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		Типовая документация TII EU-UV-EM	

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1 Functions / Программные функции

1.1 Purpose / Назначение

For the purpose of simplification, standard operator control and monitoring functions shall be defined for single drives, actuators (valves) and electric trace heaters. Typical shall be defined for these standard functions. It shall be possible to use these typicals to illustrate operator control and monitoring functions in a simplified format in the PID.

С целью упрощения, стандартные функции контроля и управления оператором должны быть определены для одиночных приводов, исполнительных устройств (клапанов) и сетевых электронагревателей. Для указанных стандартных функций должны быть определена типовая документация. Должна быть обеспечена возможность использования этой типовой документации для пояснения функций контроля и управления оператором в упрощенном формате на схеме трубопроводов и КИП.

1.2 Typical / Типовая документация

1.2.1 Types / Типы

Three different types of typicals are defined as follows:

1. The typical for electric single drives (E motors) shall be designated by **"EU x.y"** in the I&C symbol, upper text field.
2. The typical for actuators (valves) shall be designated by **"UV x.y"** in the I&C symbol, upper text field.
3. The typical for electric heaters shall be designated by **"EM x.y"** in the I&C symbol, upper text field.
4. The Typical EK 1.0 consist of one circuit breaker or fuse and one dedicated auxiliary contact. All auxiliary contacts can be grouped together as a common alarm to the DCS. Subsequently, this typical represents only an uncontrolled feeder.

The supplementary code on the top right of the I&C symbol shall uniquely identify the different types of the typical.

The supplementary code shall always comprise a number, a decimal point and a second number.

Далее определяются три различных вида типовой документации:

1. Типовая документация для одиночных электроприводов (электродвигателей) должна быть обозначена с помощью маркировки **"EU x.y"** на символе КИПиА, верхнее текстовое поле.
2. Типовая документация для исполнительных устройств (клапанов) должна быть обозначена с помощью маркировки **"UV x.y"** на символе КИПиА, верхнее текстовое поле.
3. Типовая документация для сетевых электронагревателей должна быть обозначена с помощью маркировки **"EM x.y"** на символе КИПиА, верхнее текстовое поле.
4. Типовой элемент EK 1.0 состоит из одного автоматического выключателя или предохранителя и одного специального вспомогательного контакта. Все вспомогательные контакты могут быть сгруппированы как общий аварийный сигнал для DCS. Впоследствии этот типовой элемент представляет собой только неуправляемый фидер.

Дополнительный код в верхней правой части символа КИПиА должен однозначно определять разные виды типовой документации.

Дополнительный код должен всегда заключать в себе цифру, десятичную точку и вторую цифру.

For example:

- EU 2.2
- UV 1.1
- EM 1.2

Например:

- EU 2.2
- UV 1.1
- EM 1.2

1.2.2 Electric single drives / Одиночные электроприводы

Electric motors shall be differentiated on the basis of direction of rotation, speed, variable speed:

Электродвигатели должны различаться на основании направления вращения, частоты вращения, регулируемой частоты вращения:

- | | |
|--|--|
| • EU 1.y = Motor, 1 direction of rotation | • EU 1.y = Электродвигатель, 1 направление вращения |
| • EU 2.y = Motor, 2 directions of rotation | • EU 2.y = Электродвигатель, 2 направления вращения |
| • EU 5.y = Variable speed motor (with VFD) | • EU 5.y = Электродвигатель с регулируемой частотой вращения (с частотно-регулируемым электроприводом) |
| • EU 7.y = Actuator | • EU 7.y = Исполнительное устройство |
| • EU 8.y = Feeder | • EU 8.y = Питатель |
| • EU 9.y = Circuit breakers, multimeter | • EU 9.y = Автоматические выключатели, мультиметр |

1.2.3 Pneumatic and hydraulic actuators / Пневматические и гидравлические исполнительные устройства

Pneumatic (hydraulic) actuators shall be differentiated on the basis of single or double-acting drives and/or variable speed drives:

Пневматические (гидравлические) исполнительные устройства должны различаться по признаку приводов одно- или двустороннего действия и/или приводов с регулируемой частотой вращения:

- | | |
|---|---|
| • UV 1.y = Pneumatic actuator, open/close function, de-energised and depressurised closed with 3-way, 2-position pilot valve | • UV 1.y = Пневматическое исполнительное устройство, функция открытия/закрытия, обесточенное и со сброшенным давлением в положении "закрыт", с 3-ходовым 2-позиционным управляющим клапаном |
| • UV 2.y = Pneumatic actuator, open/close function, depressurised remaining, de-energised closed with 4-way, 2-position pilot valve | • UV 2.y = Пневматическое исполнительное устройство, функция открытия/закрытия, остающееся со сброшенным давлением, обесточенное в положении "закрыт", с 4- |

- | | |
|---|--|
| <ul style="list-style-type: none"> • UV 3.y = Pneumatic (hydraulic) actuator, open/close function, depressurised and de-energised remaining with 5-way, 3-position pilot valve • UV 4.y = Actuator with electric pneumatic position controller without position indication feedback • UV 5.y = Solenoid valve, open/close function | <p>ходовым 2-позиционным управляющим клапаном</p> <ul style="list-style-type: none"> • UV 3.y = Пневматическое (гидравлическое) исполнительное устройство, функция открытия/закрытия, остающееся со сброшенным давлением и обесточенным, с 5-ходовым 3-позиционным управляющим клапаном • UV 4.y = Исполнительное устройство с электропневматическим устройством позиционирования без индикации положения, обратной связи • UV 5.y = Электромагнитный клапан, функция открытия/закрытия |
|---|--|

1.2.4 Electric heaters / Электронагреватели

Electric heaters shall be differentiated on the basis of self-regulation or constant heat output:

Электронагреватели должны различаться на основании автоматического регулирования или постоянной тепловой мощности:

- | | |
|--|---|
| <ul style="list-style-type: none"> • EM 1.y = Constant heat output • EM 2.y = Self-controlled heat output • EM 3.y = Exterior impulse lines | <ul style="list-style-type: none"> • EM 1.y = Постоянная тепловая мощность • EM 2.y = Автоматически регулируемая тепловая мощность • EM 3.y = Внешние импульсные линии |
|--|---|

1.2.5 Differentiation within the types / Дифференциация в пределах типов

The supplementary code shall be structured as follows:

Дополнительный код должен быть структурирован следующим образом:

Second number "y":

Вторая цифра "y":

Division according to the operation of the drive logic (Principal types EU 1 – 2):

Разделение в соответствии с действием логики привода (основные типы EU 1 – 2):

- | | |
|---|--|
| <ul style="list-style-type: none"> • 1 = without local operation • 2 = with local operation | <ul style="list-style-type: none"> • 1 = без локального управления • 2 = с локальным управлением |
|---|--|

1.2.6 SIL 2 applications / Применения по SIL 2

Typicals for SIL 2 applications, equipped with a safe stop interface connected to the SIS, are complemented with another decimal point and the letters FS (Fail Safe).

Типовая документация для применений по уровню полноты безопасности SIL 2, соединенным с автоматизированной системой обеспечения безопасности (SIS), дополняется еще одной десятичной точкой и буквами FS (отказоустойчивый).

1.2.7 Emergency Stop applications / Применения аварийного останова

Typicals for applications with an Emergency Stop Button are complemented with another decimal point and the letters ES (Emergency Stop).

Типовая документация для применений кнопки аварийного останова дополняется еще одной десятичной точкой и буквами FS (аварийный останов).

1.2.8 Modification for project-specific requirements / Модификация в соответствии с требованиями по конкретному проекту

If a specific function not corresponding to the standard should be required in the project, a second decimal point and a letter (A-X) shall be appended to the supplementary code. The letter after the second number is used to differentiate between secondary types used on a project-specific basis. For example, it may be necessary to distinguish between operation and / or feedback.

Если в рамках проекта требуется специфическая функция, не соответствующая стандарту, к дополнительному коду должна быть добавлена вторая десятичная точка и буква (A-X). Буква после второй цифры используется для дифференциации вторичных типов, используемых на основании требований, специфических для проекта. Например, может возникнуть необходимость различать между управлением и/или обратной связью.

For example:

- EU 2.2.A
- UV 1.1.A
- EM 1.2.A

Например:

- EU 2.2.A
- UV 1.1.A
- EM 1.2.A

1.3 Package units / Комплектные блоки

For Package Units, operator control and monitoring functions must be indicated individually on PID's. The typicals referred to above must not be used.

Для комплектных блоков, функции контроля и управления оператором должны быть указаны отдельно на схемах трубопроводов и КИП. Типовую документацию, относящуюся к вышеуказанным блокам, не следует использовать.

1.4 Local control boxes / Блоки местного управления

Local control boxes access the MCC outgoing feeder directly (i.e. that they are not linked via the DCS) or are working through the DCS to the MCC's.

Блоки местного управления подключаются к щиту управления электродвигателями отходящей питающей линии напрямую (т.е. они не соединены через АСУ ТП) либо работают через АСУ ТП со щитом управления электродвигателями.

1.5 Definitions and abbreviations / Определения и аббревиатуры

BI	Binary input	Дискретный вход
BO	Binary output	Дискретный выход
AI	Analogue input	Аналоговый вход
AO	Analogue output	Аналоговый выход

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HW	Hardwired signal	Проводной сигнал
Bus	Signal by data bus (e.g. Profibus, Foundation Fieldbus)	Сигнал, переданный по шине данных (напр., Profibus, Foundation Fieldbus)
RIO	Remote I/O box	Удаленный ввод-вывод
SIL	Safety Integrity Level	Уровень полноты безопасности
SIS	Safety Instrumented System	Автоматизированная система обеспечения безопасности
MCC	Motor Control Centre	Щит управления электродвигателями
VFD	Variable frequency drive ("frequency converter")	Частотно-регулируемый привод ("частотный преобразователь")
SST	Softstarter	Устройство плавного пуска
DB	Distribution board	Распределительный щит
MCB	Miniature Circuit Breaker	Миниатюрный автоматический выключатель
MVCB	Medium Voltage Circuit Breaker	Автоматический выключатель среднего напряжения
MM	Metering	Учет
LVCB	Low Voltage Circuit Breaker	Автоматический выключатель низкого напряжения
Tr	Transformer	Трансформатор
OilTr	Oil Transformer	Масляный трансформатор
UPS	Uninterruptible power supply	Источник бесперебойного питания (ИБП)
RF	Rectifier	Выпрямитель
BAT	Battery	Батарея
Rem	Remote	Дистанционный
Lcl	Local	Местный
CR	Control Room	Диспетчерская
DCS	Distributed Control System	Автоматизированная система управления технологическим процессом
Opn	Open	Открыт
Cls	Close	Закрыт
fwd	Forward	Вперед
rvs	Reverse	Назад
V1	Speed 1	Скорость вращения 1
V2	Speed 2	Скорость вращения 2
Rel	Release	Расцепление
loc op	Local operation	Местное управление
Ack	Acknowledge	Подтверждение
I	Current	сила тока;
U	Voltage	Напряжение

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PB Push button

Нажимная кнопка

P Pressure

Давление

2 Reference Documents / Справочные документы

Number	Title	Код	Название
50059987	TII Application of the KKS	50059987.	Инструкция TII. Применение KKS
50059984	TII Production of Process & Instrumentation Diagrams	50059984.	Производство TII, схемы трубопроводов и КИП
COMOS – documentation on HZI Intranet		COMOS – документация по сети HZI Intranet	

3 Additional controls, monitoring and MCC - equipment / Дополнительное оборудование управления, контроля и щитов управления электродвигателями

3.1 Safety switch (HS) / Предохранительный выключатель (HS)

This local switch is disconnecting the main current circuit.

Regarding the application of this switch the European regulations and standards EN 60204 Safety of machinery - Electrical equipment of machines have to be obeyed.

Separately drawn on the P&ID: Safety switch, connected directly to the MCC, feedback signal to the DCS.

Этот местный выключатель отключает цепь питания от сети.

В отношении применения этого выключателя следует соблюдать Европейские нормы и стандарты EN 60204 Безопасность машин - Электрооборудование машин и механизмов.

На схеме ТП и КИП начерчены отдельно: Предохранительный выключатель, подключенный непосредственно к щиту управления электродвигателями, сигнал обратной связи на АСУ ТП.

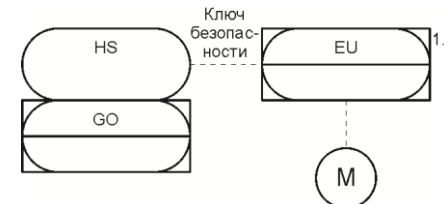
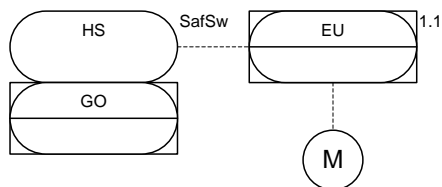


Table 1: Description of the I&C symbols

I&C-Funct.	Signal-Design.	Description	I/O	Signal path				
HS		Safety switch	–	Local	HW	MCC		
GO	XD10	Feedback safety switch	BI	Local	HW	RIO	Bus	DCS

Таблица 1: Описание символов КИПиА

Функция КИПиА	Обозначение сигнала	Описание	Ввод/вывод	Сигнальный тракт				
HS		Предохранительный выключатель	–	Местный	HW	MCC		
GO	XD10	Предохранительный выключатель, обратная связь	BI	Местный	HW	RIO	Bus	АСУ ТП

In case the safety switch is specified for all motors in a project, it will be integrated in the typicals. Subsequently an additional entry on the P&ID is not necessary.

В случае, когда предохранительный выключатель указан для всех электродвигателей в рамках проекта, он будет включен в типовую документацию. Следовательно, дополнительная запись на схеме трубопроводов и КИП не обязательна.

3.2 Emergency stop (HZ) / Аварийный останов (HZ)

Emergency stops are drawn separately on the P&ID's.

Кнопки аварийного останова на схеме трубопроводов и КИП начерчены отдельно.

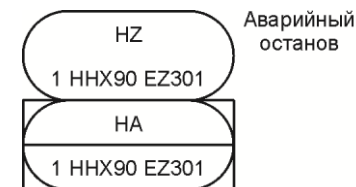
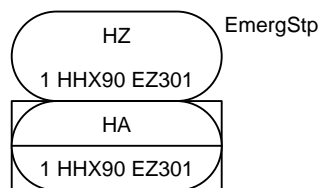


Table 2: Description of the I&C symbols

I&C-Funct.	Signal-Design	Description	I/O	Signal path				
				Local	HW	MCC	Bus	DCS
HZ	-	Emergency stop	-	Local	HW	MCC		
HA	XD19	Emergency stop (indication DCS)	BI	Local	HW	MCC	Bus	DCS

Таблица 2: Описание символов КИПиА

Функция КИПиА	Обозначение сигнала	Описание	Ввод/вывод	Сигнальный тракт				
				Местный	HW	MCC	Bus	АСУ ТП
HZ	—	Аварийный останов	—	Местный	HW	MCC		
HA	XD19	Аварийный останов (индикация АСУ ТП)	BI	Местный	HW	MCC	Bus	АСУ ТП

The activating of an emergency stop is indicated in the control room (HA; feedback signal). Активирование аварийного останова показывается в диспетчерской (HA; сигнал обратной связи).

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If several motors have to be switched off by the same safety chain, a dashed line has to be drawn to each motor.

Если посредством одной и той же цепи безопасности отключаются несколько электродвигателей, к каждому электродвигателю должна быть начерчена пунктирная линия.

If several emergency stops are affecting the same safety chain, a dashed line has to be drawn from each emergency stop to motor(s).

Если несколько кнопок аварийного останова воздействуют на одну и ту же цепь безопасности, к электродвигателю(электродвигателям) должны быть начерчены пунктирные линии от каждой кнопки аварийного останова

4 Implementation of the Operating and Monitoring Functions / Реализация функций управления и контроля

4.1 EU - Functions / Функции EU

Typical	Description	Типовые	Описание
EU 1.0.FS	Auxiliary ID Fan Motor (SIL)	EU 1.0.FS	Вспомогательный электродвигатель вытяжного вентилятора (SIL)
EU 1.1	Motor, 1 Direction of rotation	EU 1.1	Электродвигатель, 1 направление вращения
EU 1.1.ES	Motor, 1 Direction of rotation (E-Stop)	EU 1.1.ES	Электродвигатель, 1 направление вращения (E-Stop)
EU 1.1.FS	Motor, 1 Direction of rotation (SIL)	EU 1.1.FS	Электродвигатель, 1 направление вращения (SIL)
EU 1.2	Motor, 1 Direction of rotation, local control	EU 1.2	Электродвигатель, 1 направление вращения, местное управление
EU 1.2.ES	Motor, 1 Direction of rotation, local control (E-Stop)	EU 1.2.ES	Электродвигатель, 1 направление вращения, местное управление (E-Stop)
EU 1.2.FS	Motor, 1 Direction of rotation, local control (SIL)	EU 1.2.FS	Электродвигатель, 1 направление вращения, местное управление (SIL)
EU 2.1	Motor, 2 Directions of rotation	EU 2.1	Электродвигатель, 2 направления вращения
EU 2.2	Motor, 2 Directions of rotation, local control	EU 2.2	Электродвигатель, 2 направления вращения, местное управление
EU 2.2.ES	Motor, 2 Directions of rotation, local control (E-Stop)	EU 2.2.ES	Электродвигатель, 2 направление вращения, местное управление (E-Stop)
EU 2.2.FS	Motor, 2 Directions of rotation, local control (SIL)	EU 2.2.FS	Электродвигатель, 2 направление вращения, местное управление (SIL)
EU 5.0.FS	ID Fan Motor, Variable Frequency Drive (SIL)	EU 5.0.FS	Электродвигатель вытяжного вентилятора, частотно-регулируемый привод (SIL)
EU 5.1	Motor, VFD controlled	EU 5.1	Электродвигатель, управляемый регулятор частоты вращения
EU 5.1.ES	Motor, VFD controlled (E-Stop)	EU 5.1.ES	Электродвигатель, управляемый регулятор частоты вращения (E-Stop)
EU 5.1.FS	Motor, VFD controlled (SIL)	EU 5.1.FS	Электродвигатель, управляемый регулятор частоты вращения (SIL)
EU 5.3	Motor, VFD controlled, forward, reverse (only locally), local control,	EU 5.3	Электродвигатель, управляемый регулятор частоты вращения, вперед, назад (только местное управление), местное управление,

Project / Проект: Moscow NW 700 PSP: DocNo / № док: 50060297_3.0

Typical	Description	Типовые	Описание
EU 5.3.ES	Motor, VFD controlled, forward, reverse (only locally), local control (E-Stop)	EU 5.3 ES	Электродвигатель, управляемый регулятор частоты вращения, вперед, назад (только местное управление), местное управления (аварийного выключения E-stop).
EU 5.3.FS	Motor, VFD controlled, forward, reverse (only locally), local control, (SIL)	EU 5.3.FS	Электродвигатель, управляемый регулятор частоты вращения, вперед, назад (только местное управление), местное управление, (SIL)
EU 5.4	Motor, VFD controlled, forward, reverse, local control	EU 5.4	Электродвигатель, управляемый регулятор частоты вращения, вперед, назад, местное управление,
EU 5.4.ES	Motor, VFD controlled, forward, reverse, local control (E-Stop)	EU 5.4.ES	Электродвигатель, управляемый регулятор частоты вращения, вперед, назад, местное управления (аварийного выключения E-stop).
EU 5.4.FS	Motor, VFD controlled, forward, reverse, local control (SIL)	EU 5.4.FS	Электродвигатель, управляемый регулятор частоты вращения, вперед, назад, местное управление, (SIL)
EU 7.1	Electric actuator, open - close	EU 7.1	Электрическое исполнительное устройство, открытие - закрытие
EU 7.2	Electric actuator, with positioner	EU 7.2	Электрическое исполнительное устройство с позиционером
EU 7.3	Electric actuator, open – close, with position feedback	EU 7.3	Электрическое исполнительное устройство, открыто – закрытию, с обратной связь положении
EU 8.1	Flashing Light & Horn	EU 8.1	Мигающий фонарь и сирена
EU 8.2	Switched Feeder	EU 8.2	Переключаемая питающая линия
EU 8.4	Traffic Light 2 Lamps	EU 8.4	Светофорн, 2 лампы
EU 8.5	Traffic Light 3 Lamps	EU 8.5	Светофорн, 3 лампы
EU 9.3.A	Low voltage circuit breaker incomer	EU 9.3.A	Автоматический выключатель низкого напряжения, входящая линия
EU 9.3.B	Low voltage circuit breaker coupler	EU 9.3.B	Автоматический выключатель низкого напряжения
EU 9.3.H	Low voltage circuit breaker coupler	EU 9.3.H	Автоматический выключатель низкого напряжения

4.2 UV - Functions / Функции UV

Typical	Description	Типовые	Описание
UV 1.1	Pneumatic actuator, open/close FAIL CLOSED	UV 1.1	Пневматическое исполнительное устройство, открытие/закрытие, ПРИ ОТКАЗЕ ЗАКРЫТ

