two OSSD signals
- D) Two signals from +24VDC
- E) One signal from +24VDC

* NOTE! Always use transient suppressors with inductive loads

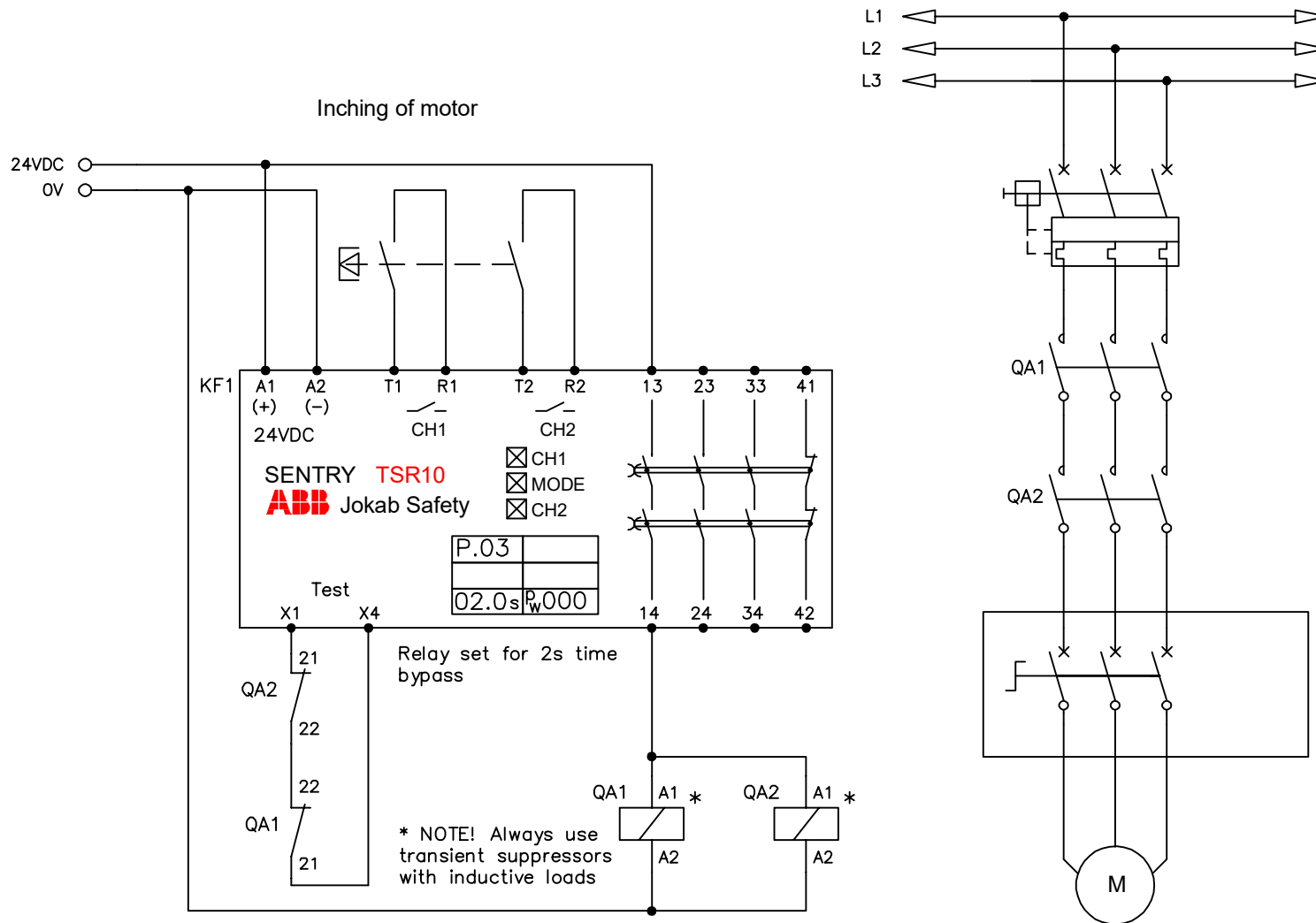
Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning	Remark
TSR10 general	



Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210707	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010013T0001	

1 2 3 4 5 6 7 8 9 10



PLe
According to
EN ISO 13849-1

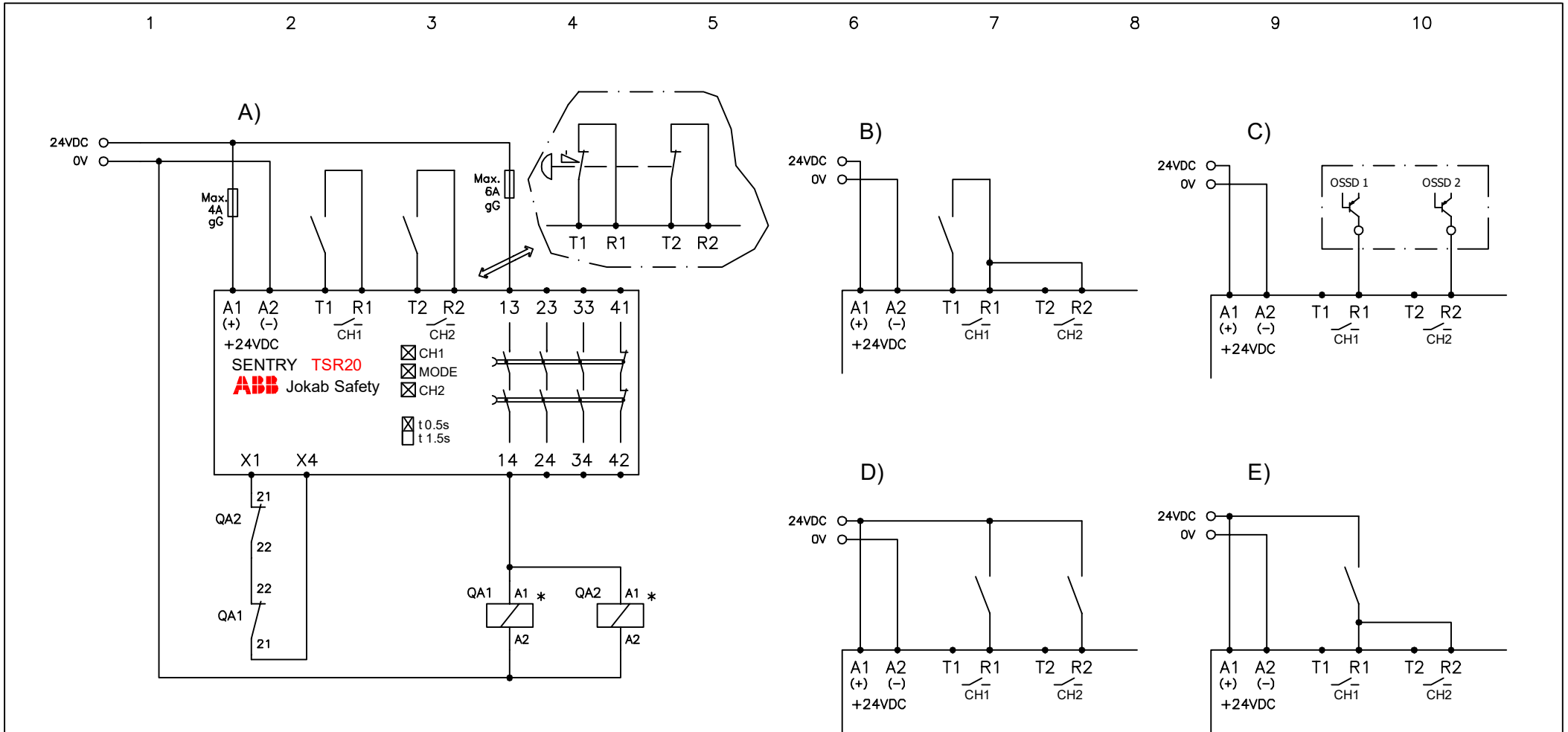
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