Project / Проект: Moscow NW 700 PSP: DocNo / № док: 50060297_3.0

Typical	Description	Типовые	Описание
UV 1.1.FS	Pneumatic actuator, open/close FAILSAFE CLOSED (SIL2)	UV 1.1.FS	Пневматическое исполнительное устройство, открытие/закрытие, НОРМАЛЬНО ЗАКРЫТ, (SIL2)
UV 1.1.3.FS	Pneumatic actuator, open/close FAILSAFE CLOSED (SIL2)	UV 1.1.3.FS	Пневматическое исполнительное устройство, открытие/закрытие, НОРМАЛЬНО ЗАКРЫТ, (SIL2)
UV 1.2	Pneumatic actuator, open/close FAIL OPEN	UV 1.2	Пневматическое исполнительное устройство, открытие/закрытие, ПРИ ОТКАЗЕ ОТКРЫТ
UV 1.3	Pneumatic actuator, open/close	UV 1.3	Пневматическое исполнительное устройство, открытие/закрытие
UV 2.1	Pneumatic actuator, open/close FAIL CLOSED	UV 2.1	Пневматическое исполнительное устройство, открытие/закрытие, ПРИ ОТКАЗЕ ЗАКРЫТ
UV 2.2	Pneumatic actuator, open/close FAIL OPEN	UV 2.2	Пневматическое исполнительное устройство, открытие/закрытие, ПРИ ОТКАЗЕ ОТКРЫТ
UV 3.1	Pneumatic / hydraulic actuator, open/close	UV 3.1	Пневматическое (гидравлическое) исполнительное устройство, открытие/закрытие
UV 4.2	Actuator, control function	UV 4.2	Исполнительное устройство, функция управления
UV 4.4	Electro Pneumatic Actuator, with Positioner, with Shut-off Valve	UV 4.4	Электро-пневматическое исполнительное устройство, с механизмом позиционирования, с отсечным клапаном
UV 4.4.FS	Electro Pneumatic Actuator, with Positioner FAILSAFE CLOSED	UV 4.4.FS	Электро-пневматическое исполнительное устройство, с механизмом позиционирования НОРМАЛЬНО ЗАКРЫТ
UV 4.5	Actuator, control function QUICK OPEN	UV 4.5	Исполнительное устройство, функция управления БЫСТРО ОТКРЫТ
UV 4.5.3.FS	Electro Pneumatic Actuator, w. Positioner, QUICK OPEN and FAILSAFE CLOSE	UV 4.5.3.FS	Электро-пневматическое исполнительное устройство, с механизмом позиционирования БЫСТРО ОТКРЫТ и НОРМАЛЬНО ЗАКРЫТ
UV 5.1	Solenoid valve, open/close function FAIL CLOSED	UV 5.1	Электромагнитный клапан, функция открытия/закрытия, ПРИ ОТКАЗЕ ЗАКРЫТ
UV 5.2	Solenoid valve, open/close FAIL OPEN	UV 5.2	Электромагнитный клапан, функция открытия/закрытия, ПРИ ОТКАЗЕ ОТКРЫТ

4.3 EM - Functions / Функции EM-F

Typical	Description	Типовые	Описание
EM 1.1	Trace heating with temperature control in the DCS	EM 1.1	Система сетевого нагрева с управлением температурой в АСУ ТП
EM 2.1	Trace heating with local control (fixed setpoint)	EM 2.1	Система сетевого нагрева с местным управлением (фиксированная уставка)
EM 3.1	Trace heating for exterior impulse lines	EM 3.1	Система сетевого нагрева для внешних импульсных линий

4.4 EK – Functions / Функции EK

Typical	Description	Типовые	Описание
EK 1.0	Uncontrolled cable feeder with auxiliary contact	EK 1.0	Неуправляемый кабельный ввод с вспомогательным контактом

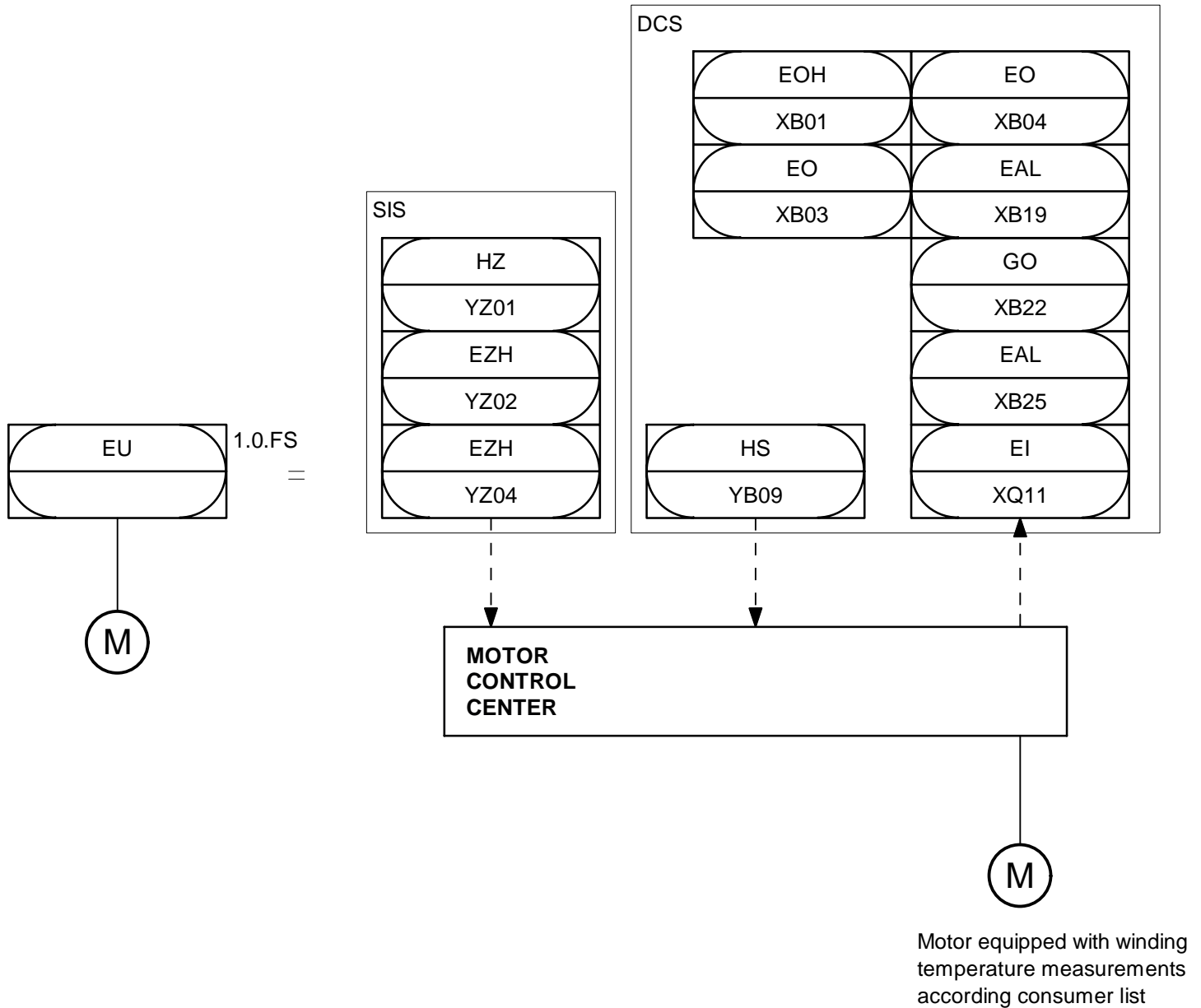
5 Technical documents / Техническая документация

All provided documents are listed in Att.1a List of general attachments and Att.1b List of specific attachments with project-specific document numbers.

Все предоставленные документы перечислены в Приложении 1a «Перечень общих приложений» и в Приложении 1b «Перечень специальных приложений» с соответствующим проектным номером документа.

EU 1.0.FS

Auxiliary ID Fan Motor (SIL)




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Auxiliary ID Fan Motor (SIL) Typical EU 1.0.FS		
					Drawing No. EU 1.0.FS		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

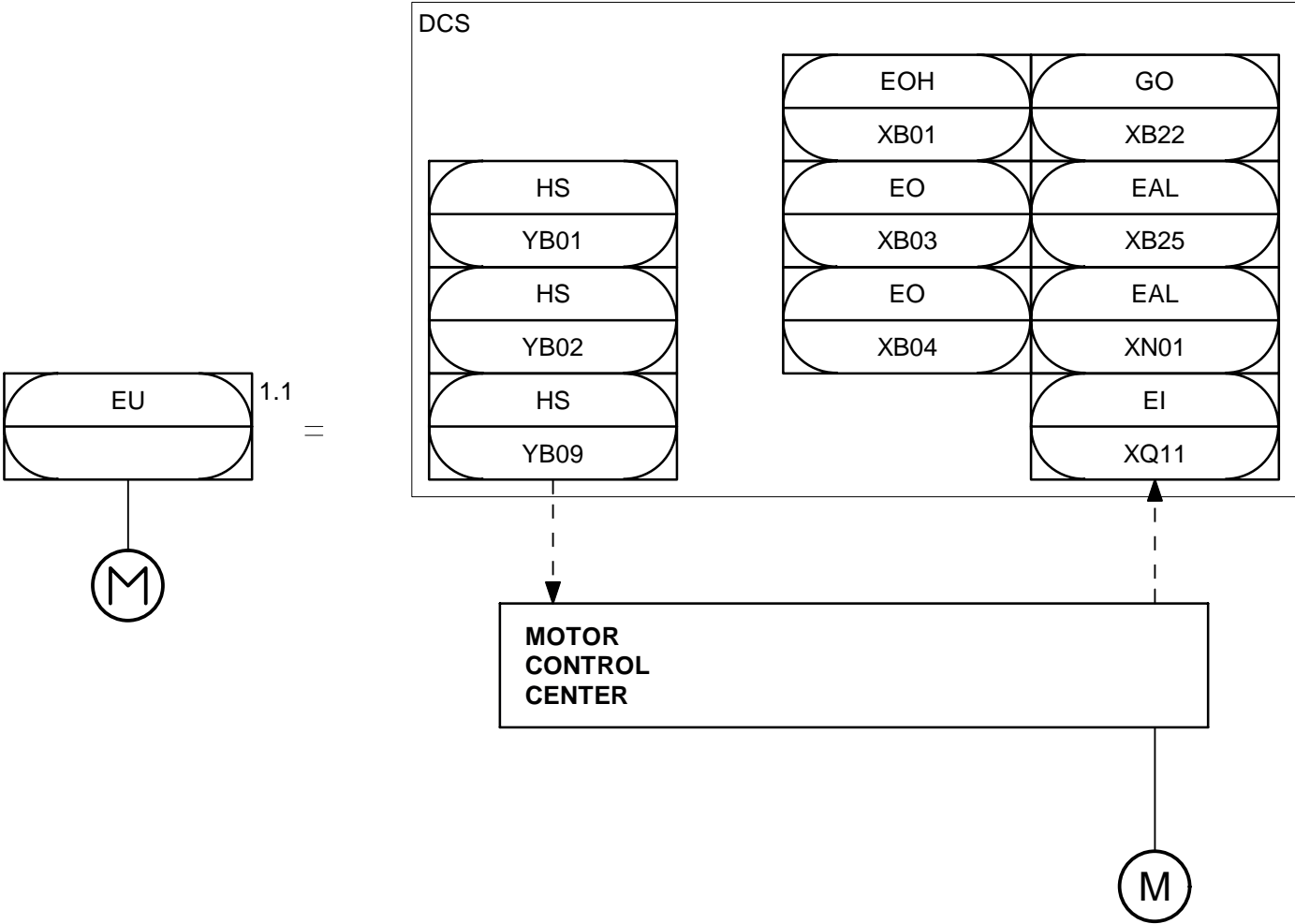
EU 1.0.FS

Auxiliary ID Fan Motor (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
HZ	YZ01	Operation On Command	BO		SIS	HW	MCC		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	MCC		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Auxiliary ID Fan Motor (SIL)		
					Typical EU 1.0.FS		
					Drawing No. EU 1.0.FS		
					Revision 0.0		Page 2 / 2

EU 1.1
Motor, 1 Direction of rotation

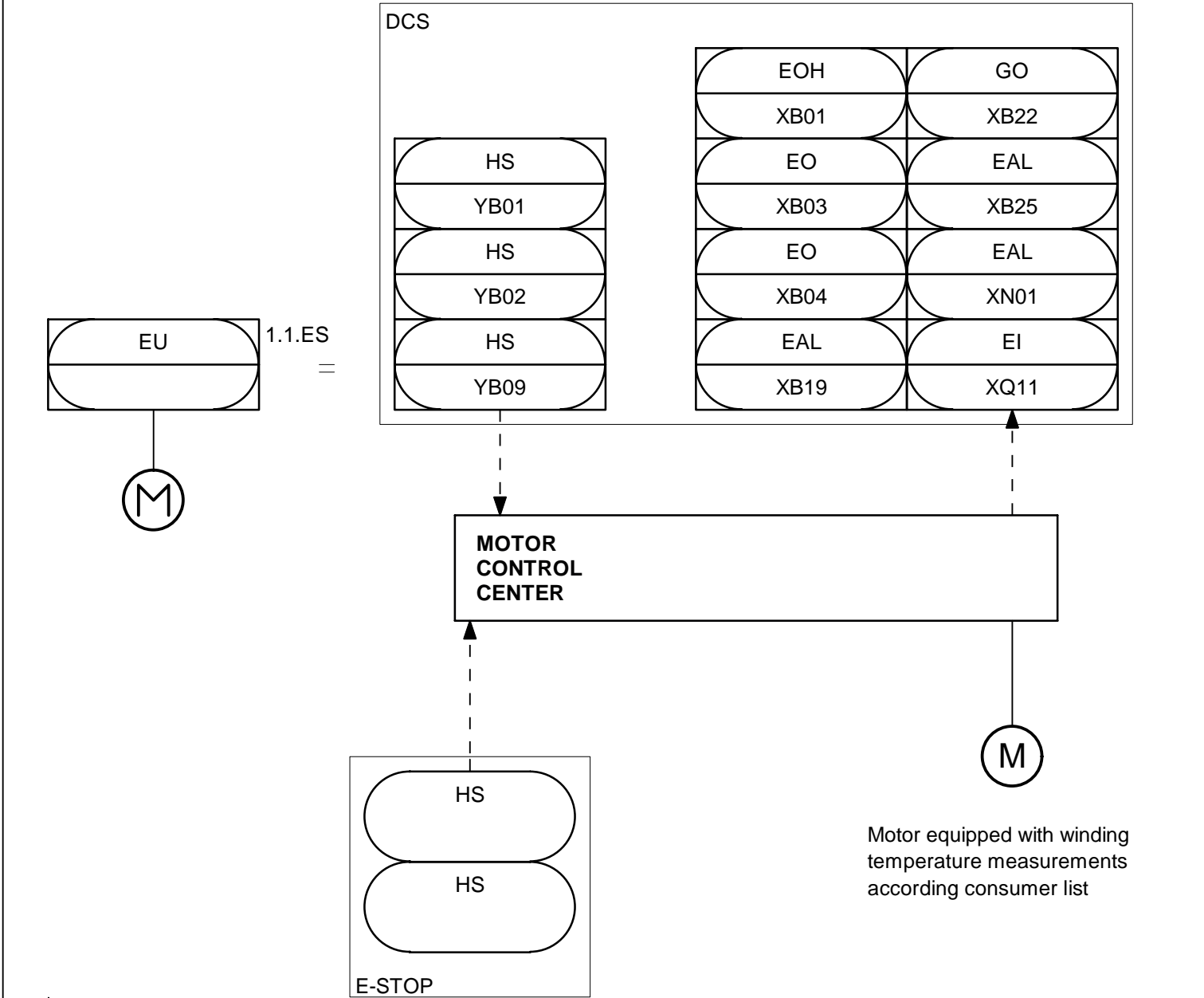


Motor equipped with winding temperature measurements according to consumer list

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation Typical EU 1.1				
					Drawing No. EU 1.1				
					Revision 0.0		Hitachi Zosen INOVA		Page 1 / 2

EU 1.1.ES

Motor, 1 Direction of rotation (E-Stop)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation (E-Stop) Typical EU 1.1.ES		
					Drawing No. EU 1.1.ES		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

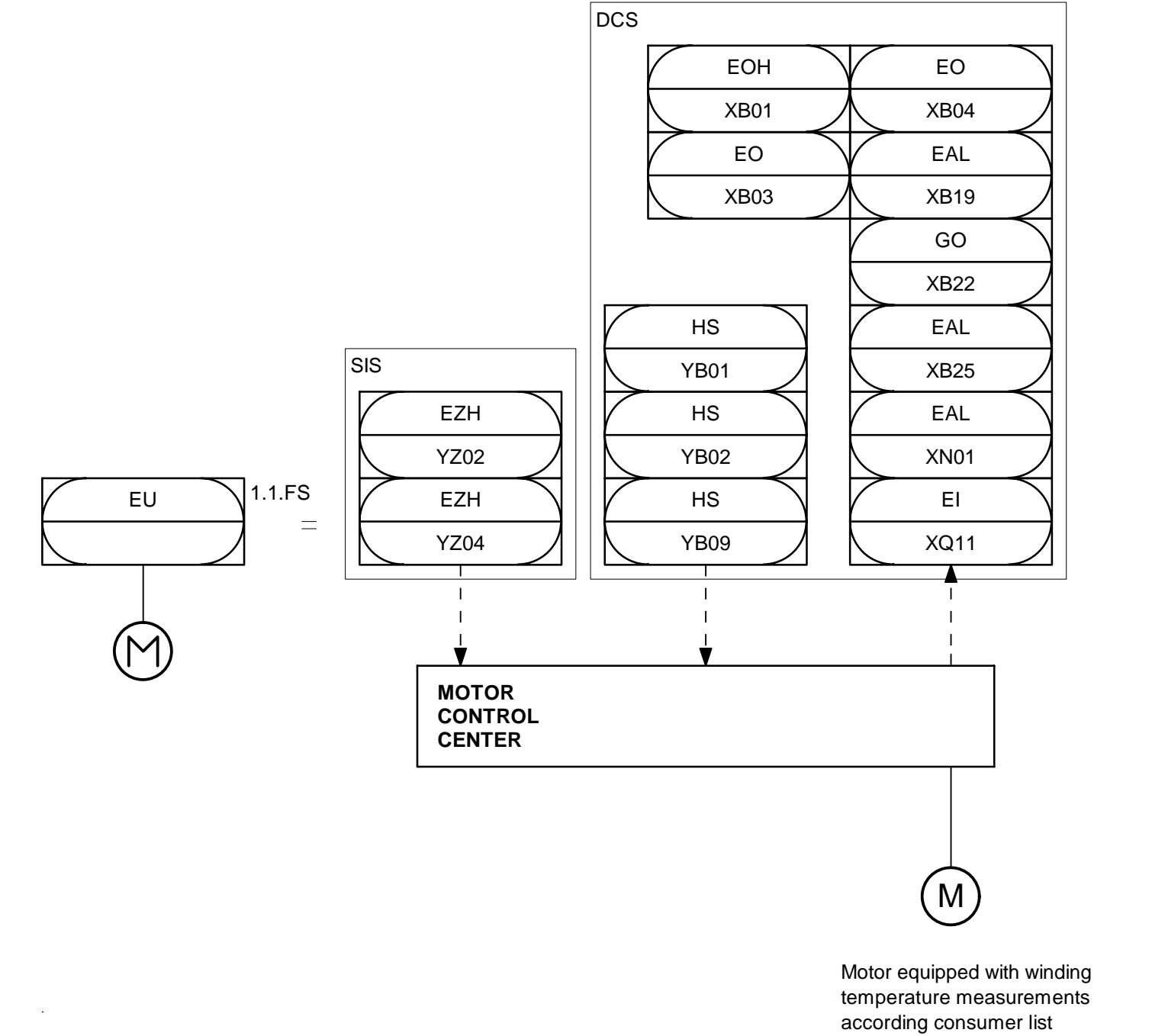
EU 1.1.ES

Motor, 1 Direction of rotation (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation (E-Stop)				
					Typical EU 1.1.ES				
					Drawing No. EU 1.1.ES				
					Revision 0.0				
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EU 1.1.FS
Motor, 1 Direction of rotation (SIL)





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object					
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation (SIL) Typical EU 1.1.FS						
					Drawing No. EU 1.1.FS						
					Revision 0.0		Hitachi Zosen INOVA			Page 1 / 2	