TSR10 inching

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010013T0003	Forts Cont



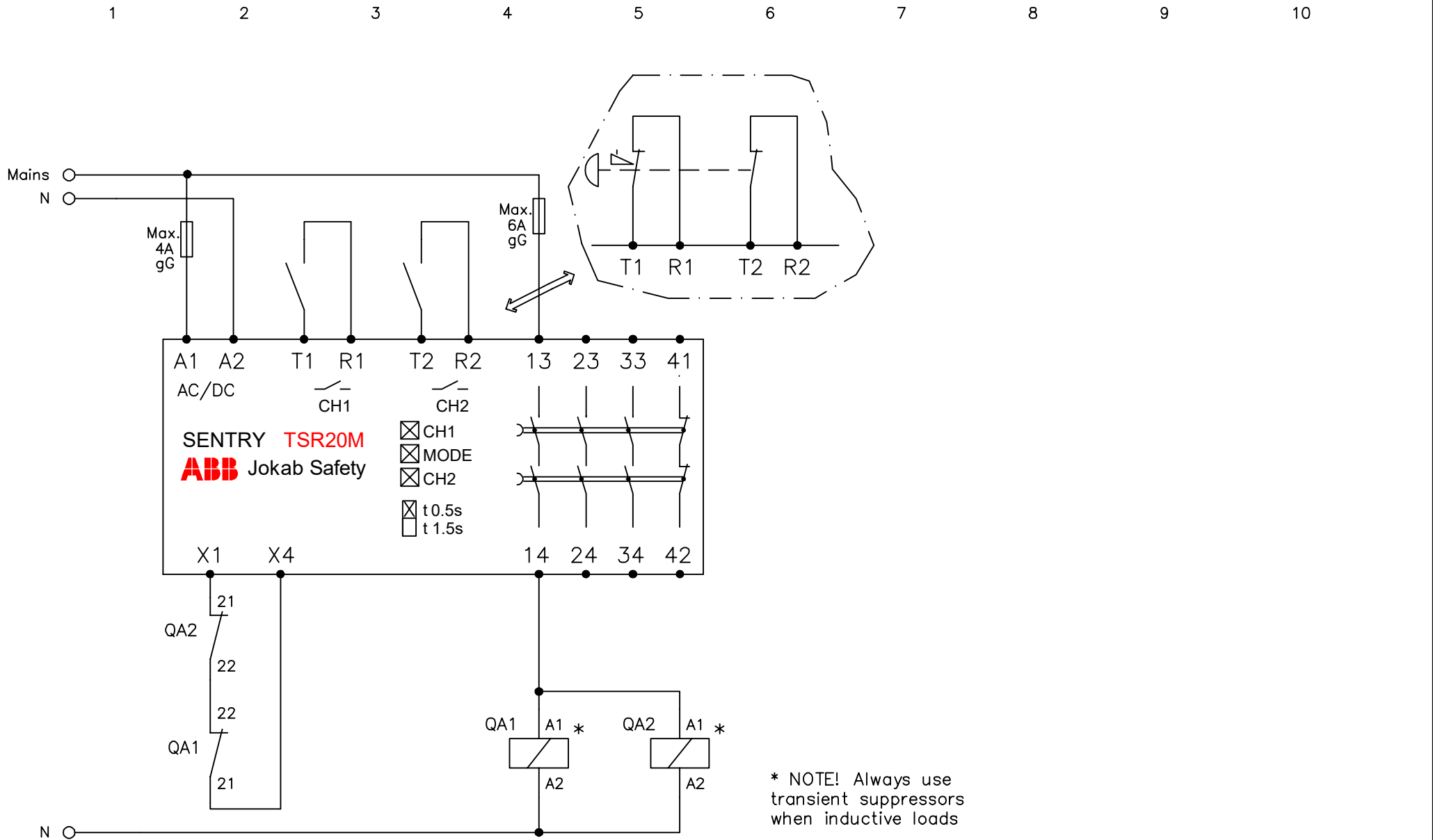
- A) Two signals from T1/T2
 - B) One signal from T1
 - C) Two OSSD signals
 - D) Two signals from +24VDC
 - E) One signal from +24VDC
- * NOTE! Always use transient suppressors with inductive loads

Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.


Anmärkning Remark	
TSR20 general	

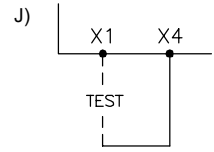
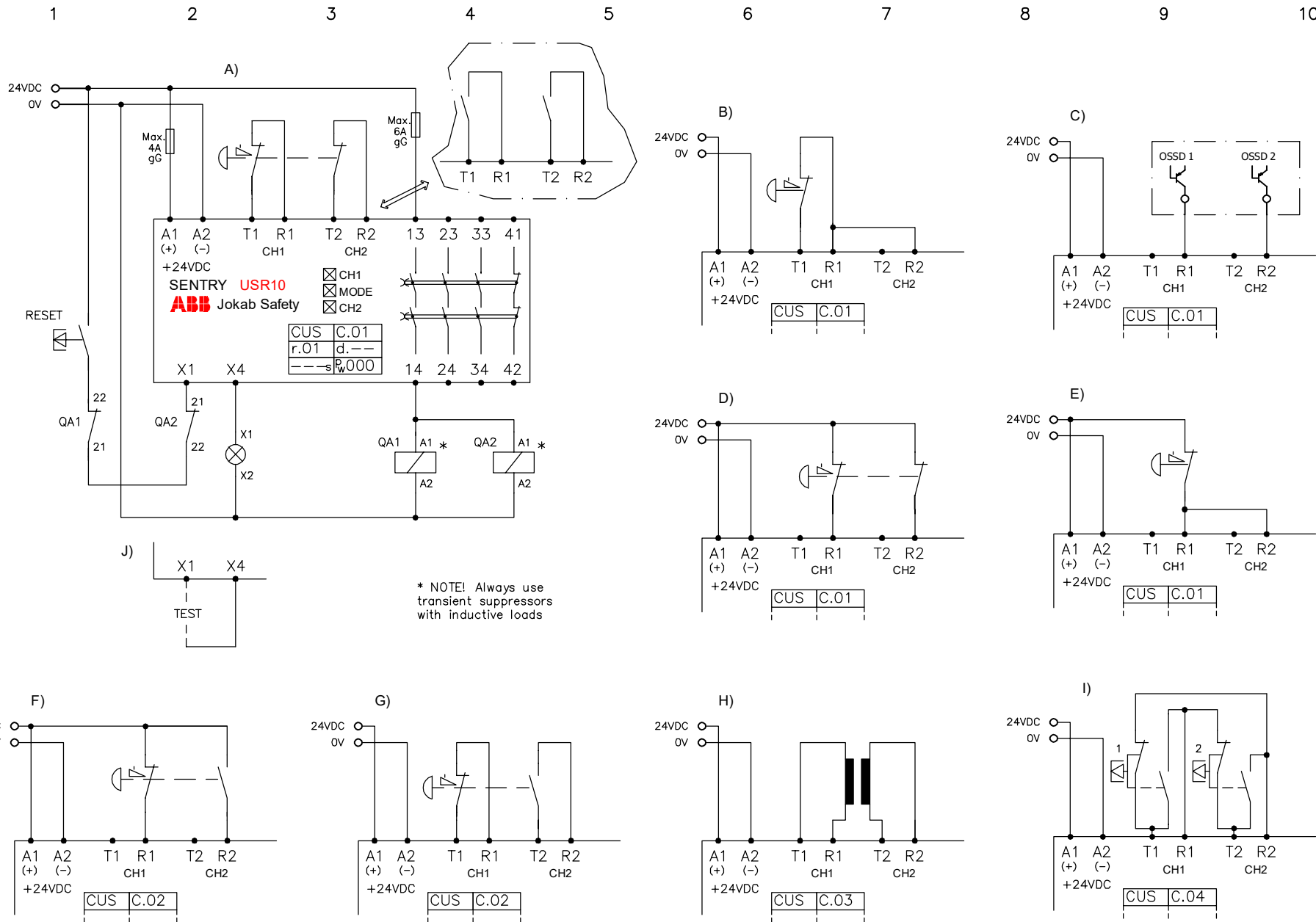


Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210707	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010014T0001	



Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark		Konstr Design	Godk Appr	Datum Date	Blad Sheet
TSR20M general		ABB		20210707	
		Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
		ABB		2TLC010015T0001	