Signal Table

EU 1.1.FS

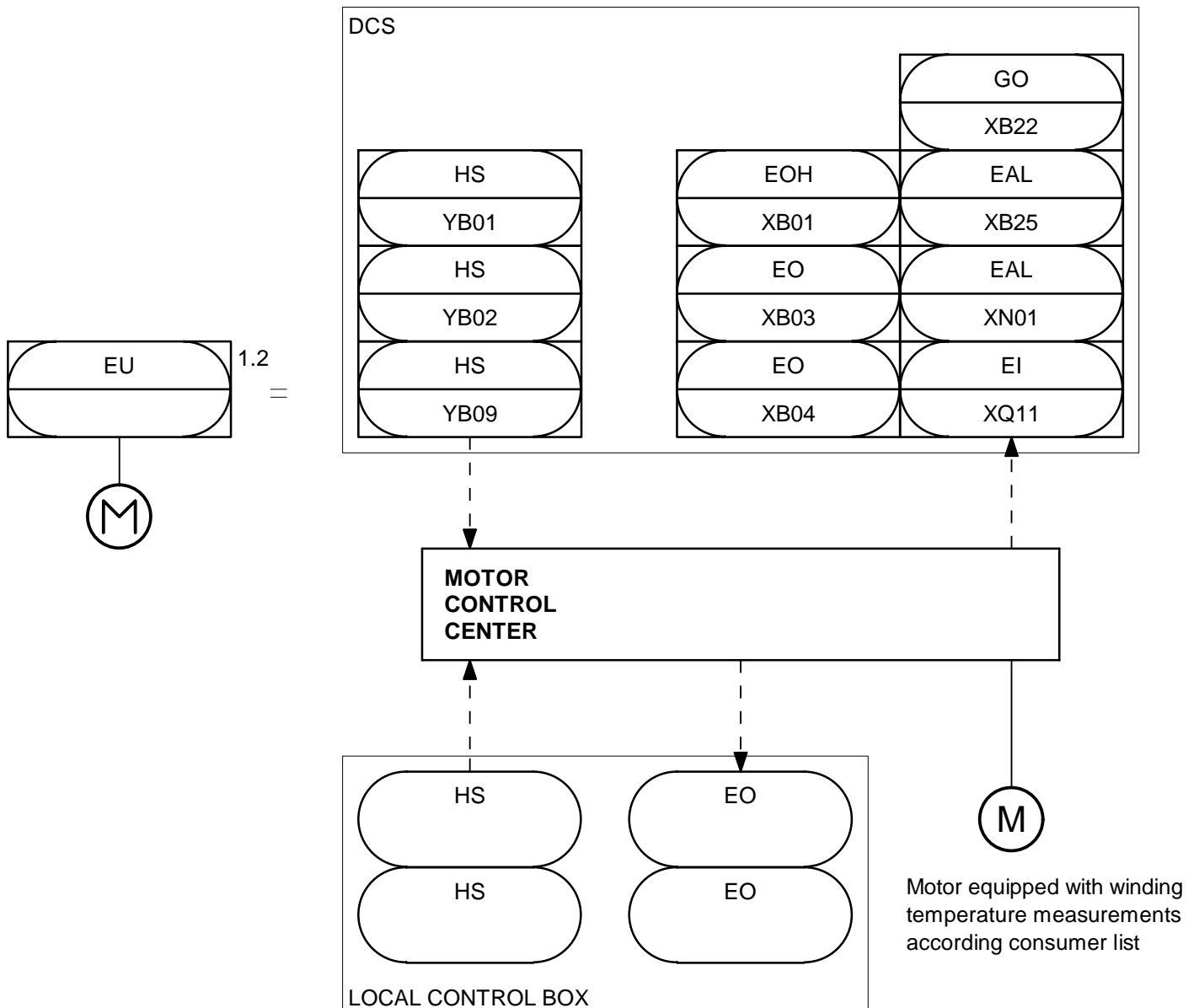
Motor, 1 Direction of rotation (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	MCC		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation (SIL) Typical EU 1.1.FS				
					Drawing No. EU 1.1.FS				
					Revision 0.0				Page 2 / 2

EU 1.2

Motor, 1 Direction of rotation, local control



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation, local control Typical EU 1.2		
					Drawing No. EU 1.2		
					Revision 0.0 Hitachi Zosen INOVA		Page 1 / 2

Signal Table

EU 1.2

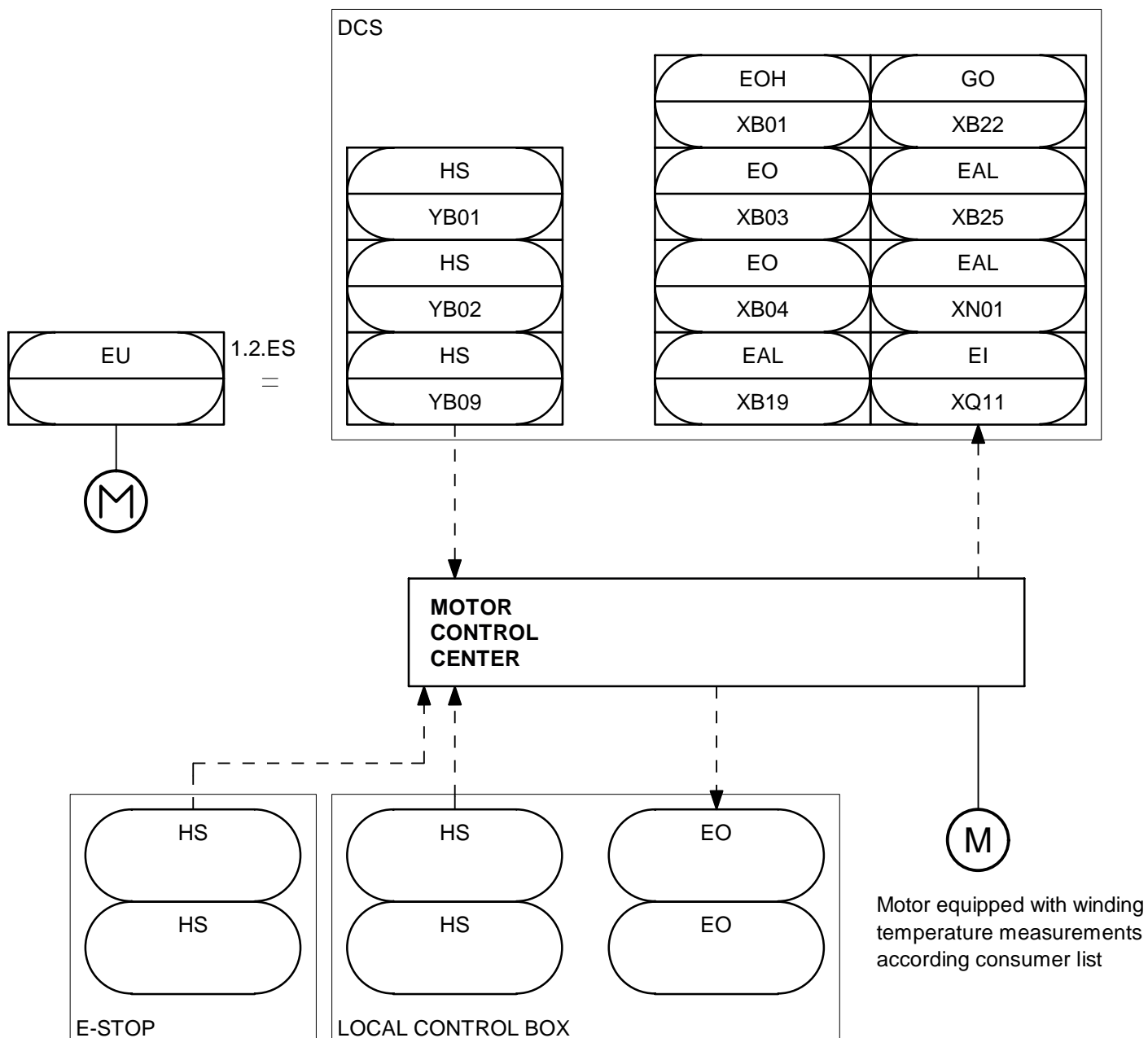
Motor, 1 Direction of rotation, local control

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EO	-	Operation ON Status	--		MCC	HW	Local		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation, local control					
					Typical EU 1.2					
					Drawing No. EU 1.2					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 1.2.ES

Motor, 1 Direction of rotation, local control (E-Stop)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation, local control (E-Stop) Typical EU 1.2.ES		
					Drawing No. EU 1.2.ES		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

EU 1.2.ES

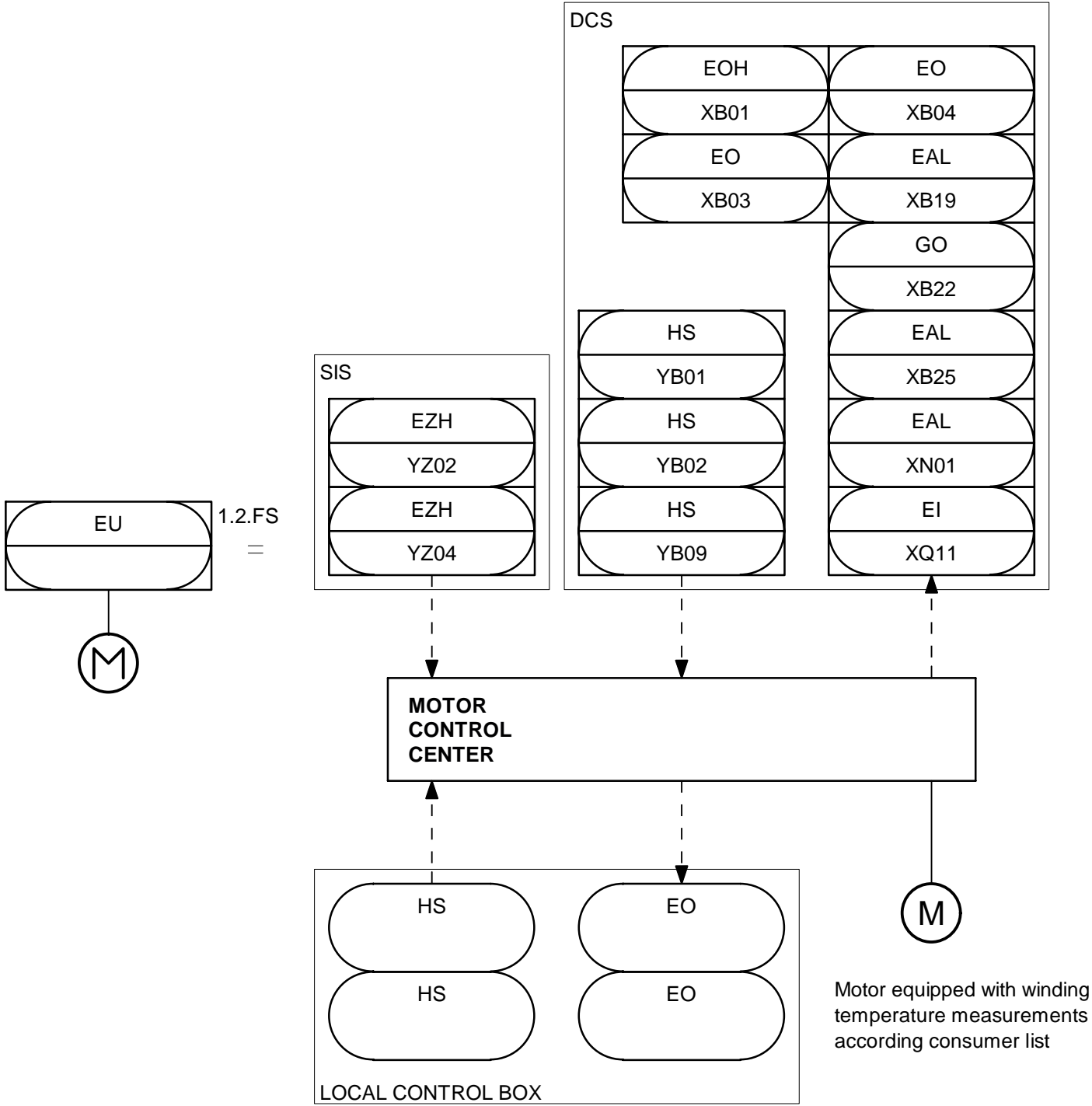
Motor, 1 Direction of rotation, local control (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EO	-	Operation ON Status	--		MCC	HW	Local		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation, local control (E-Stop)					
					Typical EU 1.2.ES					
					Drawing No. EU 1.2.ES					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 1.2.FS

Motor, 1 Direction of rotation, local control (SIL)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation, local control (SIL) Typical EU 1.2.FS		
					Drawing No. EU 1.2.FS		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 1.2.FS

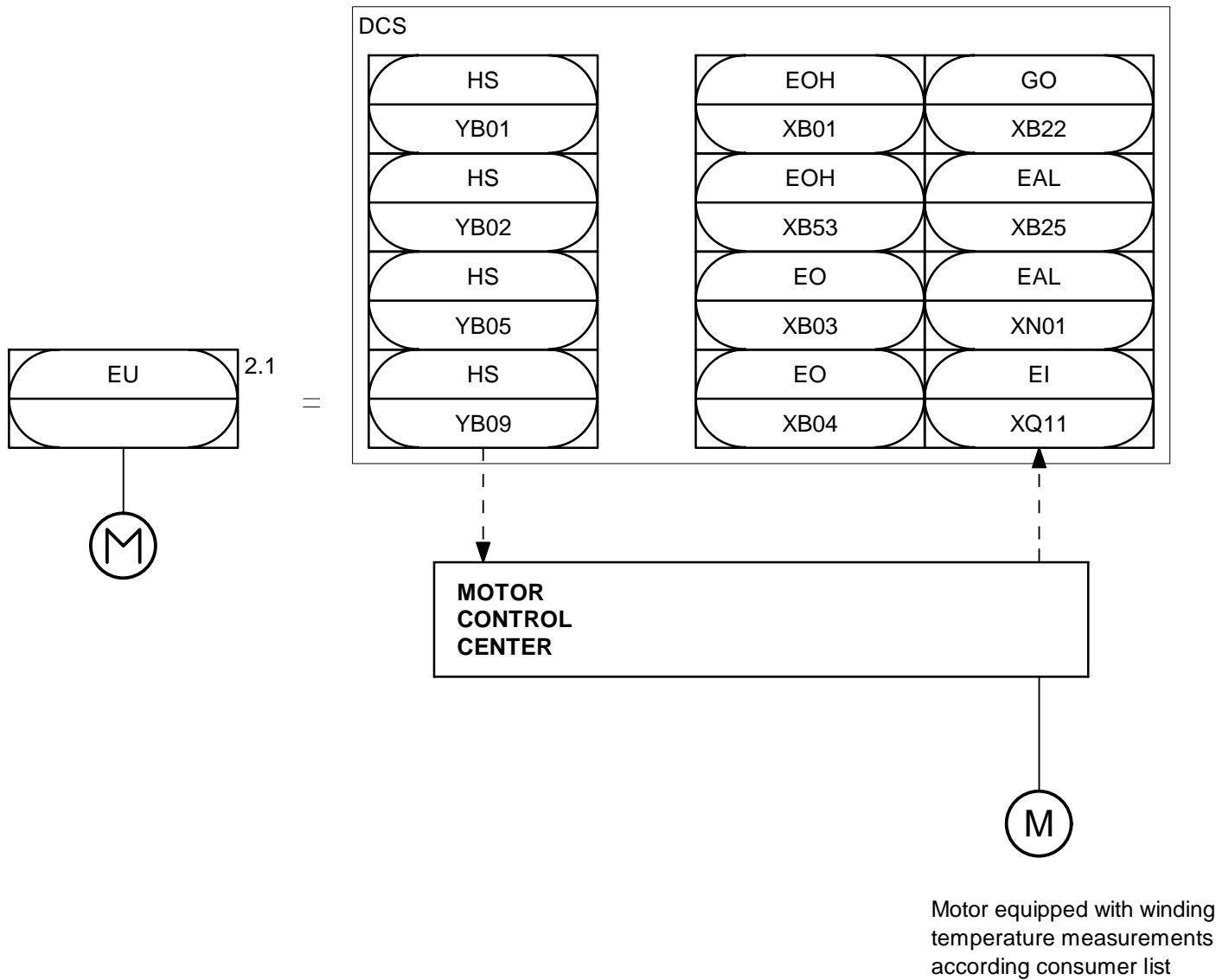
Motor, 1 Direction of rotation, local control (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	MCC		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	MCC		
EO	-	Operation ON Status	--		MCC	HW	Local		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 1 Direction of rotation, local control (SIL)					
					Typical EU 1.2.FS					
					Drawing No. EU 1.2.FS					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 2.1

Motor, 2 Directions of rotation





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation Typical EU 2.1		
					Drawing No. EU 2.1		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

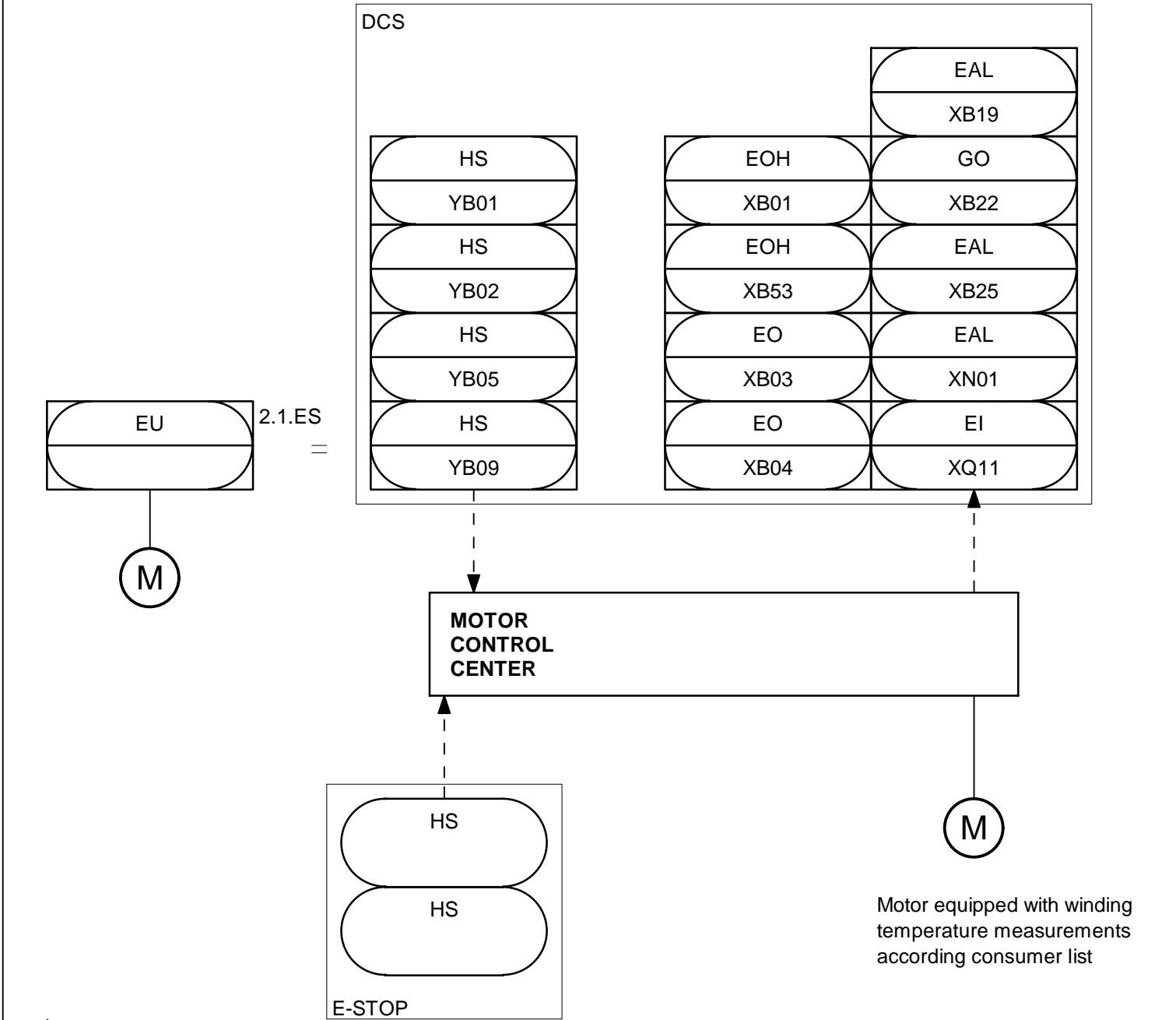
EU 2.1

Motor, 2 Directions of rotation

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation					
					Typical EU 2.1					
					Drawing No. EU 2.1					
					Revision 0.0					Page 2 / 2

EU 2.1.ES
Motor, 2 Directions of rotation (E-Stop)




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation (E-Stop) Typical EU 2.1.ES		
					Drawing No. EU 2.1.ES		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

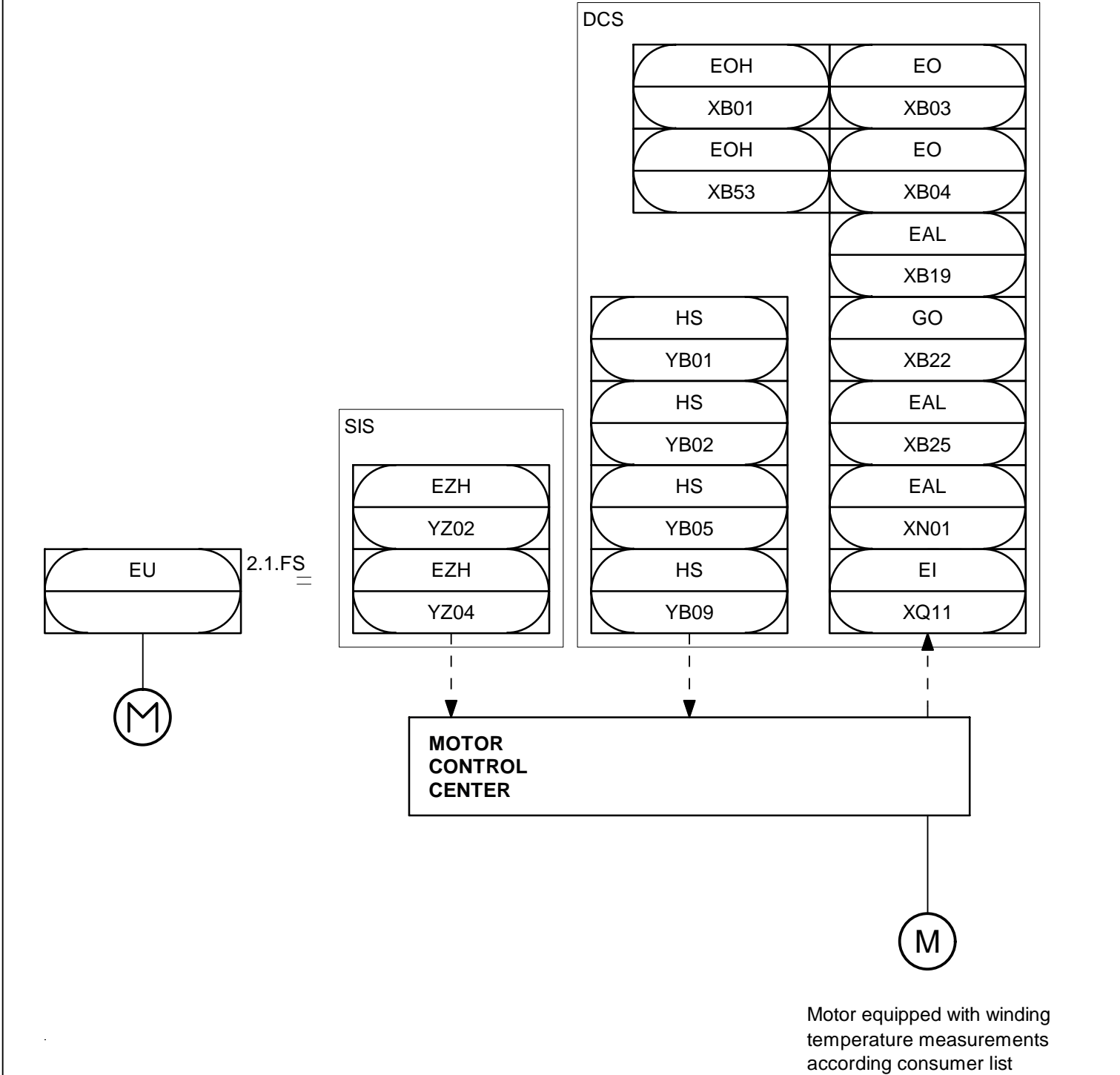
EU 2.1.ES


Motor, 2 Directions of rotation (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation (E-Stop)					
					Typical EU 2.1.ES					
					Drawing No. EU 2.1.ES					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 2.1.FS
Motor, 2 Directions of rotation (SIL)





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation (SIL)		
					Typical EU 2.1.FS		
					Drawing No. EU 2.1.FS		
					Revision 0.0		
					Page 1 / 2		

Signal Table

EU 2.1.FS

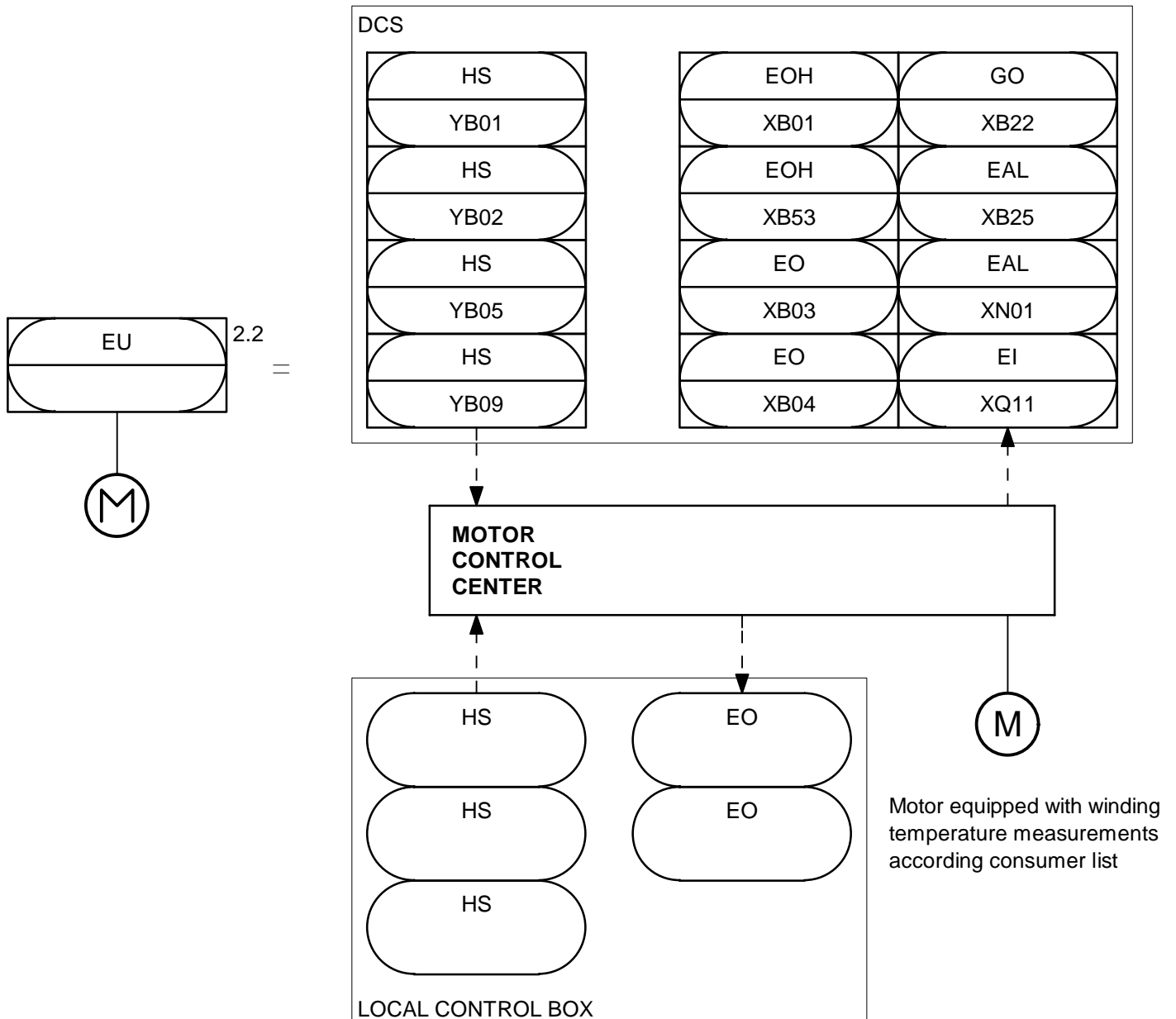
Motor, 2 Directions of rotation (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	MCC		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation (SIL)				
					Typical EU 2.1.FS				
					Drawing No. EU 2.1.FS				
					Revision 0.0				Page 2 / 2

EU 2.2

Motor, 2 Directions of rotation, local control




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation, local control		
					Typical EU 2.2		
					Drawing No. EU 2.2		
					Revision 0.0		
					Hitachi Zosen INOVA		Page 1 / 2

Signal Table

EU 2.2

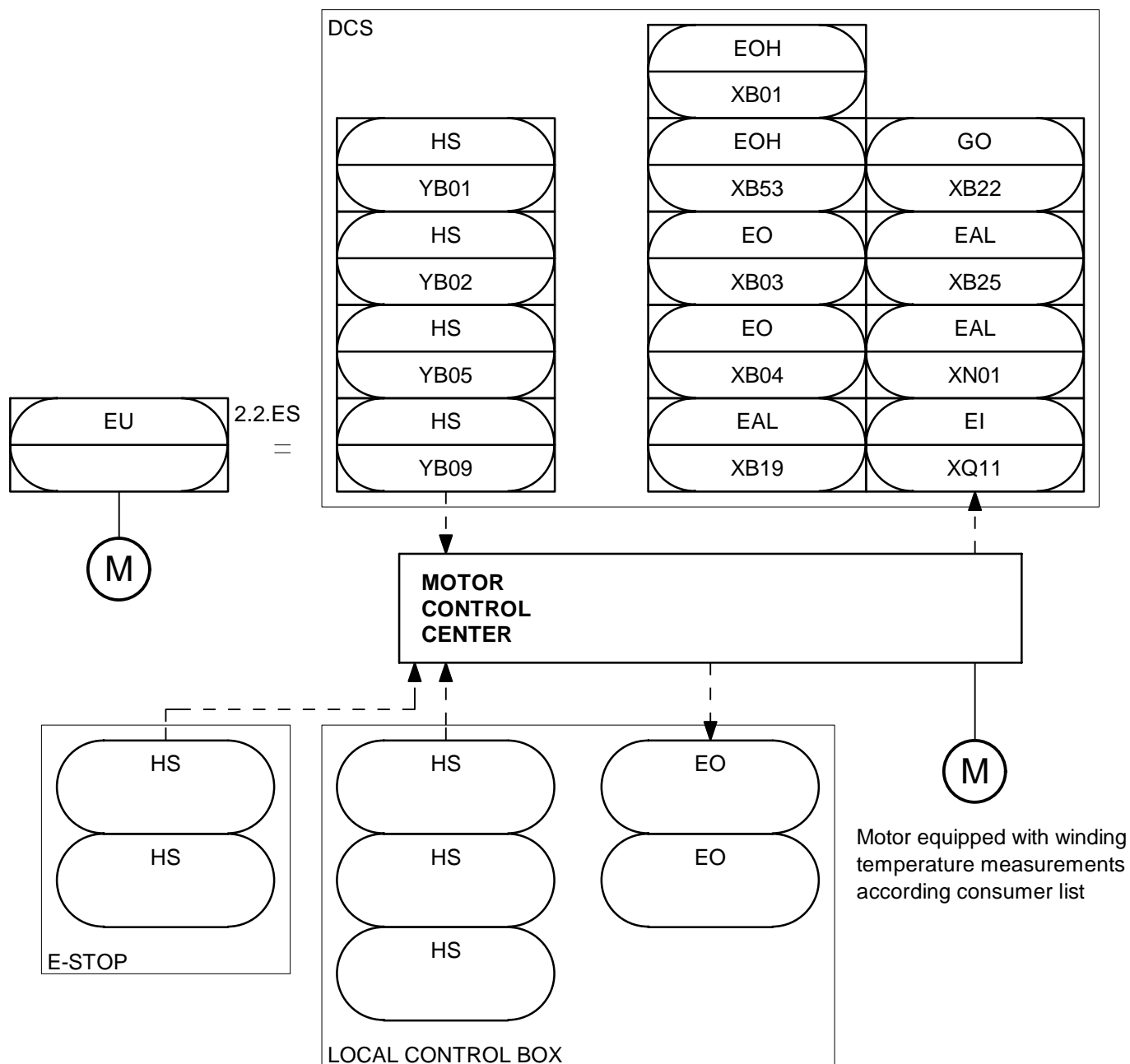
Motor, 2 Directions of rotation, local control

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EO	-	Operation ON Status	--		MCC	HW	Local		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation, local control					
					Typical EU 2.2					
					Drawing No. EU 2.2					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 2.2.ES

Motor, 2 Directions of rotation, local control (E-Stop)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No.	Project Name:
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	SO_HZI3	Base object
						Motor, 2 Directions of rotation, local control (E-Stop)
						Typical EU 2.2.ES
					Drawing No.	EU 2.2.ES
					Revision 0.0	Hitachi Zosen INOVA
						Page 1 / 2

Signal Table

EU 2.2.ES

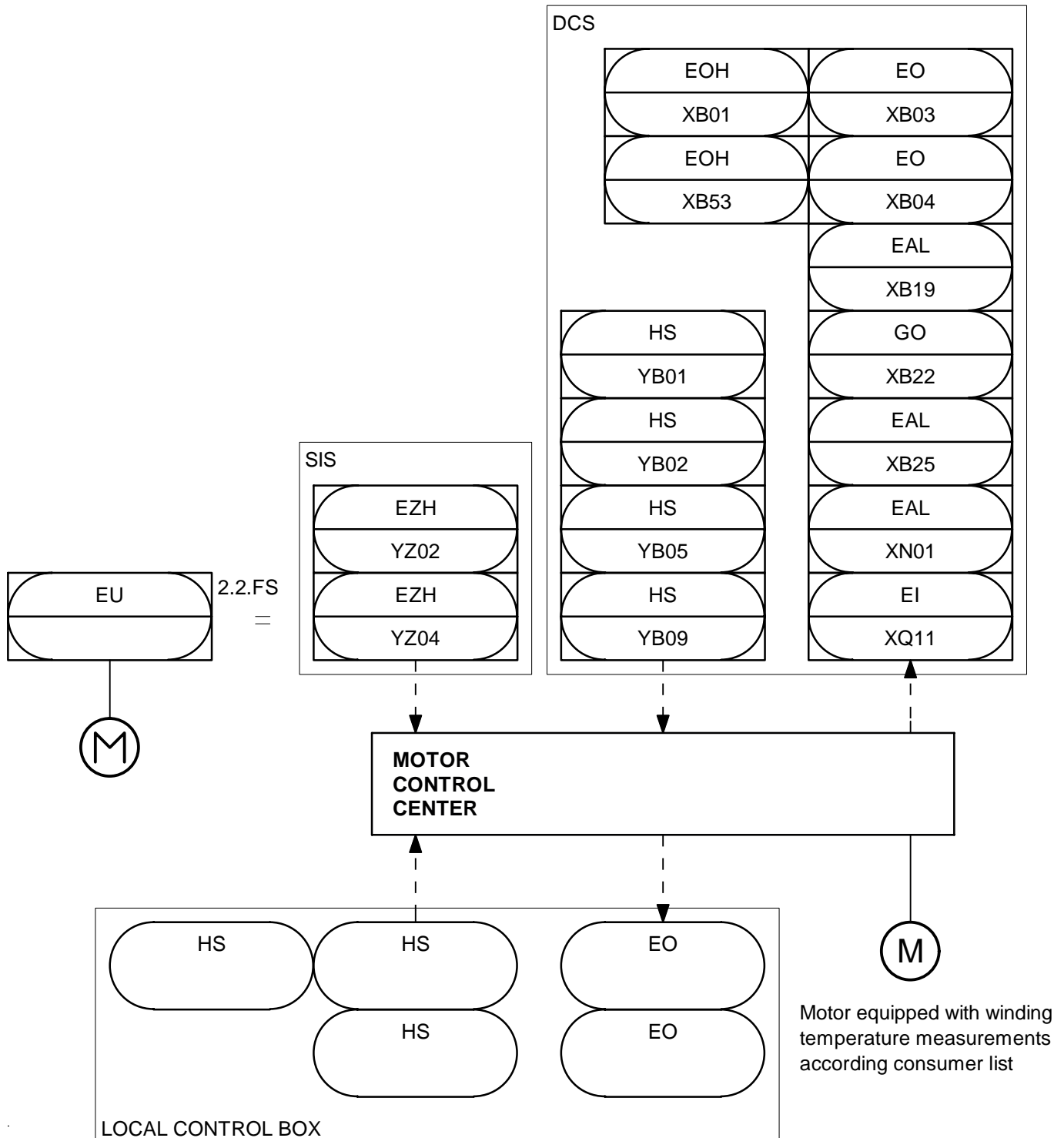
Motor, 2 Directions of rotation, local control (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EO	-	Operation ON Status	--		MCC	HW	Local		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation, local control (E-Stop) Typical EU 2.2.ES					
					Drawing No. EU 2.2.ES					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 2.2.FS

Motor, 2 Directions of rotation, local control (SIL)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No.	Project Name:
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	SO_HZI3	Base object
					Motor, 2 Directions of rotation, local control (SIL)	
					Typical EU 2.2.FS	
					Drawing No.	EU 2.2.FS
					Revision 0.0	Hitachi Zosen INOVA
					Page 1 / 2	

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EU 2.2.FS

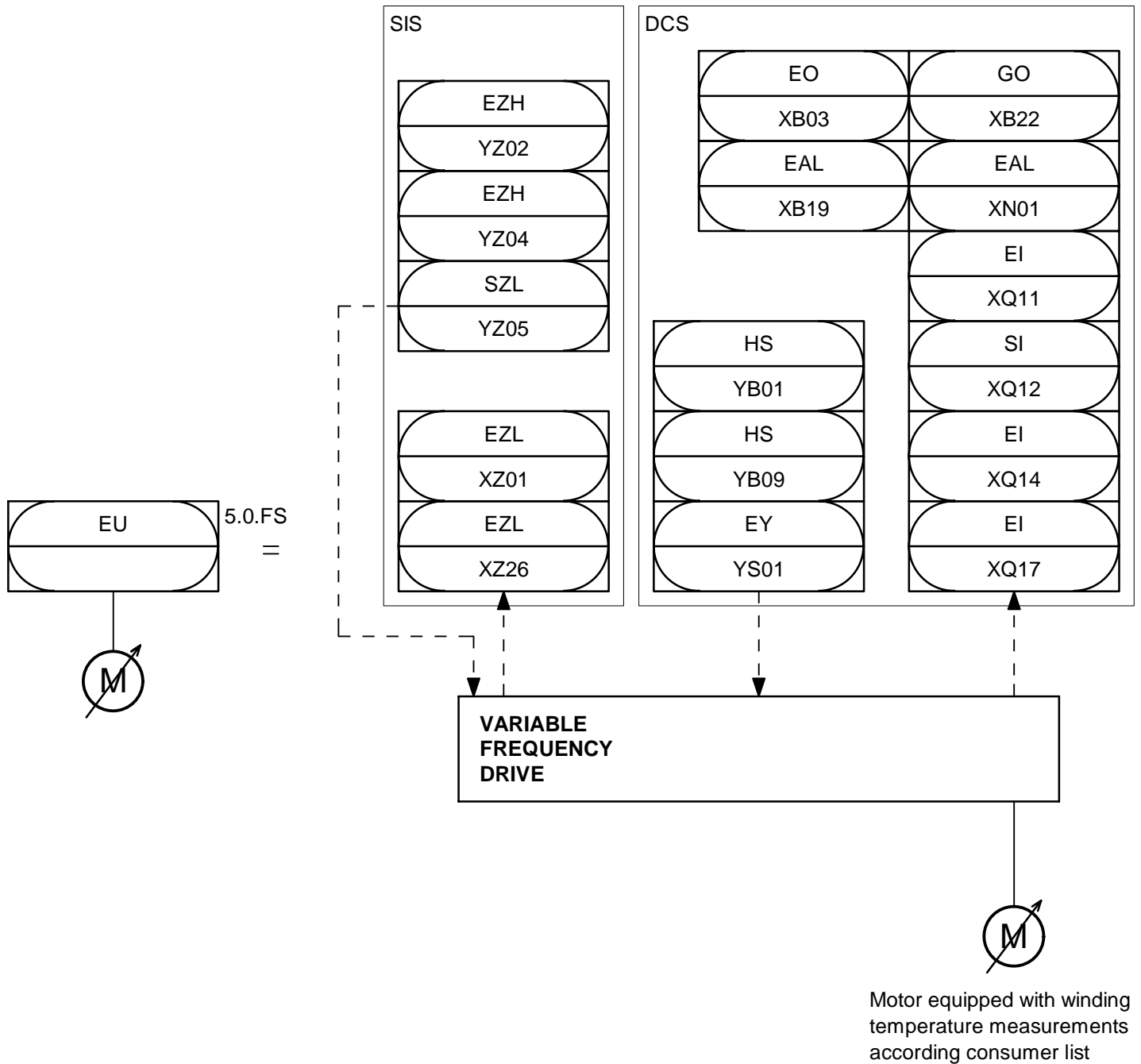
Motor, 2 Directions of rotation, local control (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	MCC	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	MCC		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	MCC		
EO	-	Operation ON Status	--		MCC	HW	Local		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, 2 Directions of rotation, local control (SIL)				
					Typical EU 2.2.FS				
					Drawing No. EU 2.2.FS				
					Revision 0.0				
					Hitachi Zosen INOVA			Page 2 / 2	