* NOTE! Always use transient suppressors with inductive loads

Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

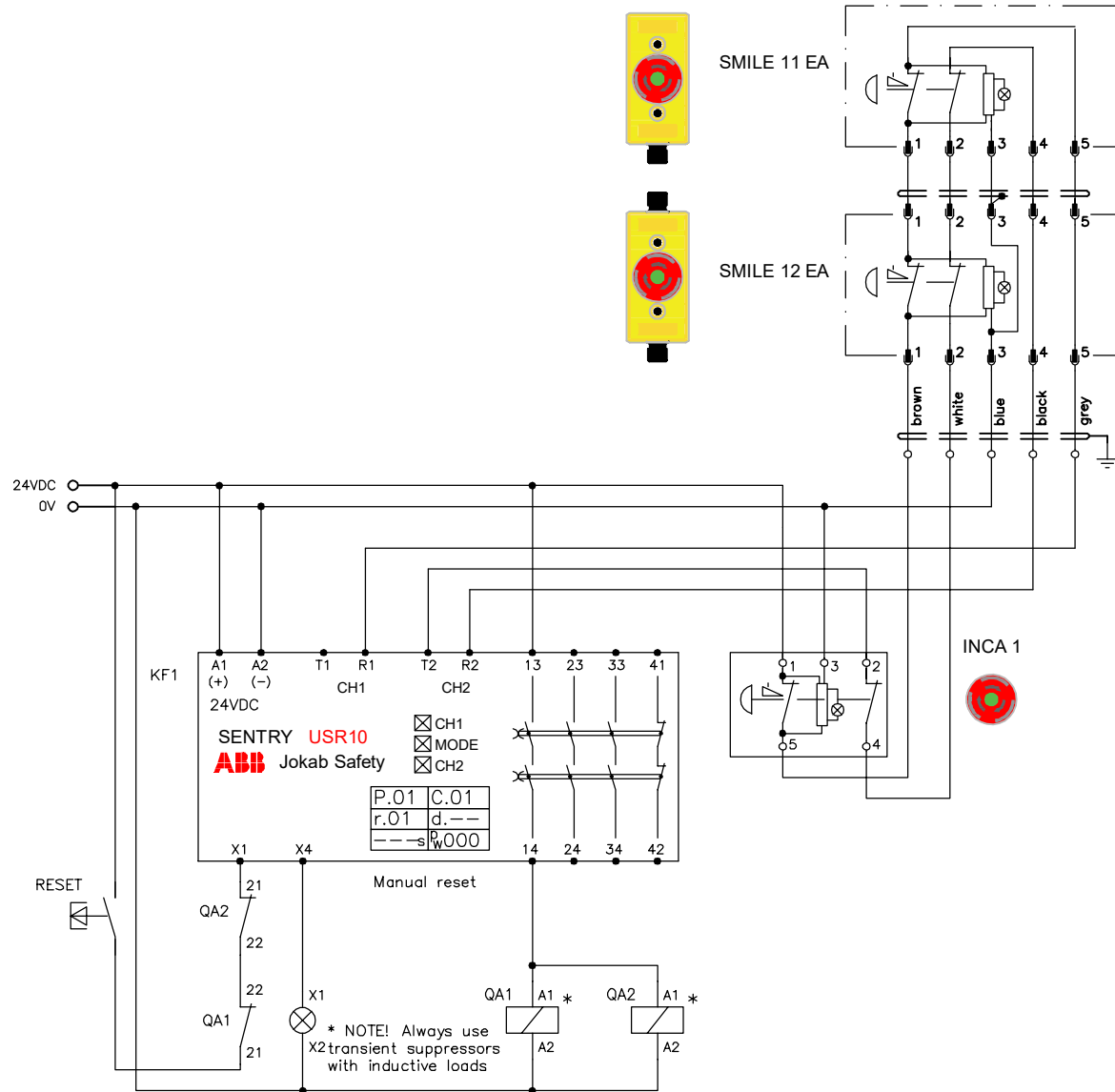
Anmärkning Remark

USR10 general



Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210707	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010016T0001	

1 2 3 4 5 6 7 8 9 10



PLe
According to
EN ISO 13849-1

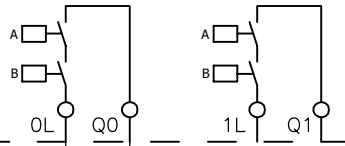
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark USR10 with INCA 1/SMILE EA	ABB Safety Products		Konstr Design	Godk Appr	Datum Date	Blad Sheet
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			Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
			ABB		2TLC010016T0002	

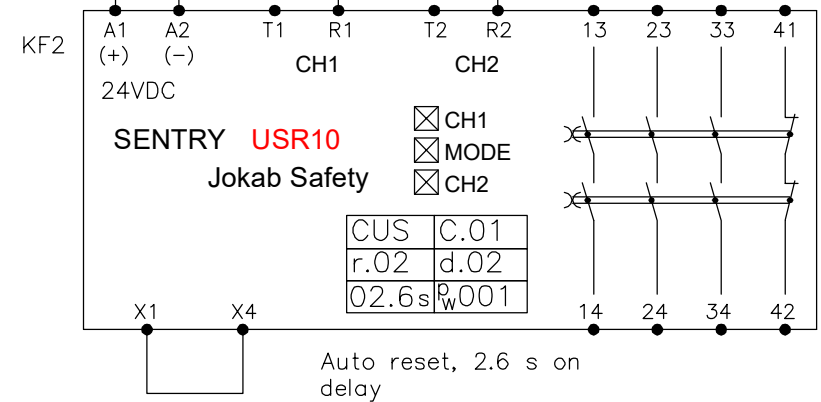
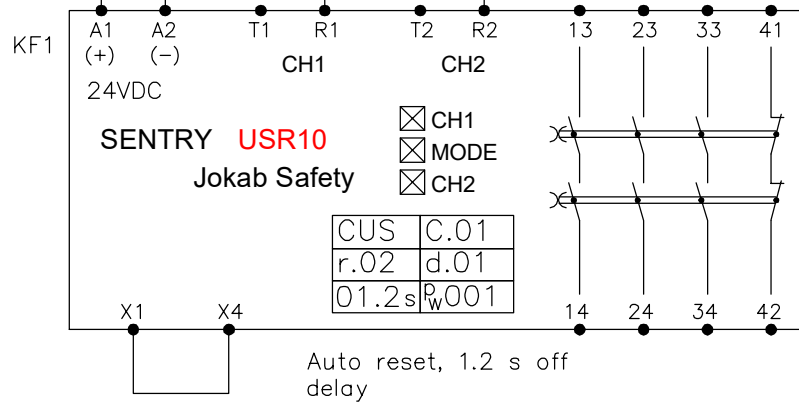
1 2 3 4 5 6 7 8 9 10

PLUTO

Safety outputs



24VDC
0V



PLe
According to
EN ISO 13849-1

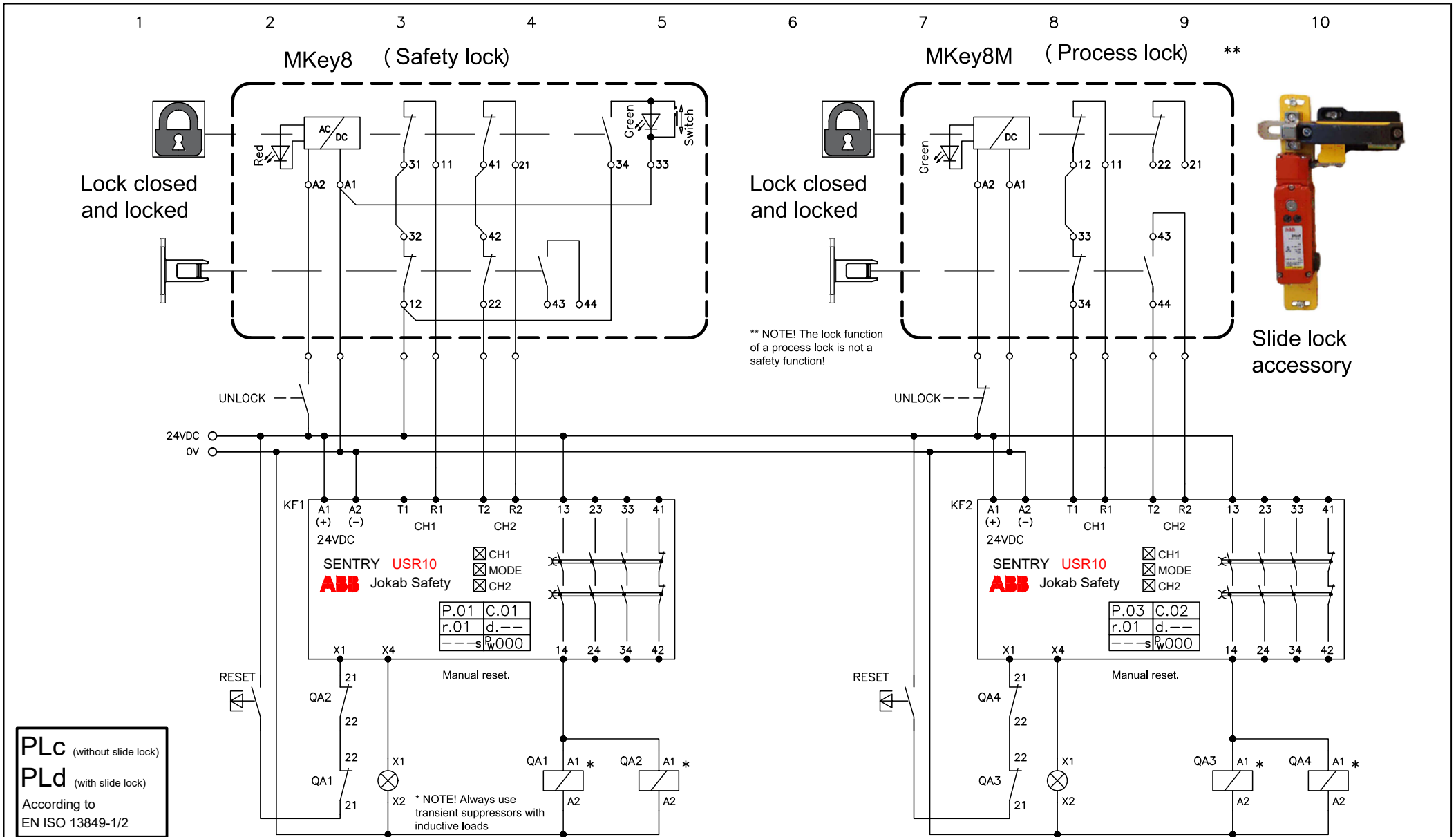
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

USR10 as expansion

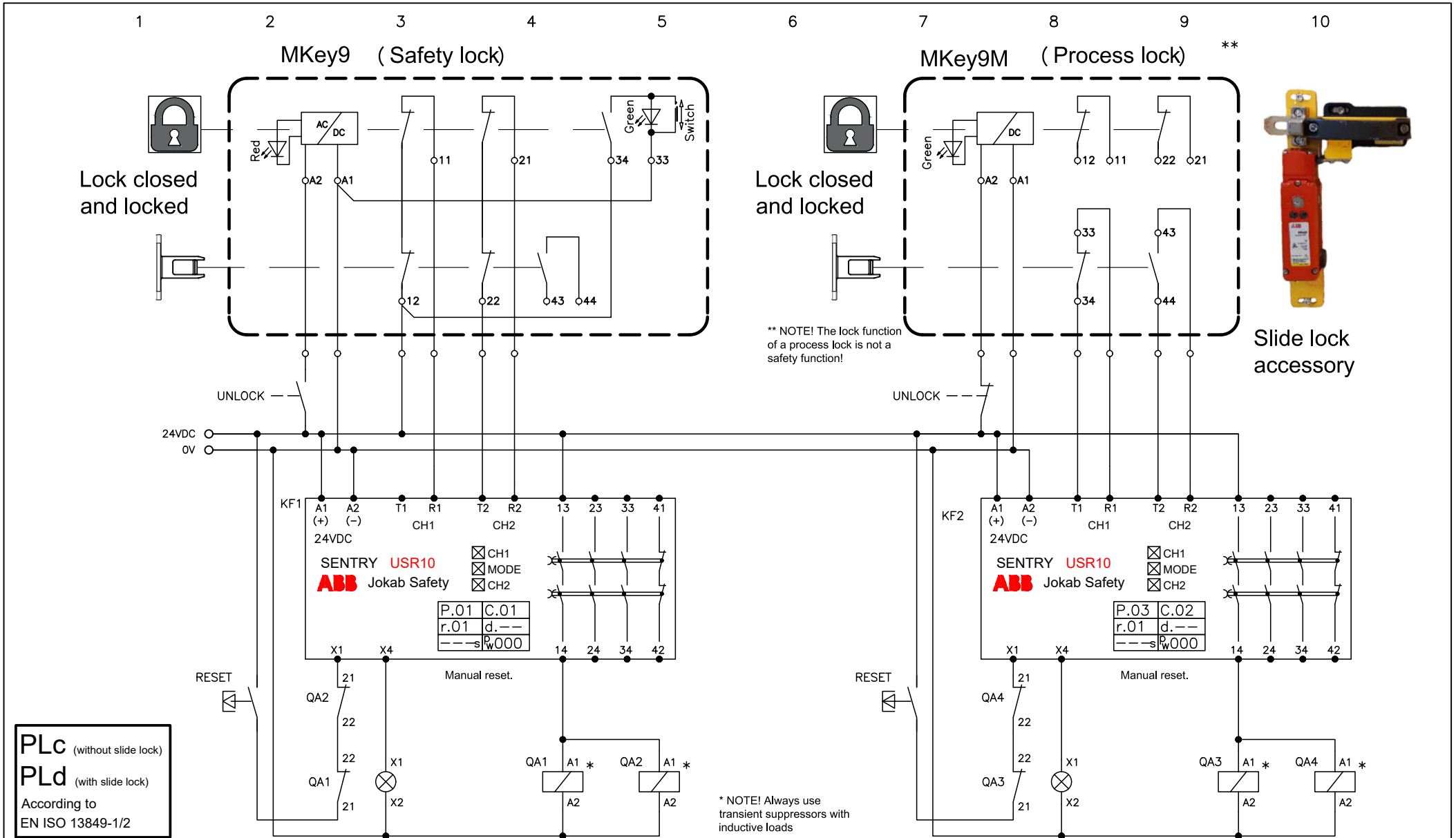


Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016T0007	Forts Cont



Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

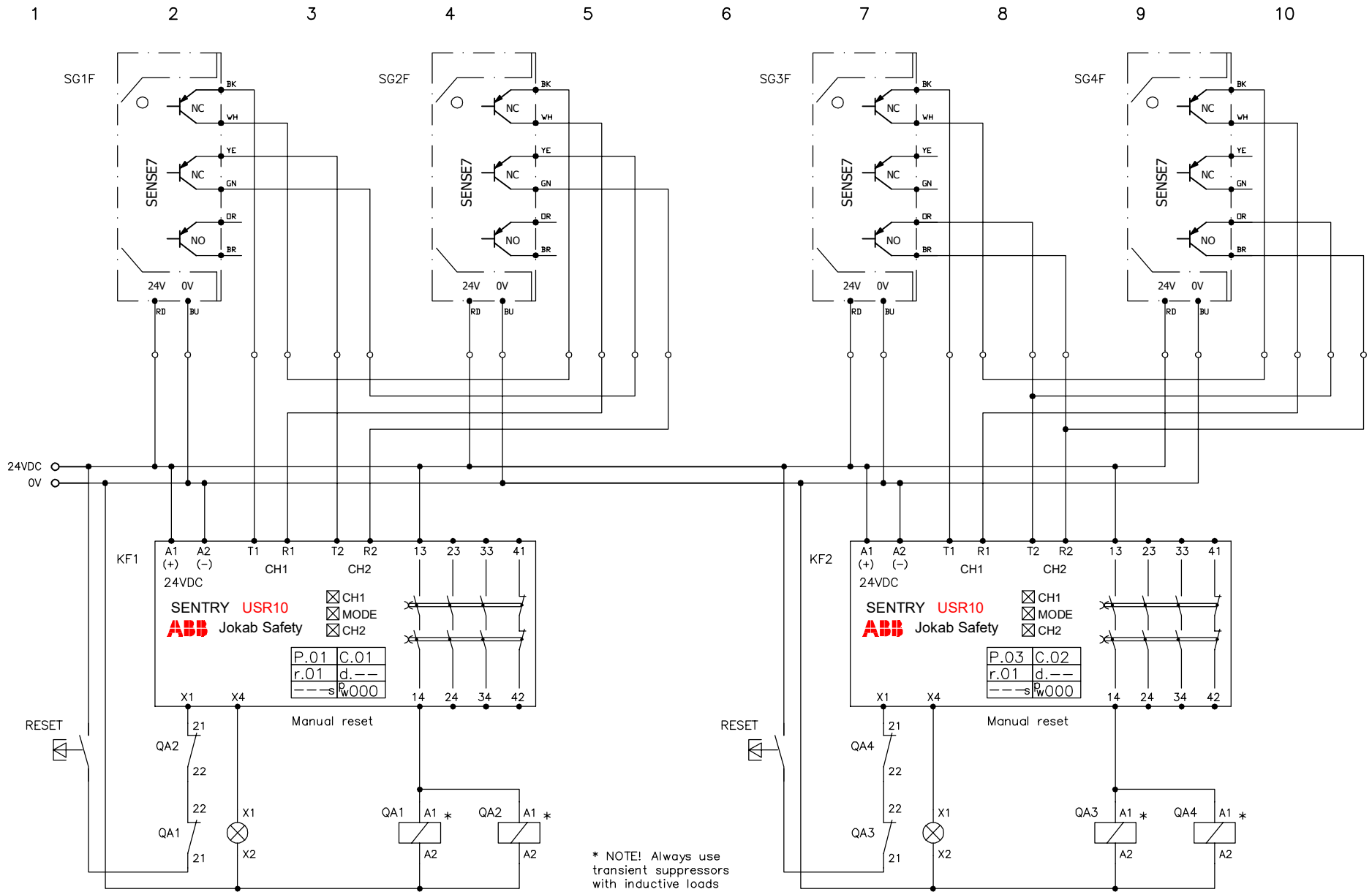
Anmärkning Remark USR10 with MKey8	ABB Safety Products		Konstr Design	Godk Appr	Datum Date	Blad Sheet
			ABB		20240228	
			Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
			ABB		2TLC010016T0008	