EU 5.0.FS

ID Fan Motor, VFD (SIL)




Motor equipped with winding temperature measurements according consumer list

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	ID Fan Motor, VFD (SIL) Typical EU 5.0.FS		
					Drawing No. EU 5.0.FS		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

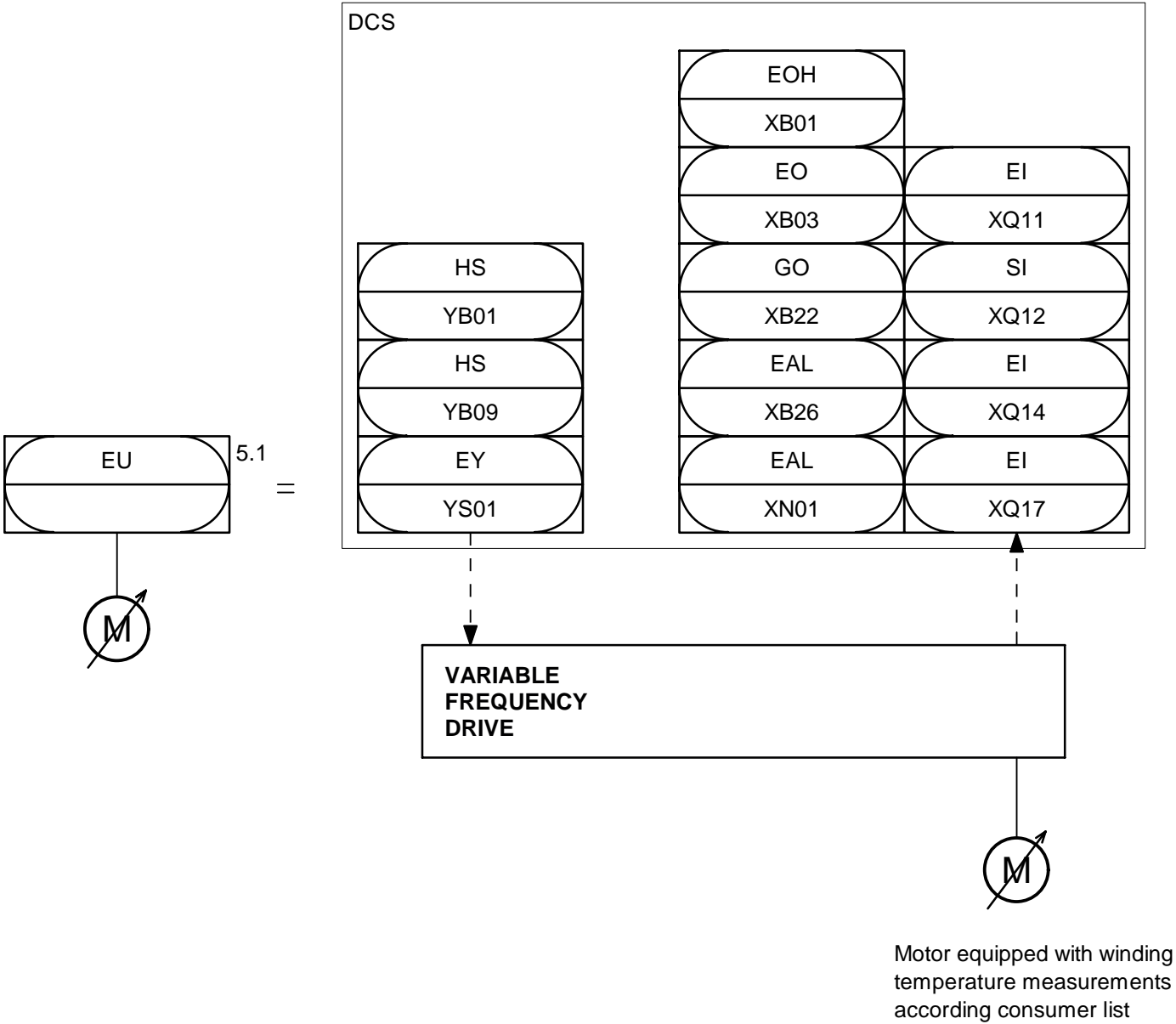
EU 5.0.FS


ID Fan Motor, VFD (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	VFD		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	VFD		
SZL	YZ05	Minimum speed command	BO		SIS	HW	VFD		
EZL	XZ01	Operation ON Status	BI		VFD	HW	SIS		
EZL	XZ26	VFD Fault	BI		VFD	HW	SIS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	ID Fan Motor, VFD (SIL)				
					Typical EU 5.0.FS				
					Drawing No. EU 5.0.FS				
					Revision 0.0				
					Hitachi Zosen INOVA				Page 2 / 2

EU 5.1
Motor, VFD controlled, forward




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward Typical EU 5.1		
					Drawing No. EU 5.1		
					Revision 0.0		
					Page 1 / 2		

Signal Table

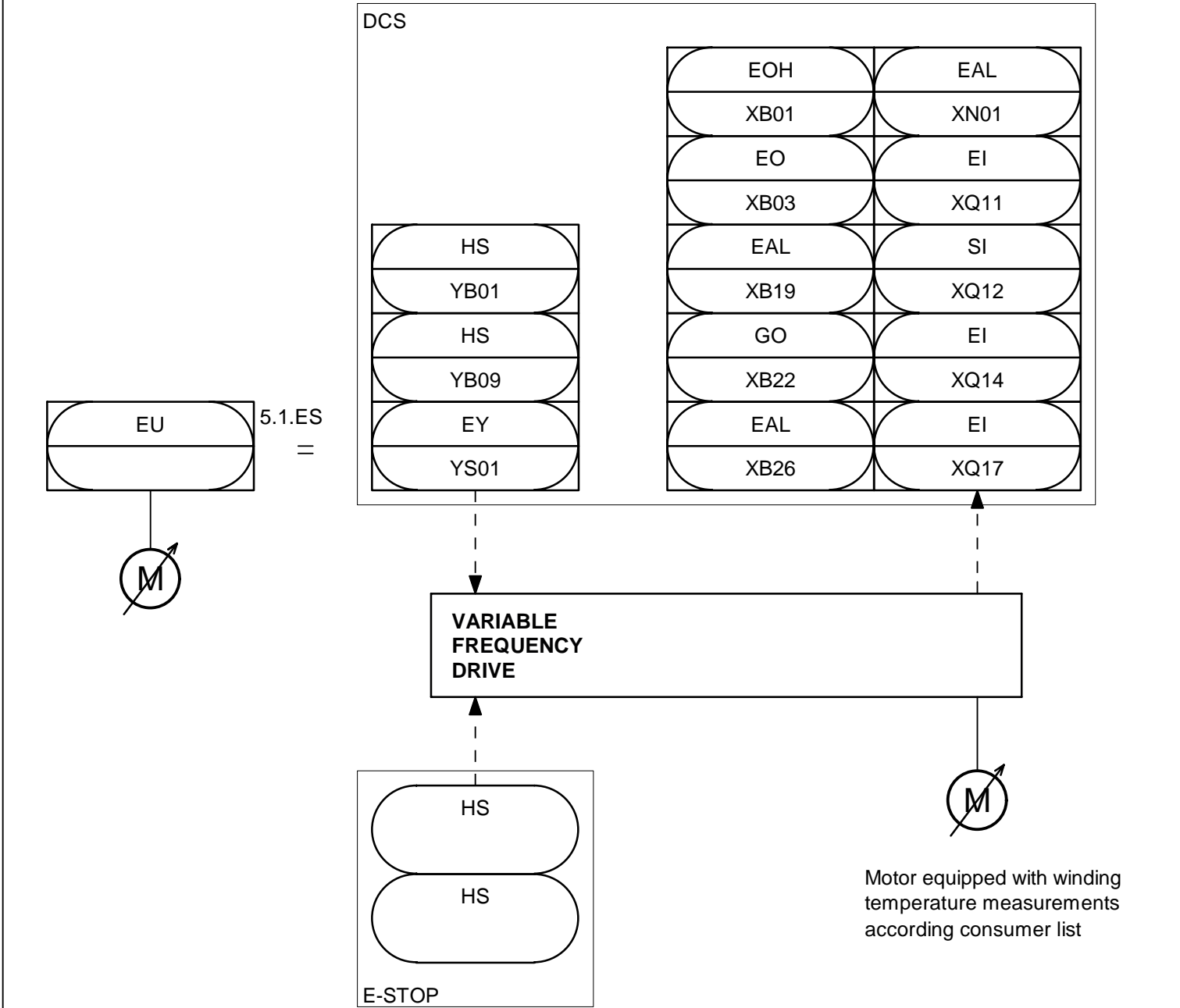
EU 5.1

Motor, VFD controlled, forward

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status	BI	Bus	VFD	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward Typical EU 5.1					
					Drawing No. EU 5.1					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 5.1.ES
Motor, VFD controlled, forward (E-Stop)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object		
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward (E-Stop) Typical EU 5.1.ES			
					Drawing No. EU 5.1.ES			
					Revision 0.0		Hitachi Zosen INOVA	Page 1 / 2

Signal Table

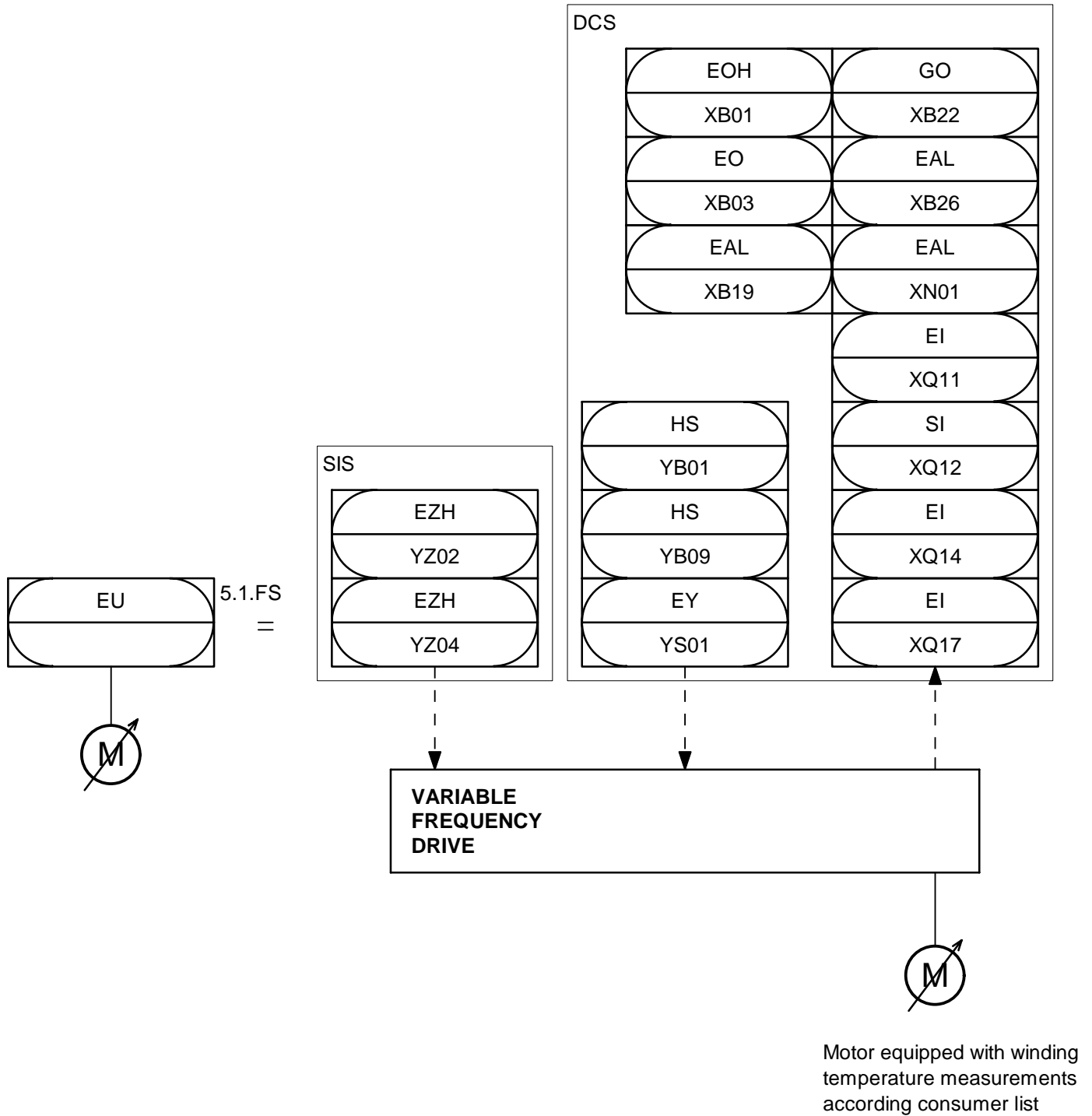
EU 5.1.ES

Motor, VFD controlled, forward (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status	BI	Bus	VFD	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward (E-Stop) Typical EU 5.1.ES					
					Drawing No. EU 5.1.ES					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 5.1.FS **Motor, VFD controlled, forward (SIL)**



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward (SIL)		
					Typical EU 5.1.FS		
					Drawing No. EU 5.1.FS		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 5.1.FS

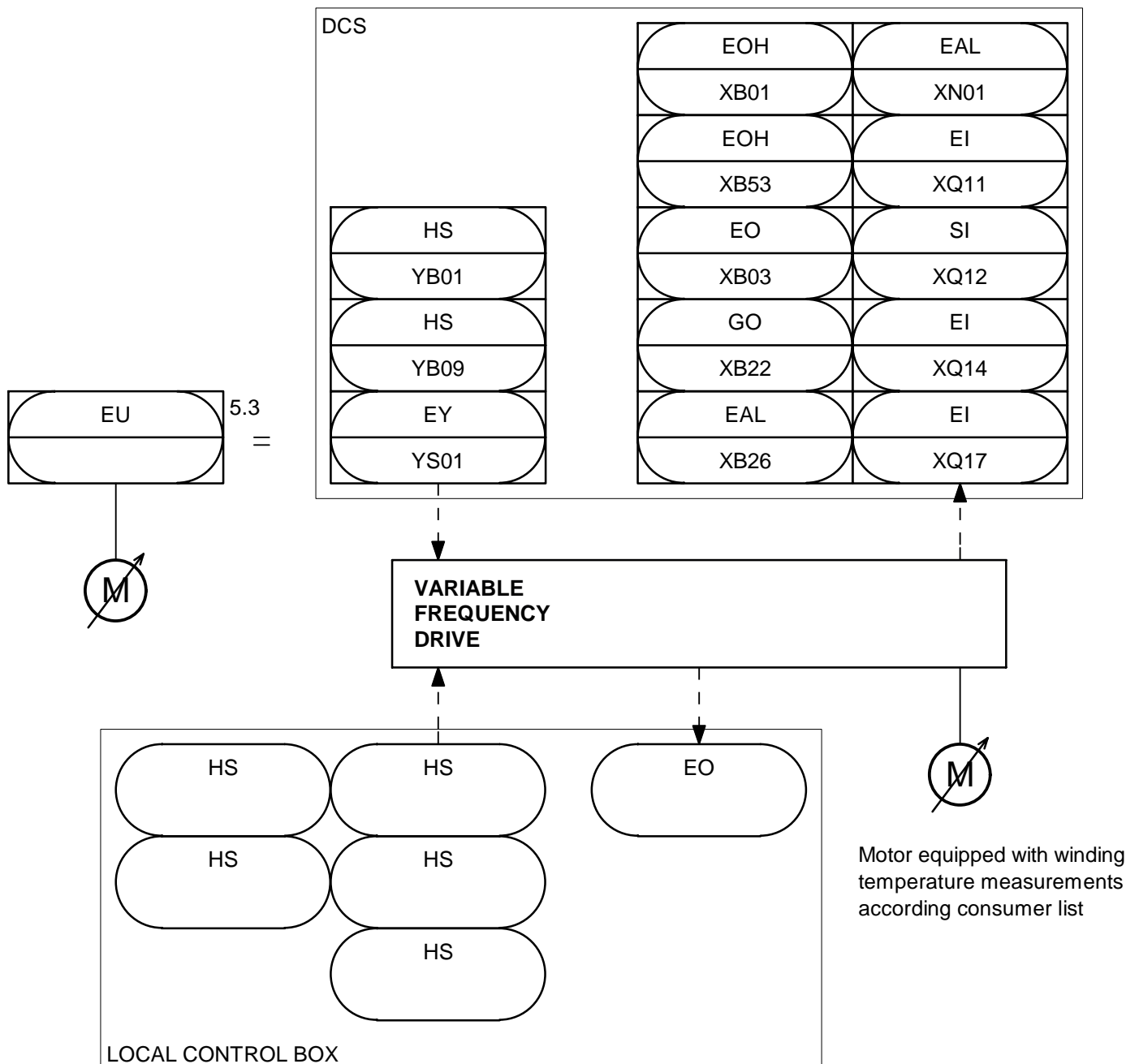
Motor, VFD controlled, forward (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status	BI	Bus	VFD	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO		SIS	HW	VFD		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO		SIS	HW	VFD		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward (SIL) Typical EU 5.1.FS					
					Drawing No. EU 5.1.FS					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 5.3

Motor, VFD controlled, forward, reverse (only locally), local control



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward, reverse (only locally), local control Typical EU 5.3		
					Drawing No. EU 5.3		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 5.3

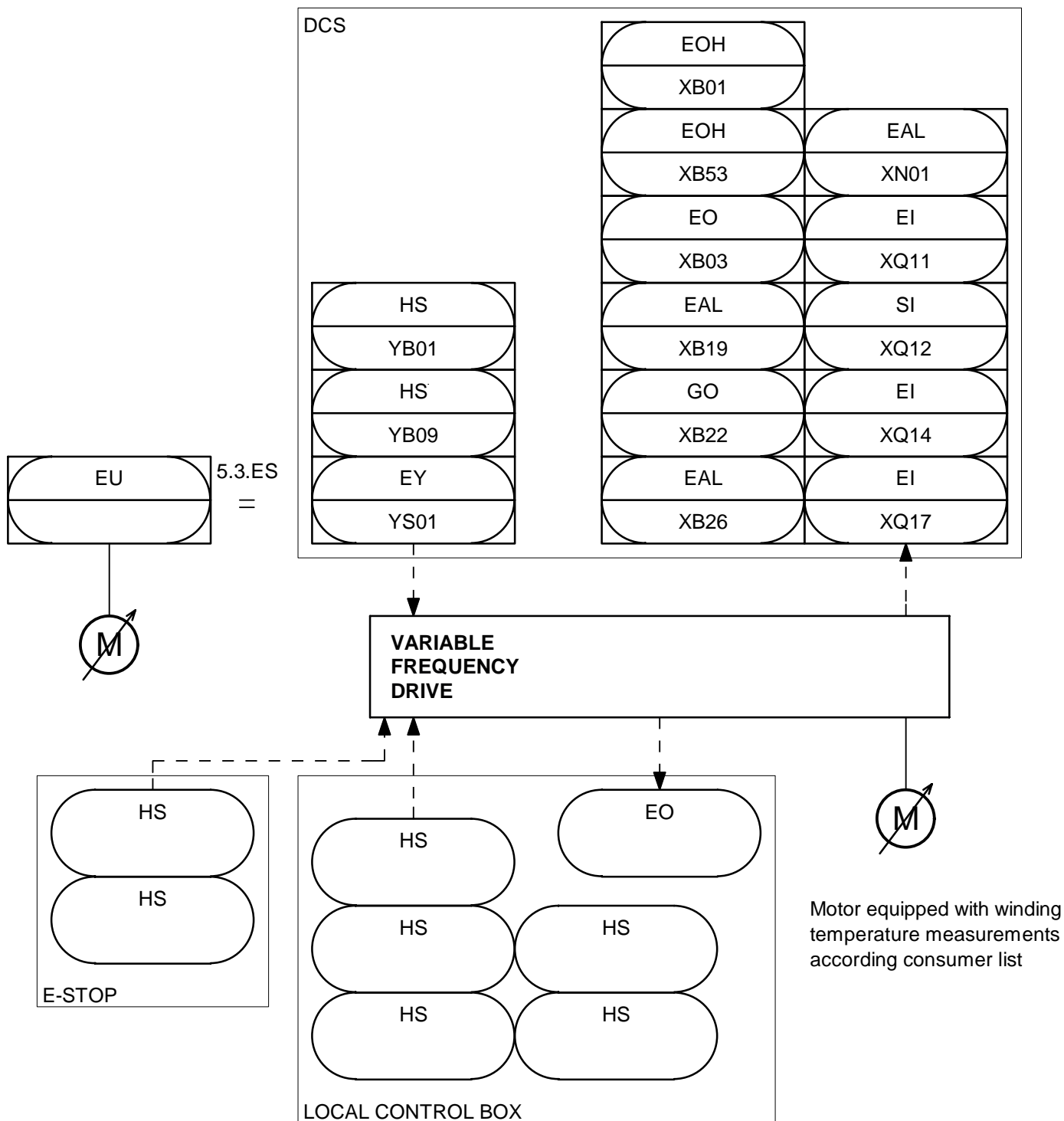
Motor, VFD controlled, forward, reverse (only locally), local control