PLC (without slide lock)
PLd (with slide lock)
According to
EN ISO 13849-1/2

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark USR10 with MKey9		Konstr Design Godk Appr ABB	Datum Date 20240228	Blad Sheet
		Ritad Drawn Sidor Pages ABB	Ritn nr Drawing no 2TLC010016T0009	Forts Cont



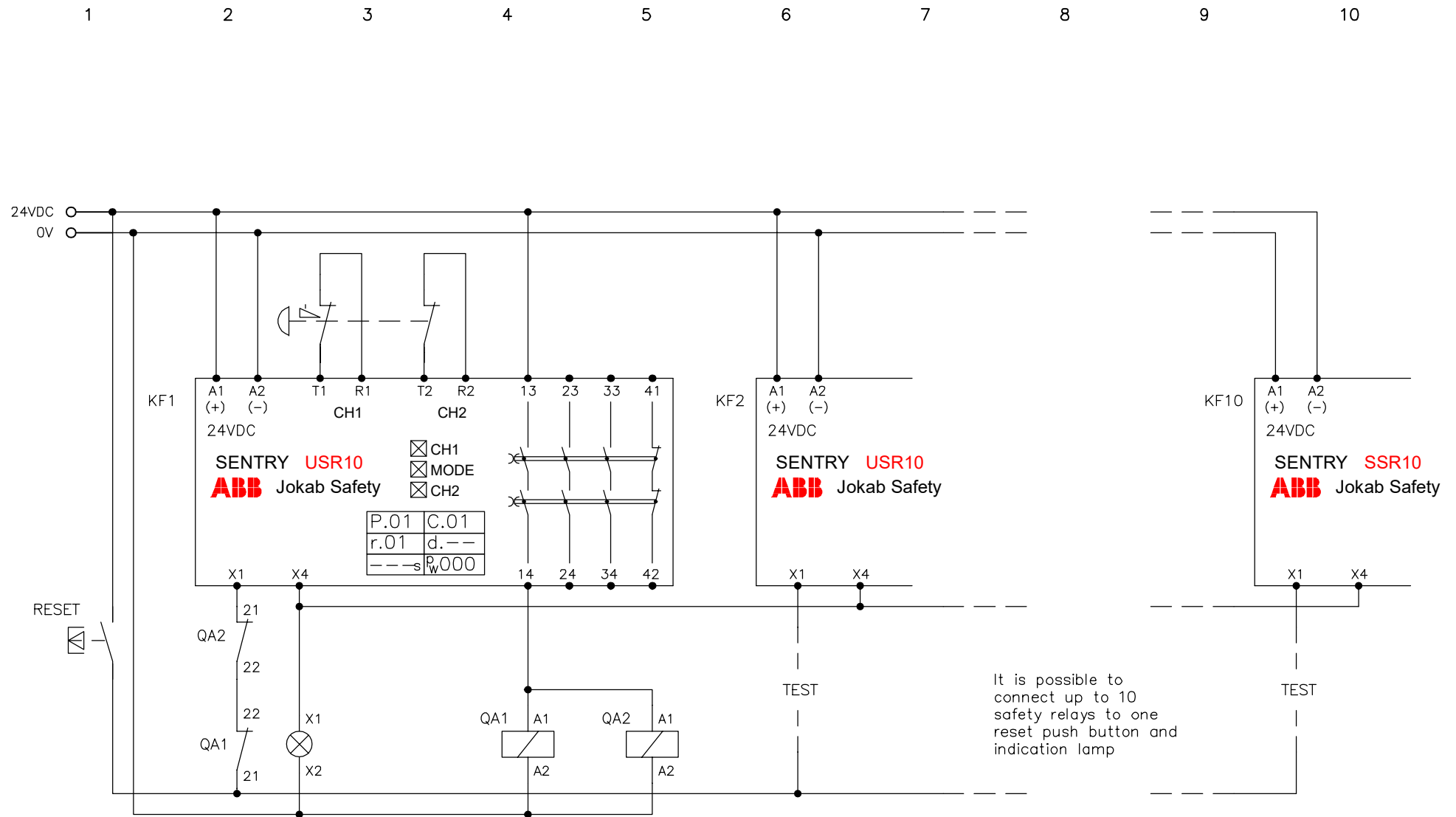
Note: The PL should be calculated using ISO/TR 24119 and EN ISO 13849-1/2

Anmärkning Remark

USR10 with Sense7



Konstr Design ABB	Godk Appr	Datum Date 20210518	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016T0010	Forts Cont



Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

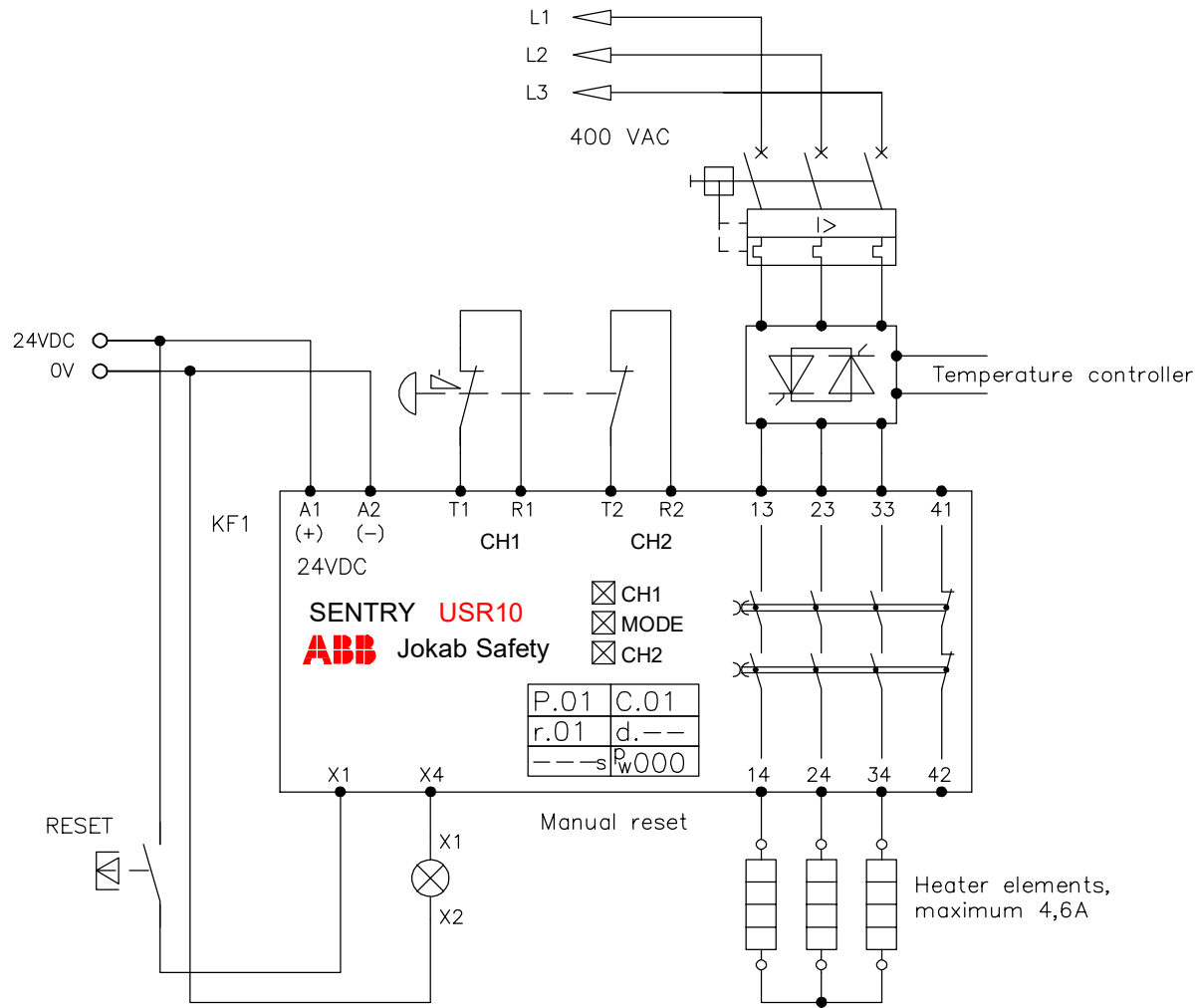
Anmärkning Remark

USR10 Multi reset

ABB Safety Products

Konstr Design	Godk Appr	Datum Date	Blad Sheet
ABB		20210707	
Ritad Drawn	Sidor Pages	Ritn nr Drawing no	Forts Cont
ABB		2TLC010016T0011	

1 2 3 4 5 6 7 8 9 10



PLe
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

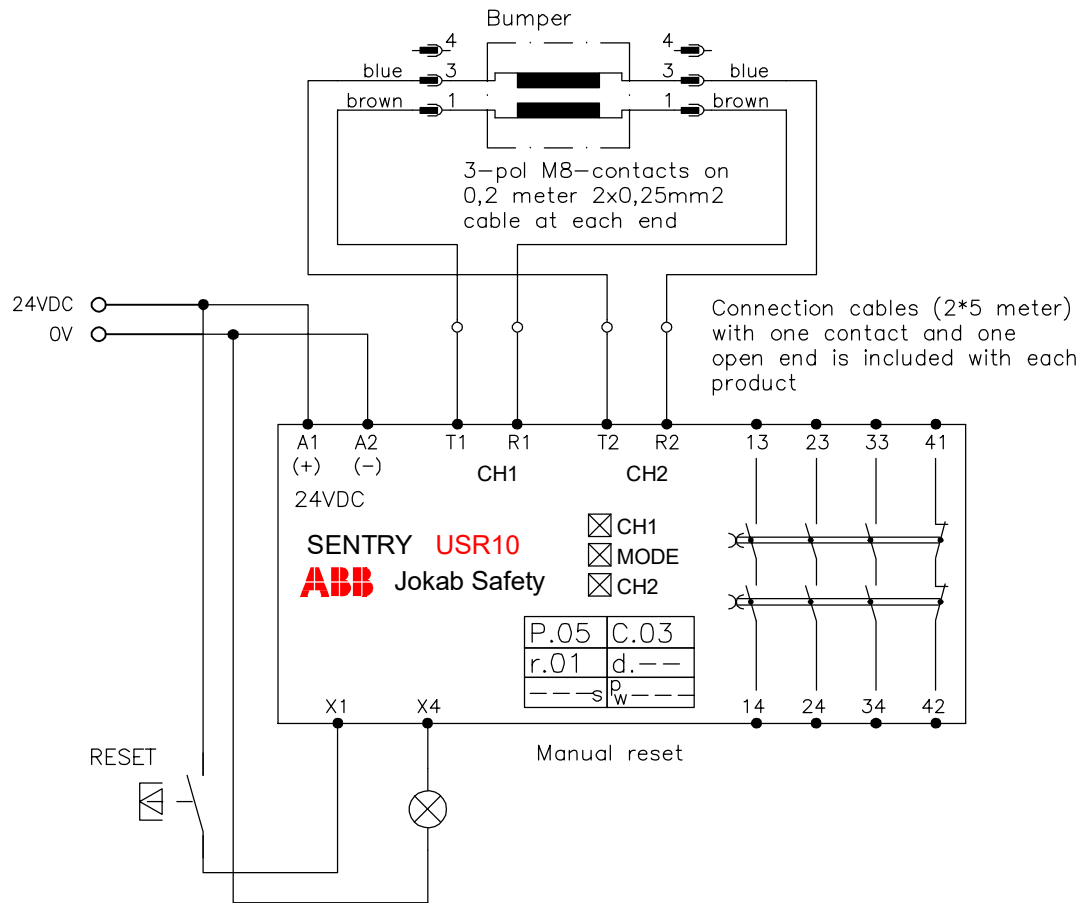
Anmärkning Remark

USR10 3-phase connection

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016T0018	Forts Cont

1 2 3 4 5 6 7 8 9 10



PLd

According to
EN ISO 13849-1

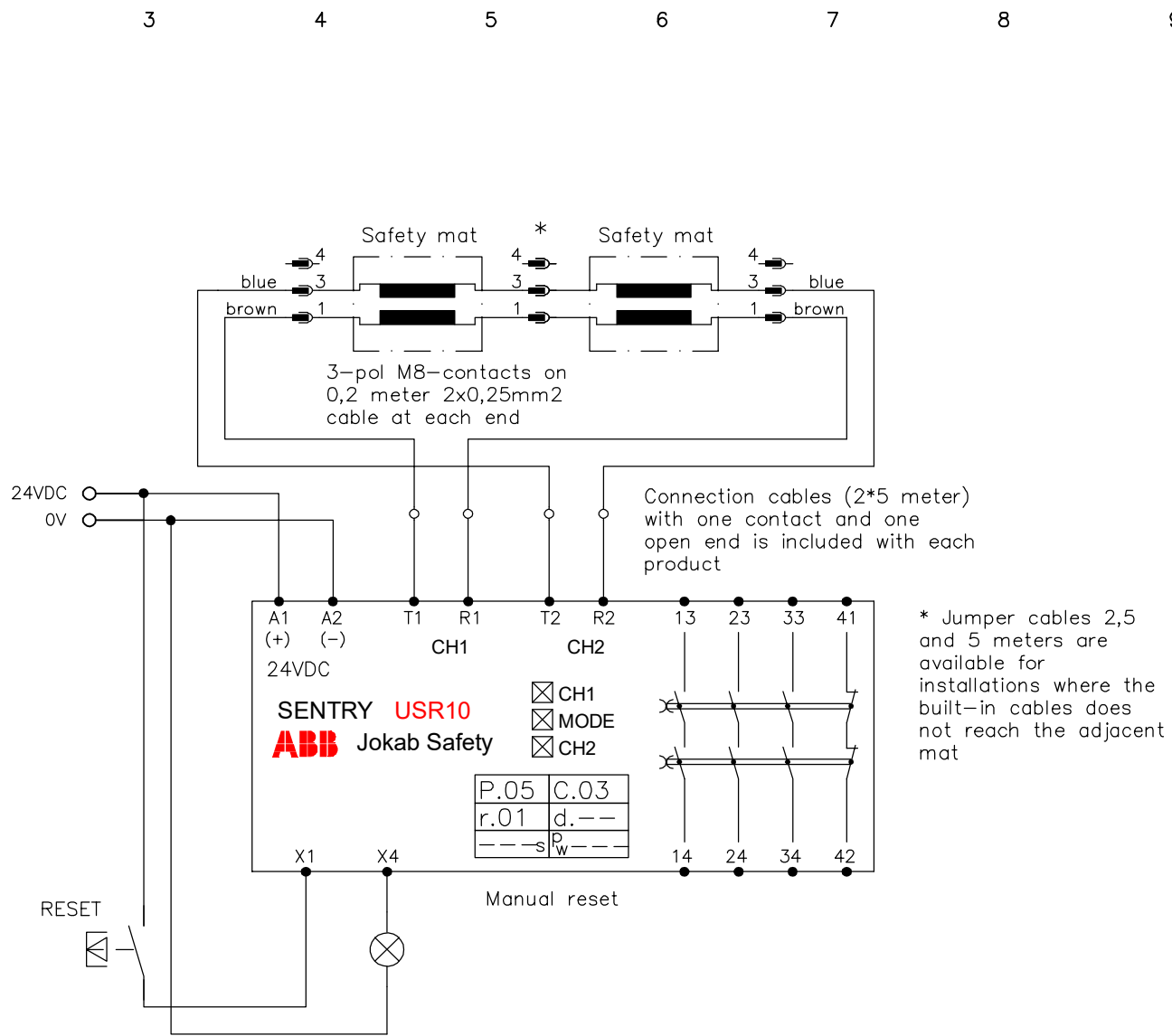
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

USR10 with bumper

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016R0021	Forts Cont



PLd
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

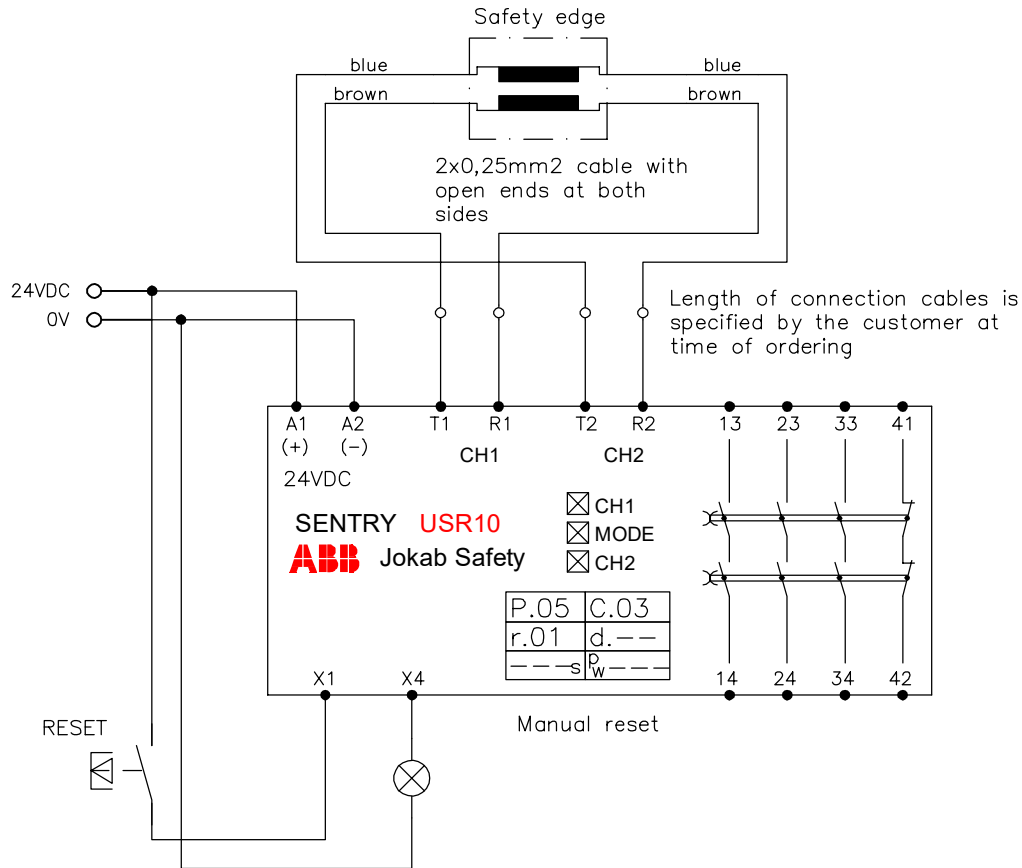
Anmärkning Remark

USR10 with safety mat

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016R0022	Forts Cont

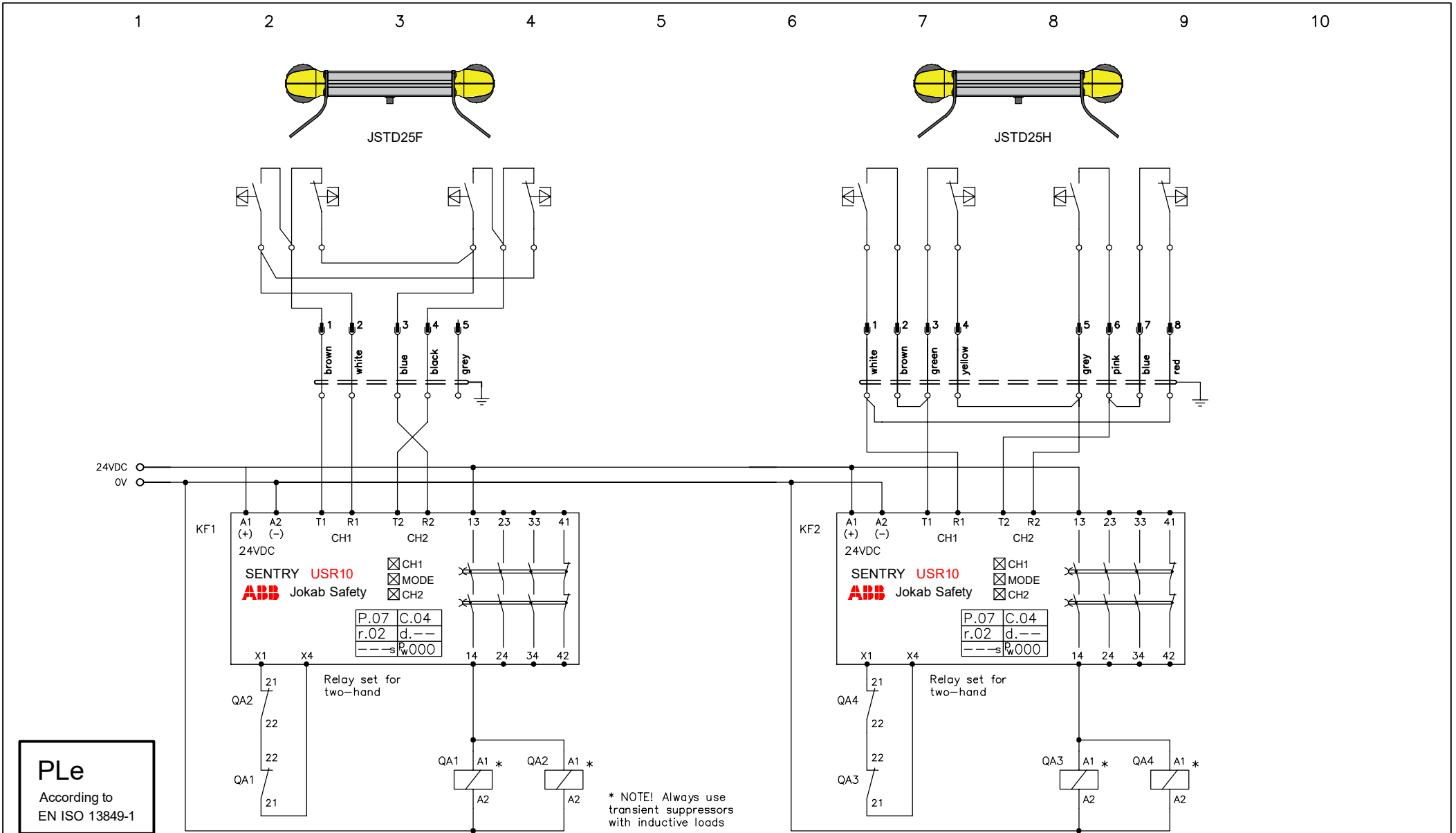
1 2 3 4 5 6 7 8 9 10



PLd
According to
EN ISO 13849-1

Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark USR10 with safety edge	ABB Safety Products				Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
					Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016R0023	Forts Cont