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Fast Selector (1=Fast / 0=Slow)	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	Reset (Pulse)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward, reverse (only locally), local control Typical EU 5.3					
					Drawing No. EU 5.3					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 5.3.ES

Motor, VFD controlled, forward, reverse (only locally), local control (E-Stop)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No.	Project Name:
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	SO_HZI3	Base object
					Motor, VFD controlled, forward, reverse (only locally), local control (E-Stop)	
					Typical EU 5.3.ES	
					Drawing No.	EU 5.3.ES
					Revision 0.0	Hitachi Zosen INOVA
					Page 1 / 2	

Signal Table

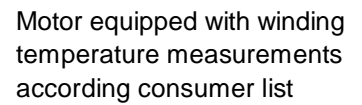
EU 5.3.ES

Motor, VFD controlled, forward, reverse (only locally), local control (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Fast Selector (1=Fast / 0=Slow)	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	Reset (Pulse)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward, reverse (only locally), local control (E-Stop) Typical EU 5.3.ES				
					Drawing No. EU 5.3.ES				
					Revision 0.0			Hitachi Zosen INOVA	Page 2 / 2

Motor, VFD controlled, forward, reverse (only locally), local control (SIL)



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward, reverse (only locally), local control (SIL) Typical EU 5.3.FS		
					Drawing No. EU 5.3.FS		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

EU 5.3.FS

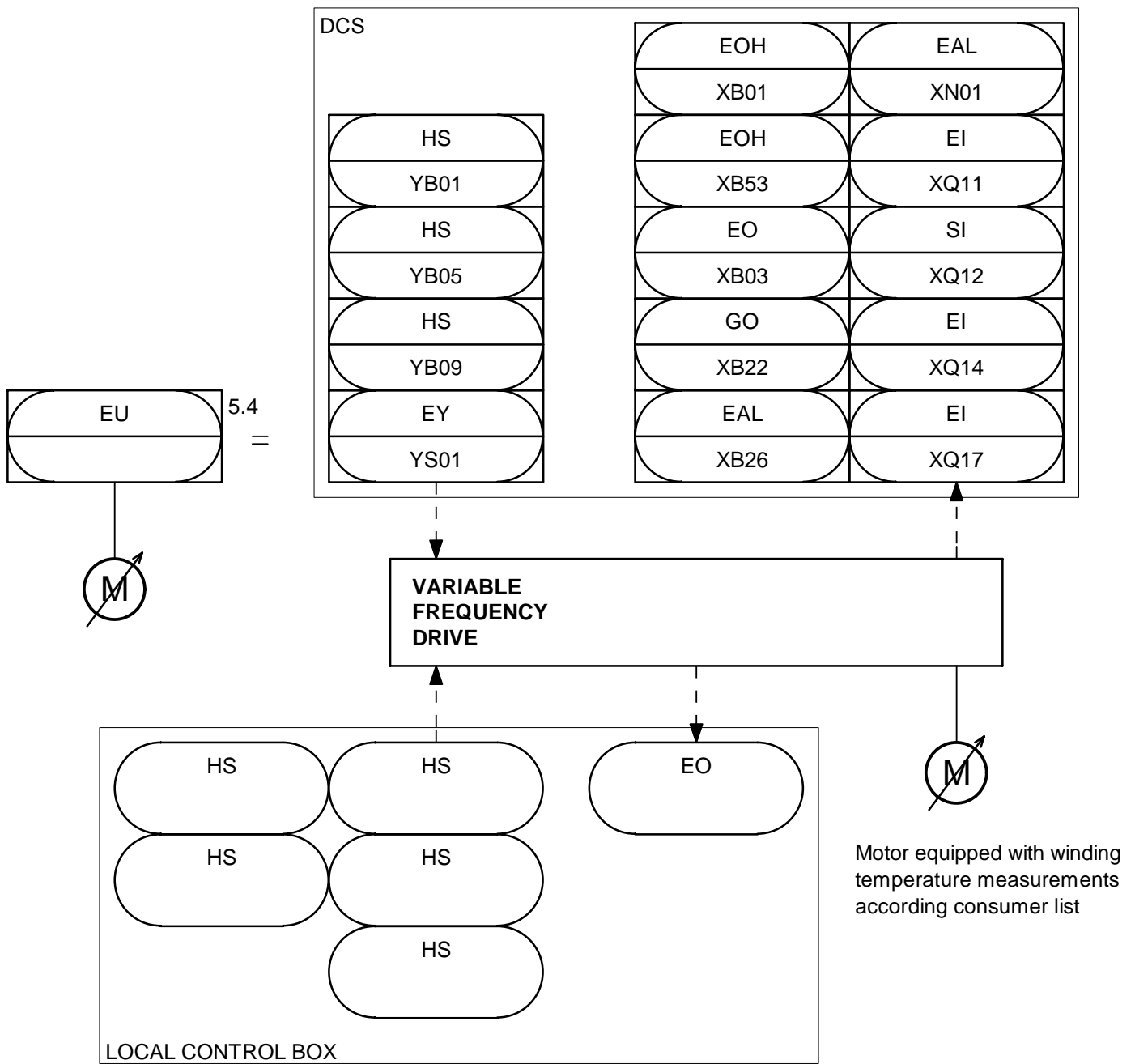
Motor, VFD controlled, forward, reverse (only locally), local control (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
					→				
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
WAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO	Dry Contact	SIS	HW	VFD		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO	Dry Contact	SIS	HW	VFD		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Fast Selector (1=Fast / 0=Slow)	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	Reset (Pulse)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Motor, VFD controlled, forward, reverse (only locally), local control (SIL) Typical EU 5.3.FS					
					Drawing No. EU 5.3.FS					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 5.4

Motor, VFD controlled, forward, reverse, local control





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	BUTM 25.11.2019	FILU 25.11.2019	STBE 25.11.2019	First Issue	Motor, VFD controlled, forward, reverse, local control Typical EU 5.4		
					Drawing No. EU 5.4		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

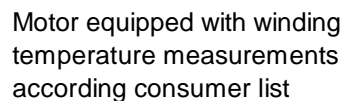
EU 5.4


Motor, VFD controlled, forward, reverse, local control

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	VFD		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Fast Selector (1=Fast / 0=Slow)	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	Reset (Pulse)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	BUTM 25.11.2019	FILU 25.11.2019	STBE 25.11.2019	First Issue	Motor, VFD controlled, forward, reverse, local control Typical EU 5.4				
					Drawing No. EU 5.4				
					Revision 0.0				Page 2 / 2

Motor, VFD controlled, forward, reverse, local control (E-Stop)





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	BUTM 25.11.2019	FILU 25.11.2019	STBE 25.11.2019	First Issue	Motor, VFD controlled, forward, reverse, local control (E-Stop) Typical EU 5.4.ES		
					Drawing No. EU 5.4.ES		
					Revision 0.0	 Hitachi Zosen INOVA	Page 1 / 2

Signal Table

EU 5.4.ES

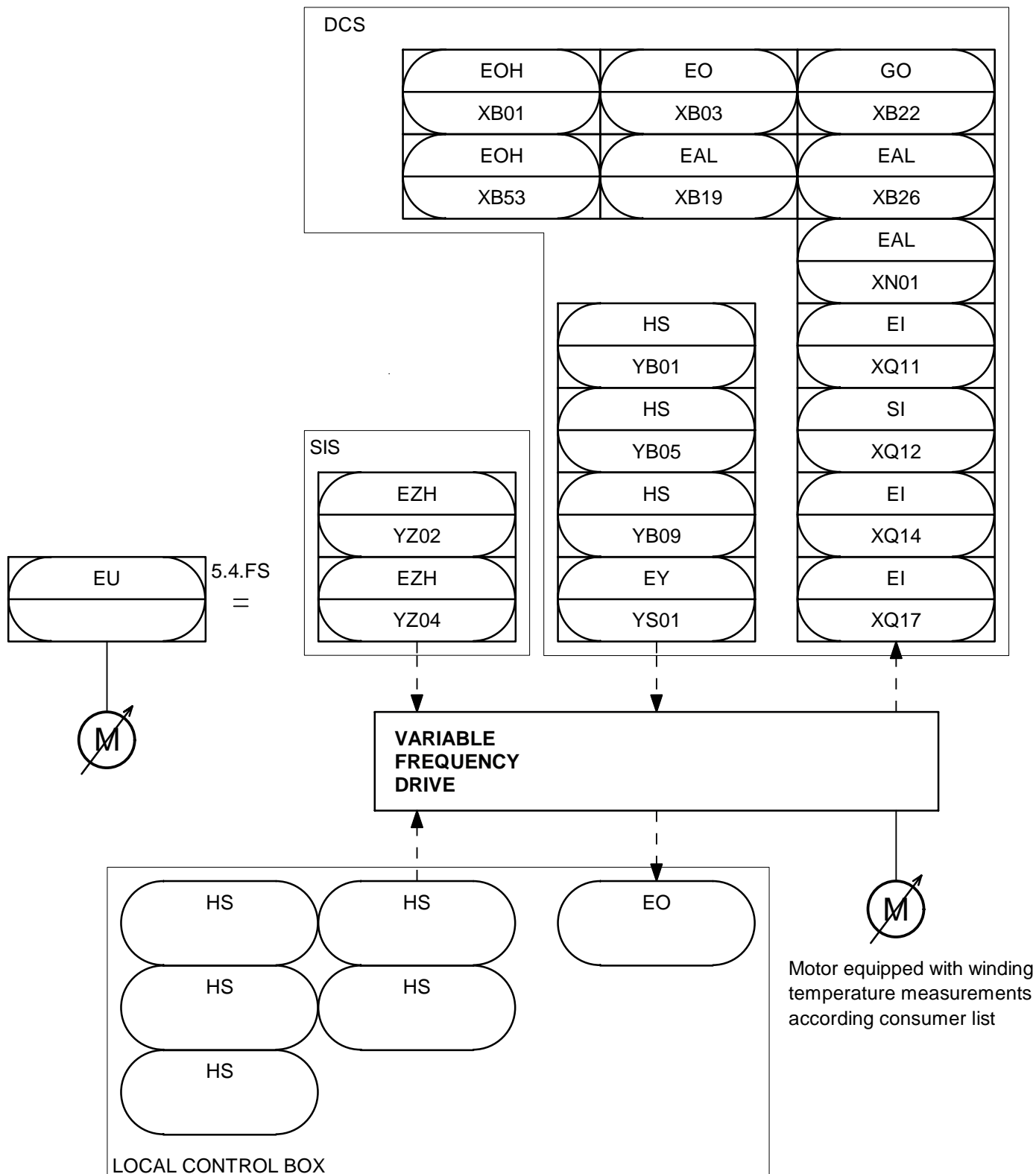
Motor, VFD controlled, forward, reverse, local control (E-Stop)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	VFD		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
EAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Fast Selector (1=Fast / 0=Slow)	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	Reset (Pulse)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 1)	--		Local	HW	MCC		
HS	-	E-Stop Button (Channel 2)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	BUTM 25.11.2019	FILU 25.11.2019	STBE 25.11.2019	First Issue	Motor, VFD controlled, forward, reverse, local control (E-Stop) Typical EU 5.4.ES				
					Drawing No. EU 5.4.ES				
					Revision 0.0				Page 2 / 2

EU 5.4.FS

Motor, VFD controlled, forward, reverse, local control (SIL)




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No.	Project Name:
0.0	BUTM 25.11.2019	FILU 25.11.2019	STBE 25.11.2019	First Issue	SO_HZI3	Base object
						Motor, VFD controlled, forward, reverse, local control (SIL)
						Typical EU 5.4.FS
					Drawing No.	EU 5.4.FS
					Revision 0.0	Hitachi Zosen INOVA
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Signal Table

EU 5.4.FS

Motor, VFD controlled, forward, reverse, local control (SIL)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command Forward	BO	Bus	DCS	BUS	VFD		
HS	YB05	Operation ON Command Reverse	BO	Bus	DCS	BUS	VFD		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	VFD		
EY	YS01	Set point	AO	Bus	DCS	BUS	VFD		
EOH	XB01	Operation ON Status Forward	BI	Bus	MCC	BUS	DCS		
EOH	XB53	Operation ON Status Reverse	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	VFD	BUS	DCS		
WAL	XB19	Emergency Stop	BI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	VFD	BUS	DCS		
EAL	XB26	VFD Fault	BI	Bus	VFD	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Motor Current	AI	Bus	VFD	BUS	DCS		
SI	XQ12	Actual Speed	AI	Bus	VFD	BUS	DCS		
EI	XQ14	Motor Power	AI	Bus	VFD	BUS	DCS		
EI	XQ17	Motor Frequency	AI	Bus	VFD	BUS	DCS		
EZH	YZ02	FAIL SAFE STOP Channel 1	BO	Dry Contact	SIS	HW	VFD		
EZH	YZ04	FAIL SAFE STOP Channel 2	BO	Dry Contact	SIS	HW	VFD		
EO	-	MCC Fault	--		MCC	HW	Local		
HS	-	Operation ON Command Forward	--		Local	HW	MCC		
HS	-	Operation ON Command Reverse	--		Local	HW	MCC		
HS	-	Fast Selector (1=Fast / 0=Slow)	--		Local	HW	MCC		
HS	-	Remote Selector (1=Remote / 0=Local)	--		Local	HW	MCC		
HS	-	Reset (Pulse)	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	BUTM 25.11.2019	FILU 25.11.2019	STBE 25.11.2019	First Issue	Motor, VFD controlled, forward, reverse, local control (SIL) Typical EU 5.4.FS				
					Drawing No. EU 5.4.FS				
					Revision 0.0		Hitachi Zosen INOVA		Page 2 / 2

EU 7.1

Electric Actuator, open - close

Operations / monitoring site:

Control Room

Standard functions processing location:

DCS

Operations functions DCS:

Auto / Manual

Open / Close

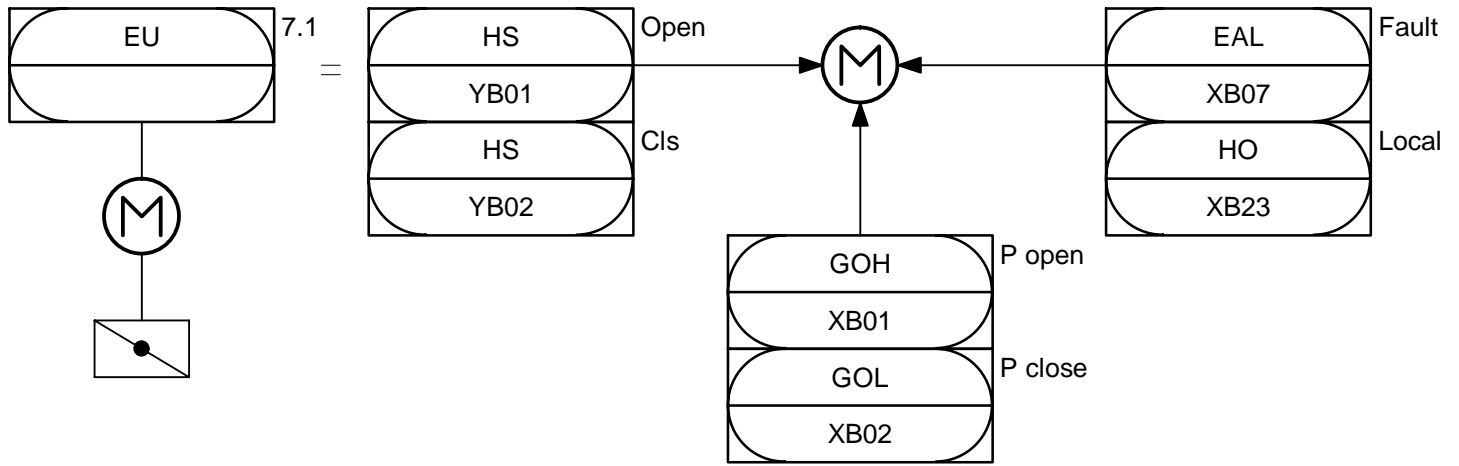
Power feed:

MCC

Local Operation:

Open / Close / Stop

Mechanical: Hand Crank



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
1.0	TRAN 02.07.2019	FILU 02.07.2019	STBE 02.07.2019	Update	Electric Actuator, open - close Typical EU 7.1		
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue			
					Drawing No. EU 7.1		
					Revision 1.0	Hitachi Zosen INOVA	Page 1 / 2

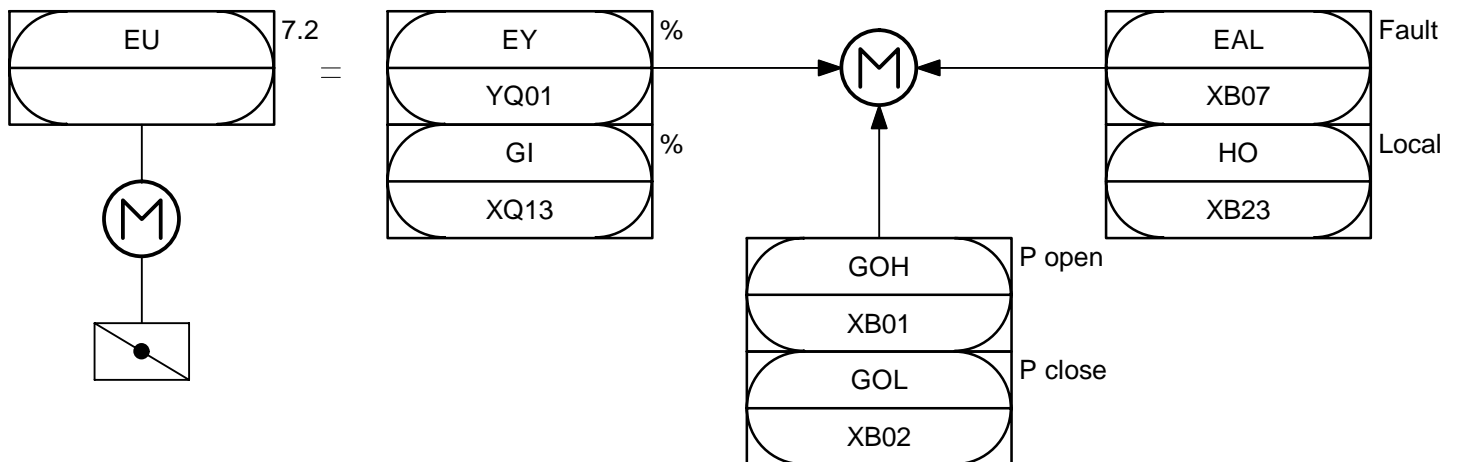
Signal Table										
EU 7.1										
Electric Actuator, open - close										
Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path					
					<div>→</div>					
HS	YB01	Open command	BO	SwOutp	DCS	BUS	RIO	HW	Local	
HS	YB02	Close command	BO	SwOutp	DCS	BUS	RIO	HW	Local	
GOH	XB01	Actuator position open	BI	Contact (NO)	Local	HW	RIO	BUS	DCS	
GOL	XB02	Actuator position close	BI	Contact (NO)	Local	HW	RIO	BUS	DCS	
EAL	XB07	Actuator fault	BI	Contact (NO)	Local	HW	RIO	BUS	DCS	
HO	XB23	Actuator local operation	BI	Contact (NO)	Local	HW	RIO	BUS	DCS	

EU 7.2

Electric Actuator, with positioner


Operations / monitoring site: Control Room
 Standard functions processing location: DCS
 Operations functions DCS: Preset Auto / Manual
 Setpoint
 Power feed: MCC
 Local Operation: Open / Close / Stop
 Mechanical: Hand crank

A separated positioner in the DCS is not necessary.