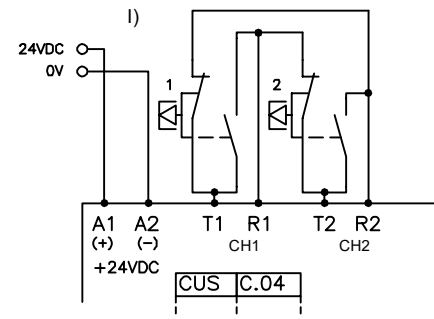
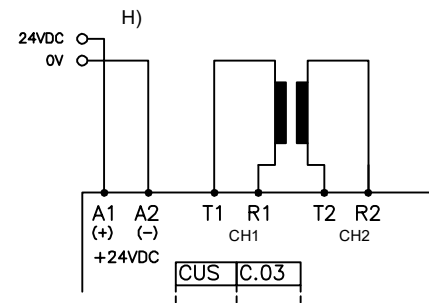
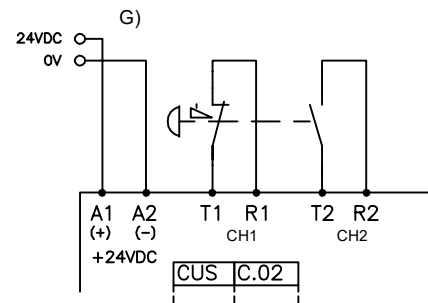
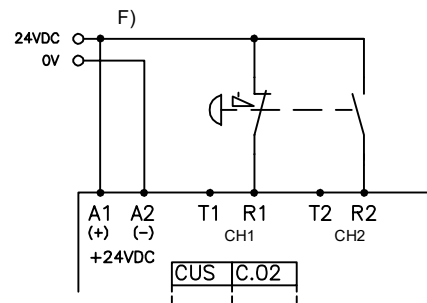
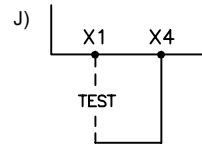
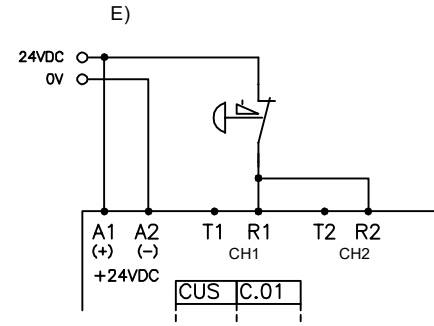
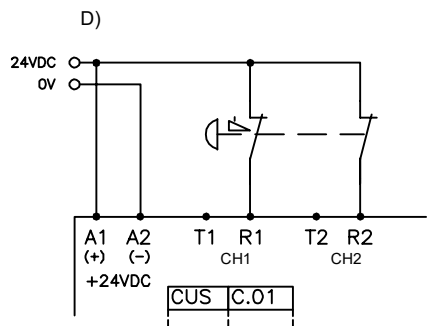
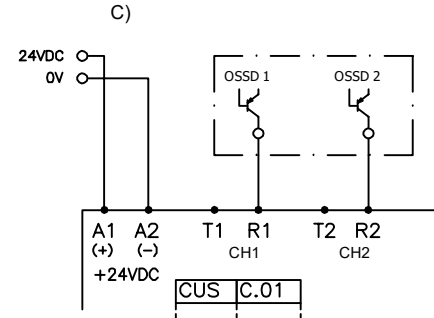
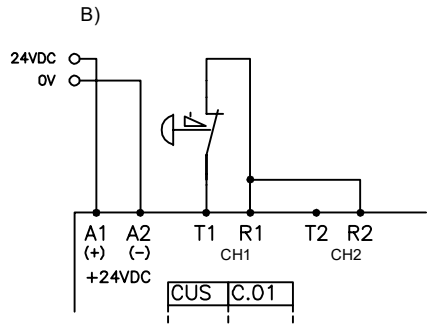
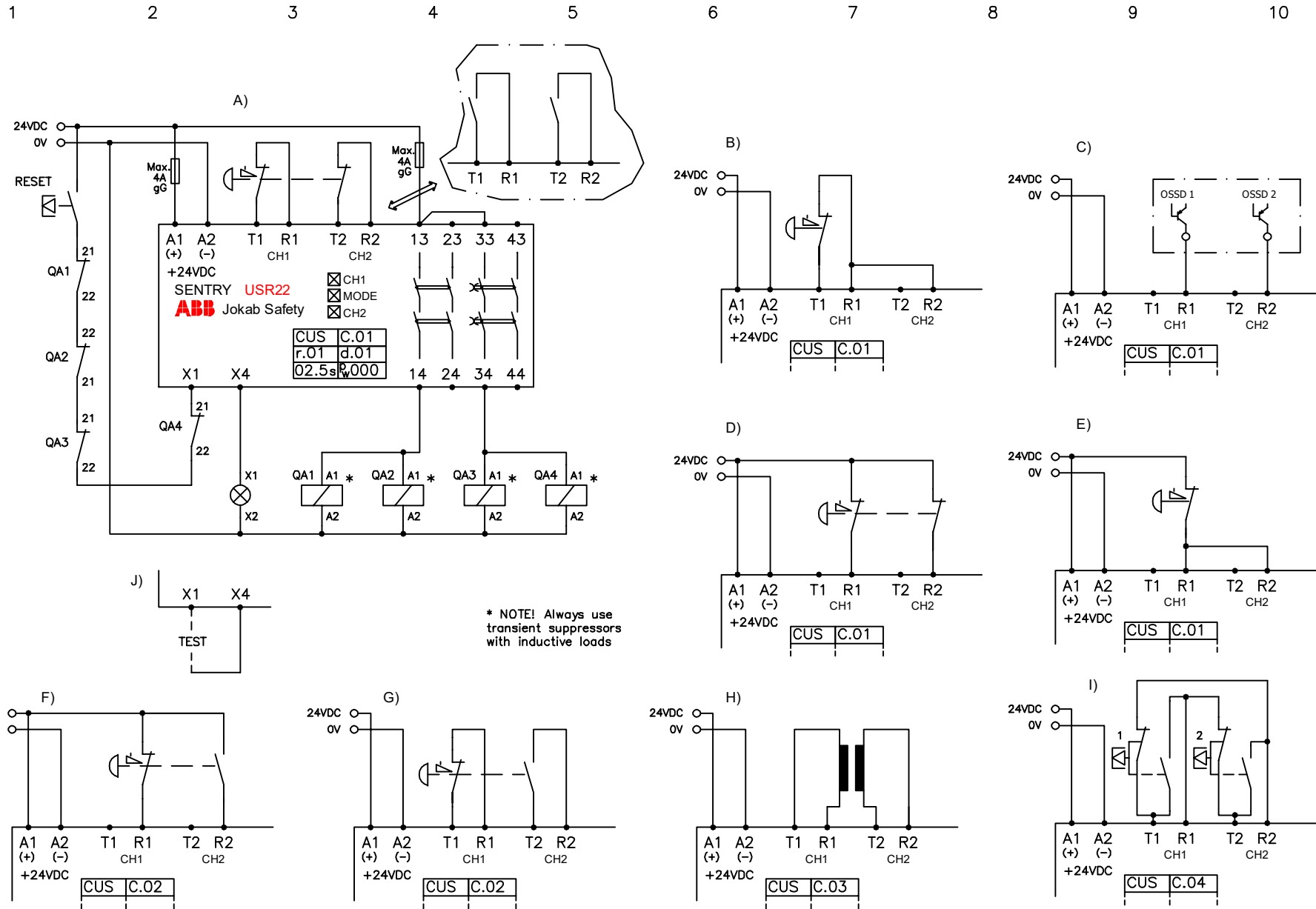
Note: The stated PL is only valid if all relevant requirements according to EN ISO 13849-1/-2 are met. It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning Remark

USR10 with JSTD25F/H

ABB Safety Products

Konstr Design ABB	Godk Appr	Datum Date 20210706	Blad Sheet
Ritad Drawn ABB	Sidor Pages	Ritn nr Drawing no 2TLC010016T0004	Forts Cont



Note: It is the responsibility of the machine builder to make a risk assessment and make sure that the appropriate functional safety levels are achieved.

Anmärkning	Remark
	USR22 general



Konstr	Design	Godk	Appr	Datum	Date	Blad	Sheet
ABB				2021	0707		
Ritad	Drawn	Sidor	Pages	Ritn nr	Drawing no	Forts	Cont
ABB					2TLC010017T0001		



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