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
1.0	TRAN 01.07.2019	FILU 01.07.2019	STBE 01.07.2019	Update	Electric Actuator, with positioner Typical EU 7.2		
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue			
					Drawing No. EU 7.2		
					Revision 1.0	Hitachi Zosen INOVA	Page 1 / 2

Electric Actuator, with positioner

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
EY	YQ01	Set point position	AO	4-20 mA	DCS	BUS	RIO	HW	Local
GI	XQ13	Actuator position	AI	4-20 mA	Local	HW	RIO	BUS	DCS
GOH	XB01	Actuator position open	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
GOL	XB02	Actuator position close	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
EAL	XB07	Actuator fault	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
HO	XB23	Actuator local operation	BI	Contact (NO)	Local	HW	RIO	BUS	DCS

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
1.0	TRAN 01.07.2019	FILU 01.07.2019	STBE 01.07.2019	Update	Electric Actuator, with positioner		
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue			
					Typical EU 7.2		
					Drawing No. EU 7.2		
					Revision 1.0		Page 2 / 2

EU 7.3

Electric Actuator, open - close, with position feedback

Operations / monitoring site:

Control Room

Standard functions processing location:

DCS

Operations functions DCS:

Auto / Manual

Open / Close

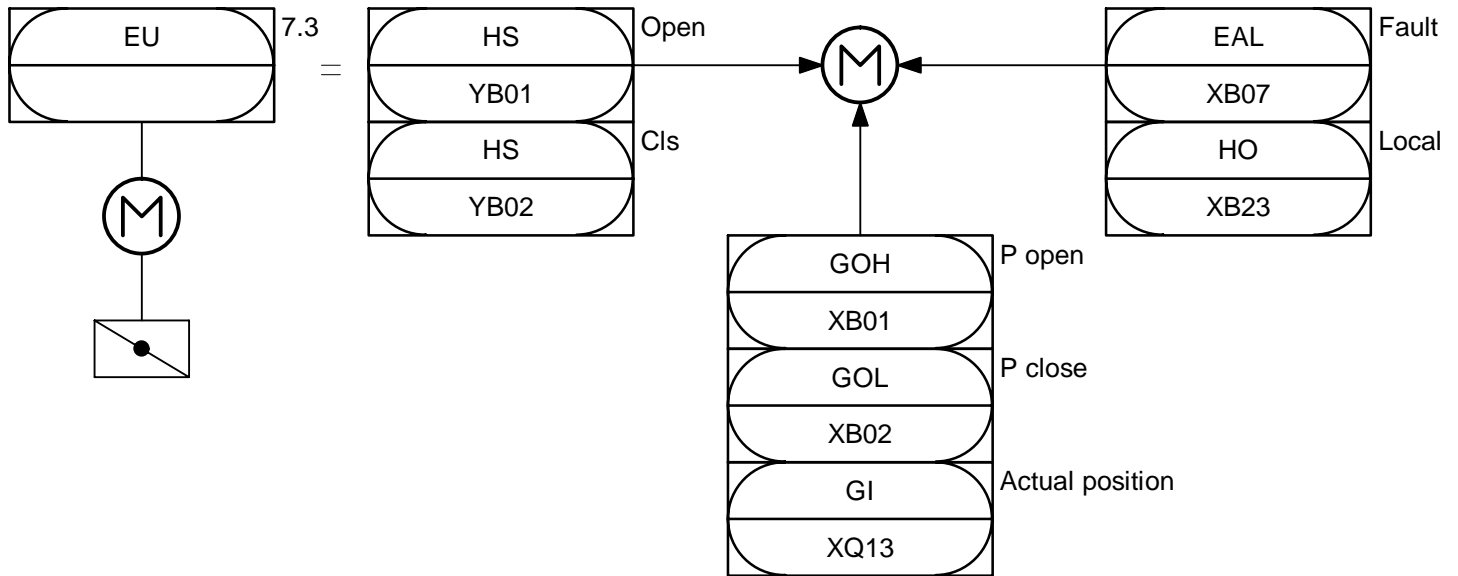
Power feed:

MCC

Local Operation:

Open / Close / Stop

Mechanical: Hand Crank





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	BUTM 28.11.2019	FILU 28.11.2019	STBE 28.11.2019	First Issue	Electric Actuator, open - close, with position feedback Typical EU 7.3		
					Drawing No. EU 7.3		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

EU 7.3

Electric Actuator, open - close, with position feedback

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Open command	BO	SwOutp	DCS	BUS	RIO	HW	Local
HS	YB02	Close command	BO	SwOutp	DCS	BUS	RIO	HW	Local
GOH	XB01	Actuator position open	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
GOL	XB02	Actuator position close	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
EAL	XB07	Actuator fault	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
HO	XB23	Actuator local operation	BI	Contact (NO)	Local	HW	RIO	BUS	DCS
GI	XQ13	Actuator actual position	AI	4-20 mA	Local	HW	RIO	BUS	DCS

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	BUTM 28.11.2019	FILU 28.11.2019	STBE 28.11.2019	First Issue	Electric Actuator, open - close, with position feedback Typical EU 7.3					
					Drawing No. EU 7.3					
					Revision 0.0					Page 2 / 2

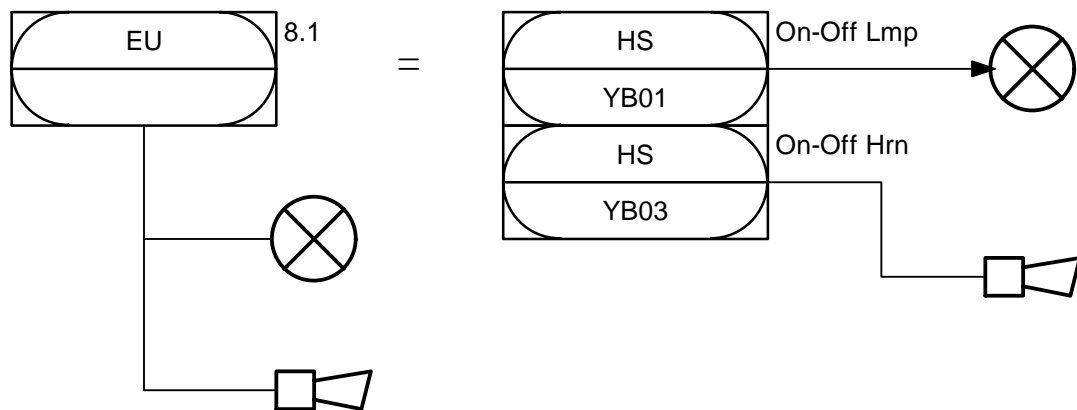
EU 8.1

Flashing Light & Horn


Operations / monitoring site:
Standard functions processing location:
Operations functions DCS:

Control Room
DCS
Preset Auto / Manual
ON / OFF
MCC
none

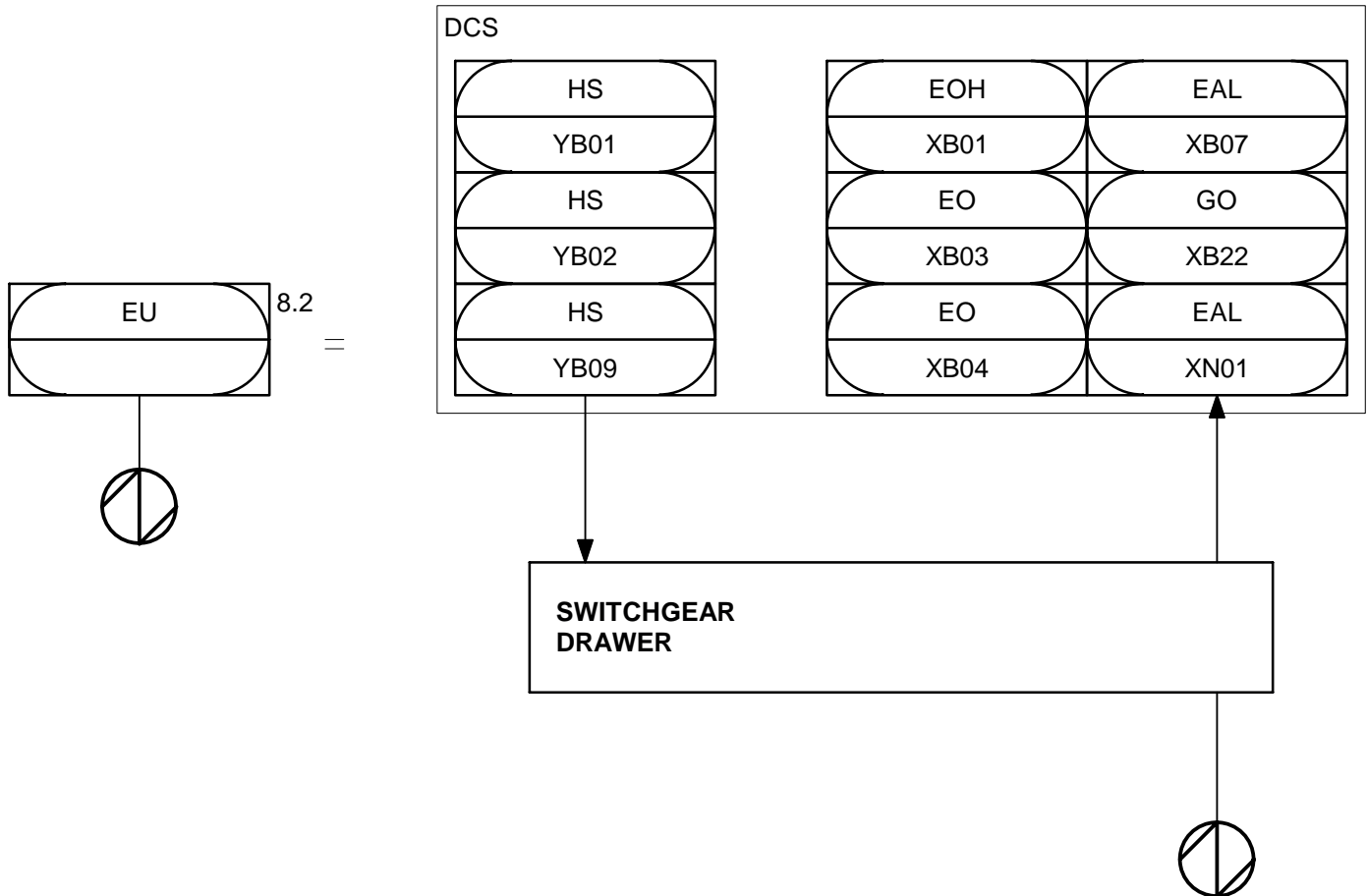
Power feed:
Local Operation:



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Flashing Light & Horn Typical EU 8.1		
					Drawing No. EU 8.1		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table										
EU 8.1										
Flashing Light & Horn										
Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path					
										
HS	YB01	On-Off Lamp	BO	SwOutp	DCS	BUS	RIO	HW	Local	
HS	YB03	On-Off Horn	BO	SwOutp	DCS	BUS	RIO	HW	Local	

EU 8.2 Switched Feeder





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
1.0	TRAN 02.07.2019	FILU 02.07.2019	STBE 02.07.2019	Update	Switched Feeder Typical EU 8.2		
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue			
					Drawing No. EU 8.2		
					Revision 1.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 8.2

Switched Feeder

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	DB		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	DB		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	DB		
EOH	XB01	Operation ON Status	BI	Bus	DB	BUS	DCS		
EO	XB03	Ready	BI	Bus	DB	BUS	DCS		
EO	XB04	Test Position	BI	Bus	DB	BUS	DCS		
EAL	XB07	Fault	BI	Bus	DB	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	DB	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	DB	BUS	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
1.0	TRAN 02.07.2019	FILU 02.07.2019	STBE 02.07.2019	Update	Switched Feeder Typical EU 8.2				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue					
					Drawing No. EU 8.2				
					Revision 1.0				Page 2 / 2

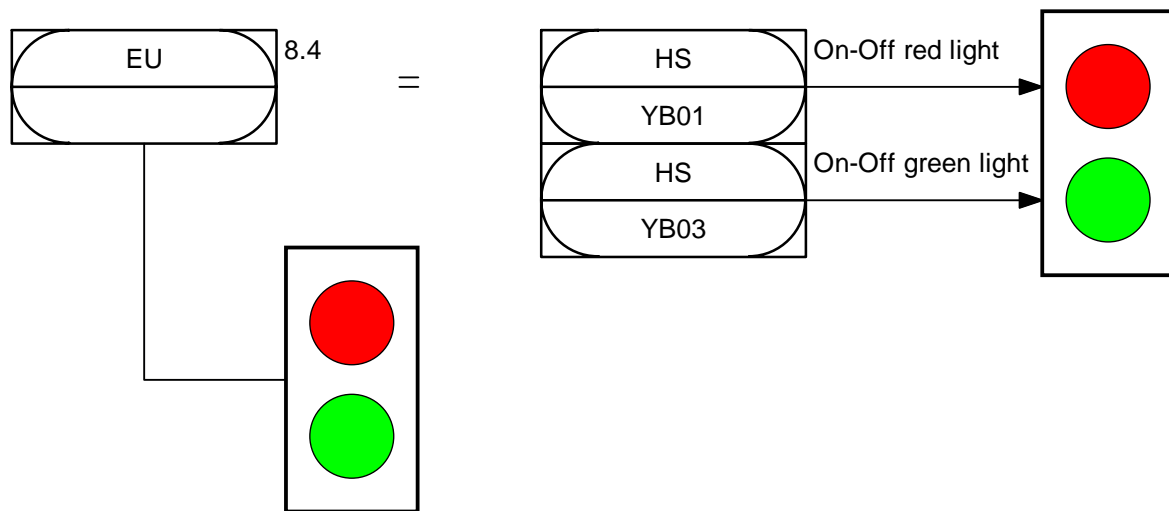
EU 8.4

Traffic Light 2 Lamps

Operations / monitoring site:
Standard functions processing location:
Operations functions DCS:

Control Room
DCS
Preset Auto / Manual
ON / OFF
RIO
none

Power feed:
Local Operation:




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Traffic Light 2 Lamps Typical EU 8.4		
					Drawing No. EU 8.4		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 8.4

Traffic Light 2 Lamps

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	On-Off red light	BO	SwOutp	DCS	BUS	RIO	HW	Local
HS	YB03	On-Off green light	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Traffic Light 2 Lamps					
					Typical EU 8.4					
					Drawing No. EU 8.4					
					Revision 0.0			<div><div></div>Hitachi Zosen INOVA</div>		Page 2 / 2

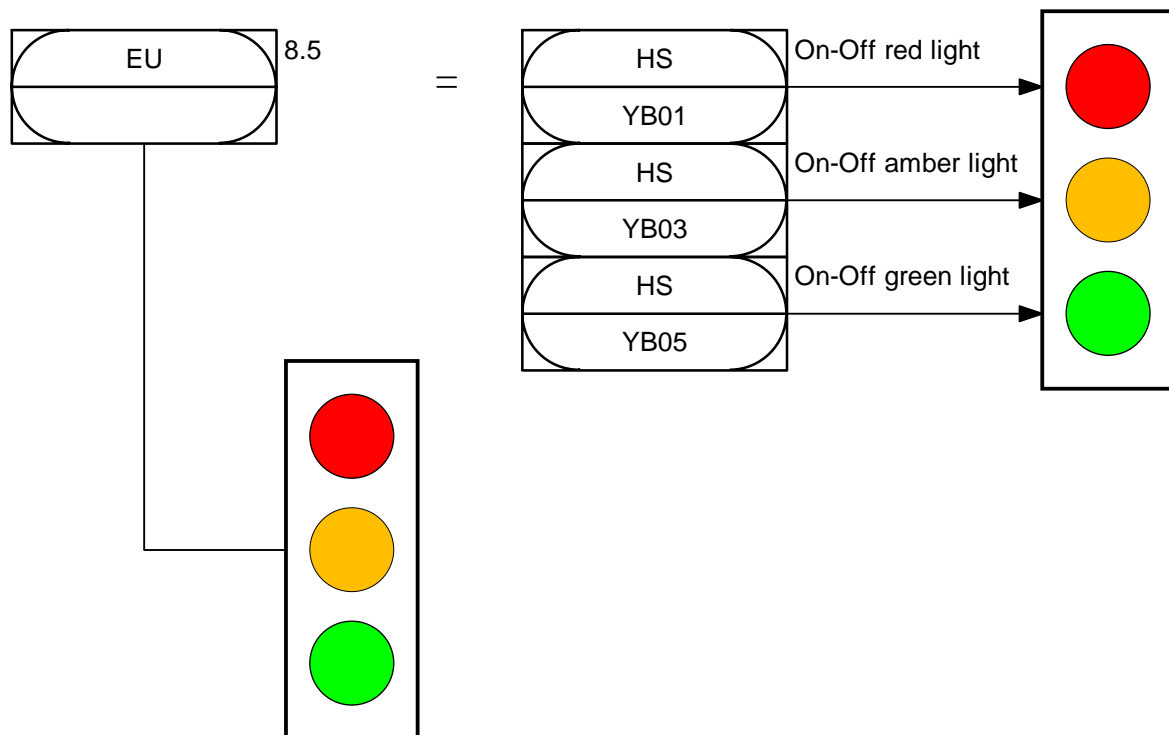
EU 8.5

Traffic Light 3 Lamps

Operations / monitoring site:
 Standard functions processing location:
 Operations functions DCS:

Control Room
 DCS
 Preset Auto / Manual
 ON / OFF
 RIO
 none

Power feed:
 Local Operation:





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Traffic Light 3 Lamps Typical EU 8.5		
					Drawing No. EU 8.5		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 8.5

Traffic Light 3 Lamps

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	On-Off red light	BO	SwOutp	DCS	BUS	RIO	HW	Local
HS	YB03	On-Off amber light	BO	SwOutp	DCS	BUS	RIO	HW	Local
HS	YB05	On-Off green light	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Traffic Light 3 Lamps		
					Typical EU 8.5		
					Drawing No. EU 8.5		
					Revision 0.0		
							Page 2 / 2

EU 9.3.A

Low voltage circuit breaker incomer

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

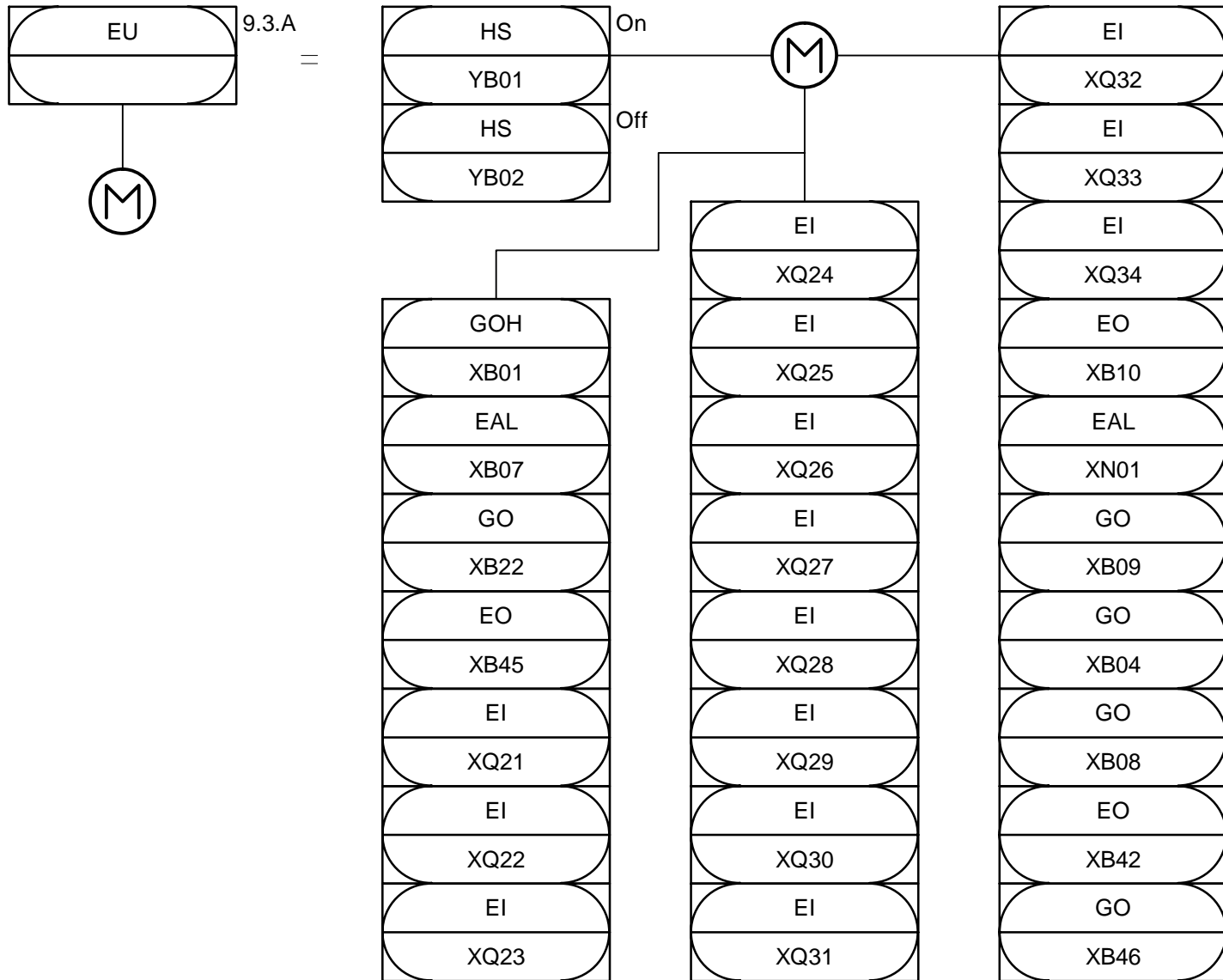
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer Typical EU 9.3.A		
					Drawing No. EU 9.3.A		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 9.3.A

Low voltage circuit breaker incomer

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close	BO	Bus	DCS	BUS	LVCB		
HS	YB02	CB open	BO	Bus	DCS	BUS	LVCB		
GOH	XB01	CB position close	BI	Bus	LVCB	BUS	DCS		
EAL	XB07	CB trip	BI	Bus	LVCB	BUS	DCS		
GO	XB22	CB remote control	BI	Bus	LVCB	BUS	DCS		
EO	XB45	CB control voltage	BI	Bus	LVCB	BUS	DCS		
EI	XQ21	Maximum Current	AI	Bus	LVCB	BUS	DCS		
EI	XQ22	Current L1	AI	Bus	LVCB	BUS	DCS		
EI	XQ23	Current L2	AI	Bus	LVCB	BUS	DCS		
EI	XQ24	Current L3	AI	Bus	LVCB	BUS	DCS		
EI	XQ25	N Current	AI	Bus	LVCB	BUS	DCS		
EI	XQ26	Ground Current	AI	Bus	LVCB	BUS	DCS		
EI	XQ27	V0 residual voltage	AI	Bus	LVCB	BUS	DCS		
EI	XQ28	Voltage L1/L2	AI	Bus	LVCB	BUS	DCS		
EI	XQ29	Voltage L2/L3	AI	Bus	LVCB	BUS	DCS		
EI	XQ30	Voltage L3/L1	AI	Bus	LVCB	BUS	DCS		
EI	XQ31	Total active power 1	AI	Bus	LVCB	BUS	DCS		
EI	XQ32	Total active power 2	AI	Bus	LVCB	BUS	DCS		
EI	XQ33	Total reactive power 1	AI	Bus	LVCB	BUS	DCS		
EI	XQ34	Total reactive power 2	AI	Bus	LVCB	BUS	DCS		
EO	XB10	CB ready for closing	BI	Bus	LVCB	BUS	DCS		
EAL	XN01	CB common alarm	BI	Bus	LVCB	BUS	DCS		
GO	XB09	CB disconnect position	BI	Bus	LVCB	BUS	DCS		
GO	XB04	CB test positiion	BI	Bus	LVCB	BUS	DCS		
GO	XB08	CB operating position	BI	Bus	LVCB	BUS	DCS		
EO	XB42	CB undervoltage	BI	Bus	LVCB	BUS	DCS		
GO	XB46	CB surge protector	BI	Bus	LVCB	BUS	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer				
					Typical EU 9.3.A				
					Drawing No. EU 9.3.A				
					Revision 0.0 <div><div></div>Hitachi Zosen INOVA</div>				
					Page 2 / 2				

EU 9.3.B

Low voltage circuit breaker coupler

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

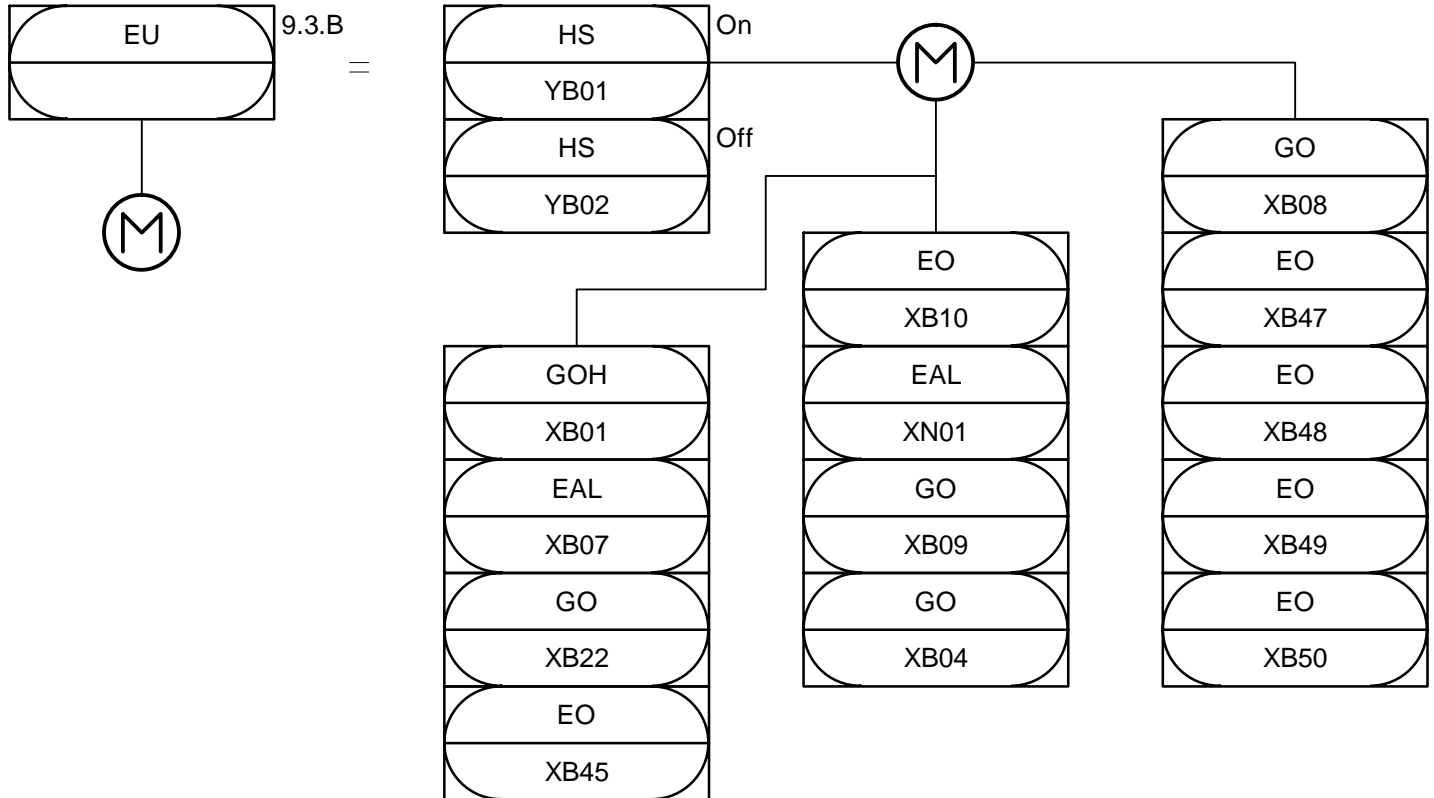
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker coupler Typical EU 9.3.B		
					Drawing No. EU 9.3.B		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

EU 9.3.B

Low voltage circuit breaker coupler

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close	BO	Bus	DCS	BUS	LVCB		
HS	YB02	CB open	BO	Bus	DCS	BUS	LVCB		
GOH	XB01	CB position close	BI	Bus	LVCB	BUS	DCS		
EAL	XB07	CB trip	BI	Bus	LVCB	BUS	DCS		
GO	XB22	CB remote control	BI	Bus	LVCB	BUS	DCS		
EO	XB45	CB control voltage	BI	Bus	LVCB	BUS	DCS		
EO	XB10	CB ready for closing	BI	Bus	LVCB	BUS	DCS		
EAL	XN01	CB common alarm	BI	Bus	LVCB	BUS	DCS		
GO	XB09	CB disconnect position	BI	Bus	LVCB	BUS	DCS		
GO	XB04	CB test position	BI	Bus	LVCB	BUS	DCS		
GO	XB08	CB operating position	BI	Bus	LVCB	BUS	DCS		
EO	XB47	Preselection incomer 1	BI	Bus	LVCB	BUS	DCS		
EO	XB48	Preselection incomer 2	BI	Bus	LVCB	BUS	DCS		
EO	XB49	Preselection coupler	BI	Bus	LVCB	BUS	DCS		
EO	XB50	Switch back/over	BI	Bus	LVCB	BUS	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker coupler					
					Typical EU 9.3.B					
					Drawing No. EU 9.3.B					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 9.3.C

Low voltage circuit breaker incomer process

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

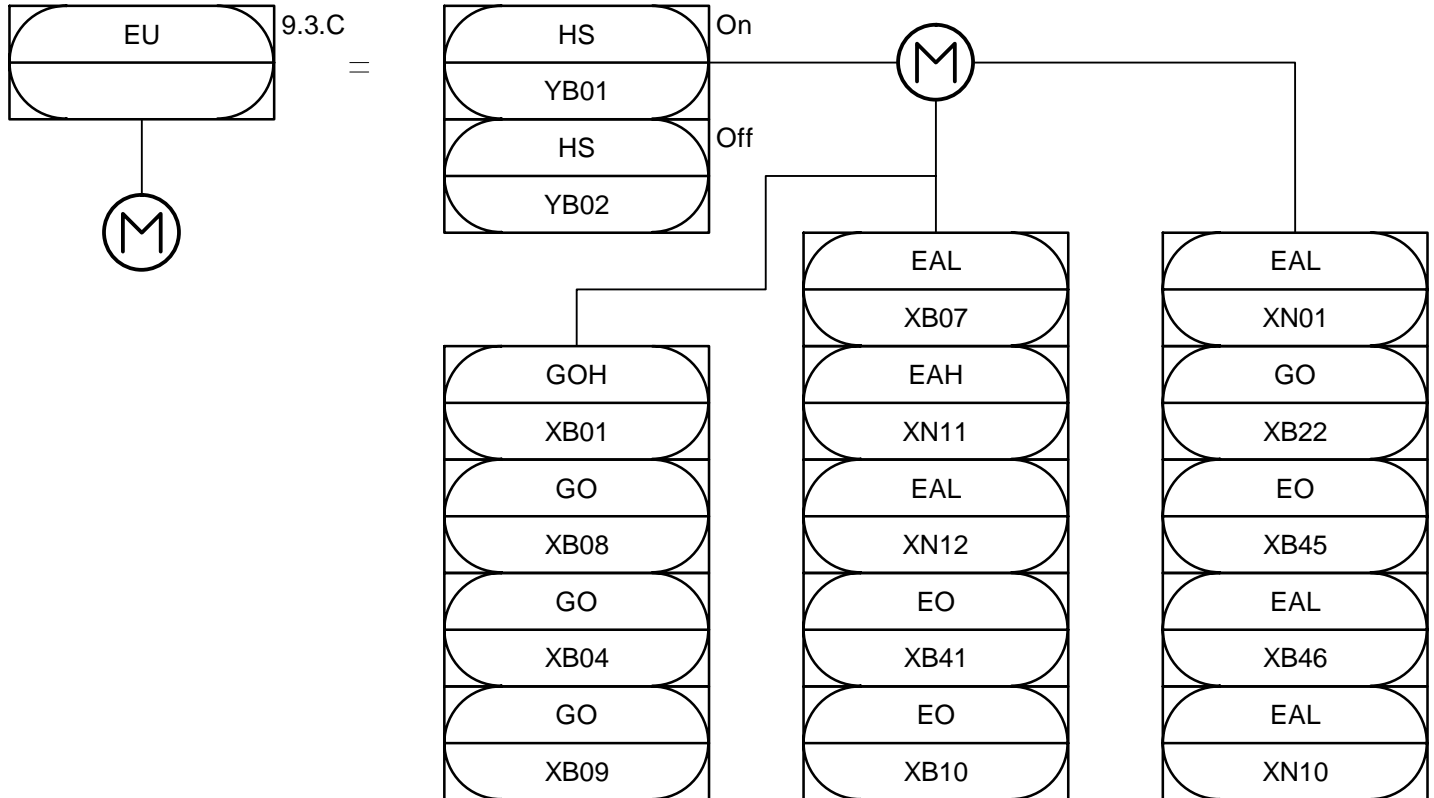
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No.	Project Name:
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	SO_HZI3	Base object
					Low voltage circuit breaker incomer process	
					Typical EU 9.3.C	
					Drawing No.	EU 9.3.C
					Revision 0.0	Hitachi Zosen INOVA
					Page 1 / 2	

Signal Table

EU 9.3.C

Low voltage circuit breaker incomer process

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB08	CB service position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB04	CB test position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB09	CB disconnect position	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		
EAH	XN11	Incoming overvoltage	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN12	Incoming undervoltage	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB41	Interlock release	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB10	CB ready for close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN01	CB common alarm	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB22	CB remote control	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB45	Control voltage on	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB46	Fault surge arrester	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN10	Bus bar undervoltage	BI	Contact (NC)	LVCB	HW	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer process				
					Typical EU 9.3.C				
					Drawing No. EU 9.3.C				
					Revision 0.0 <div><div></div>Hitachi Zosen INOVA</div>				
					Page 2 / 2				

EU 9.3.D

Low voltage circuit breaker incomer common

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

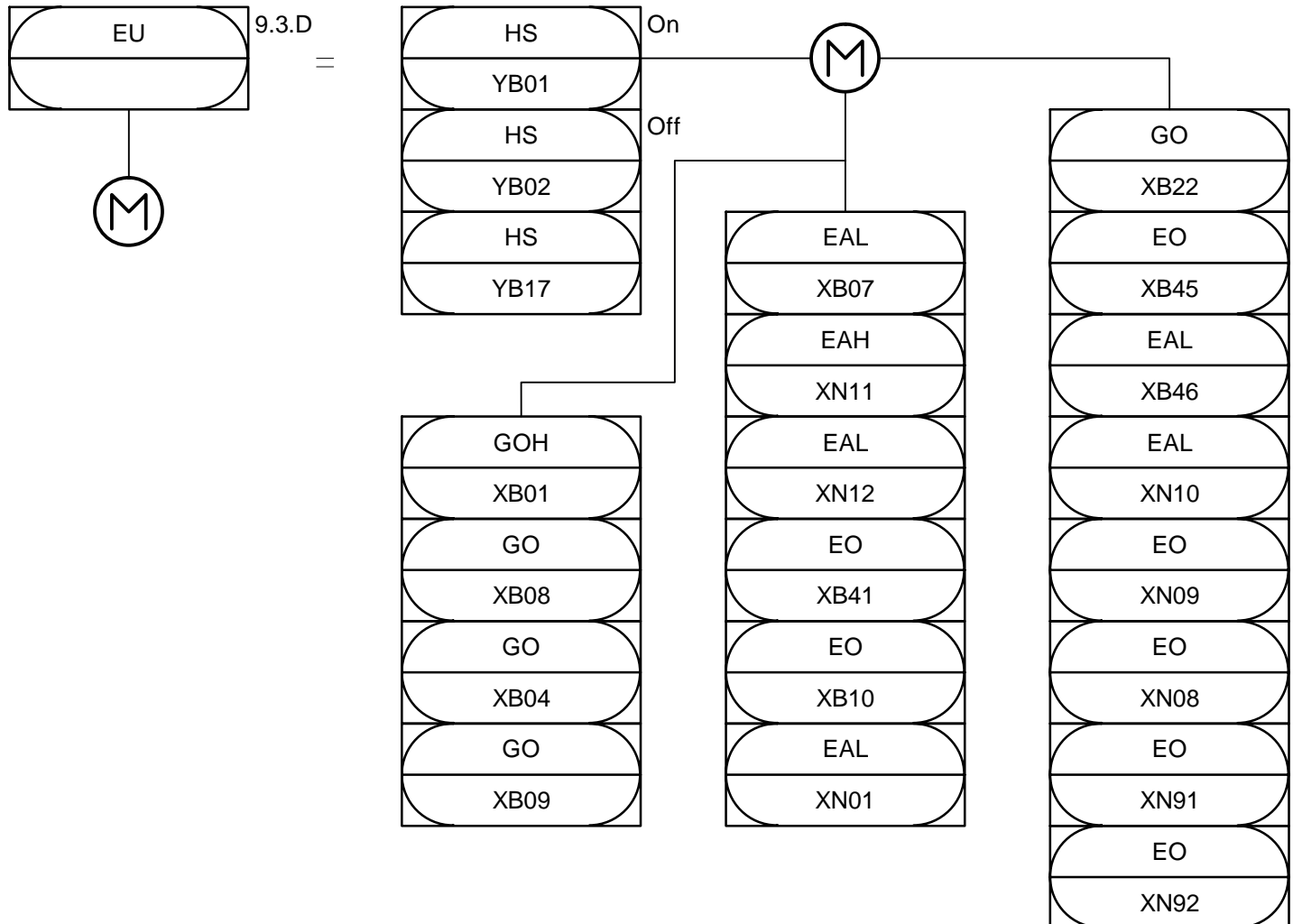
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer common Typical EU 9.3.D		
					Drawing No. EU 9.3.D		
					Revision 0.0	Hitachi Zosen INOVA	Page 1 / 2

Signal Table

EU 9.3.D

Low voltage circuit breaker incomer common

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
HS	YB17	Remote Interlock Override	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB08	CB service position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB04	CB test position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB09	CB disconnect position	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		
EAH	XN11	Incoming overvoltage	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN12	Incoming undervoltage	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB41	Interlock release	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB10	CB ready for close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN01	CB common alarm	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB22	CB remote control	BI	Contact (NC)	LVCB	HW	DCS		
EO	XN09	Incoming voltage available	BI	Contact (NC)	LVCB	HW	DCS		
EO	XN08	Bus bar voltage available	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN10	Bus bar undervoltage	BI	Contact (NC)	LVCB	HW	DCS		
EO	XN91	Incoming voltage measure circuit OK	BI	Contact (NC)	LVCB	HW	DCS		
EO	XN92	Bus bar voltage measure circuit OK	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB45	Control voltage on	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB46	Fault surge arrester	BI	Contact (NC)	LVCB	HW	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer common Typical EU 9.3.D				
					Drawing No. EU 9.3.D				
					Revision 0.0				
					Hitachi Zosen INOVA			Page 2 / 2	

EU 9.3.E

Low voltage circuit breaker coupler

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

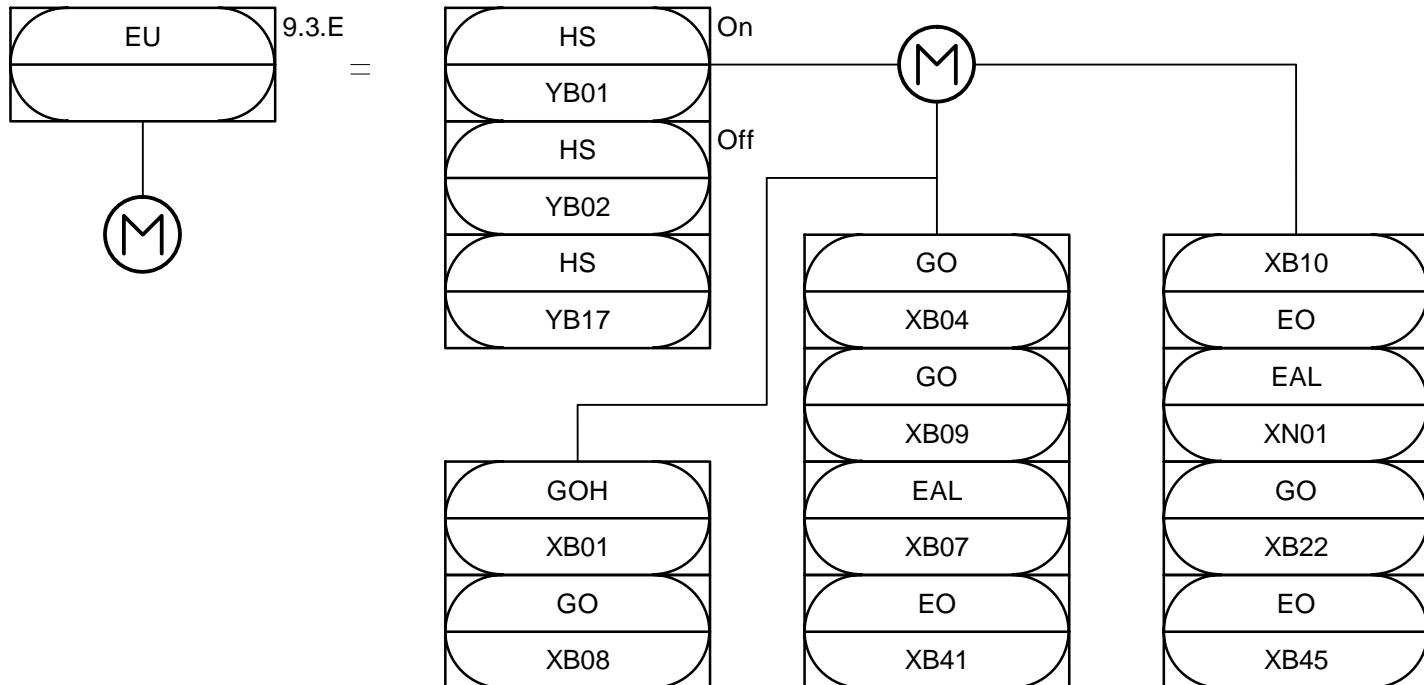
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker coupler Typical EU 9.3.E		
					Drawing No. EU 9.3.E		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

EU 9.3.E

Low voltage circuit breaker coupler

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
HS	YB17	Remote Interlock Override	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB08	CB service position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB04	CB test position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB09	CB disconnect position	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB41	Interlock release	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB10	CB ready for close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN01	CB common alarm	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB22	CB remote control	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB45	Control voltage on	BI	Contact (NC)	LVCB	HW	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker coupler				
					Typical EU 9.3.E				
					Drawing No. EU 9.3.E				
					Revision 0.0				
					Hitachi Zosen INOVA				Page 2 / 2

EU 9.3.F

Low voltage circuit breaker incomer EDG

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

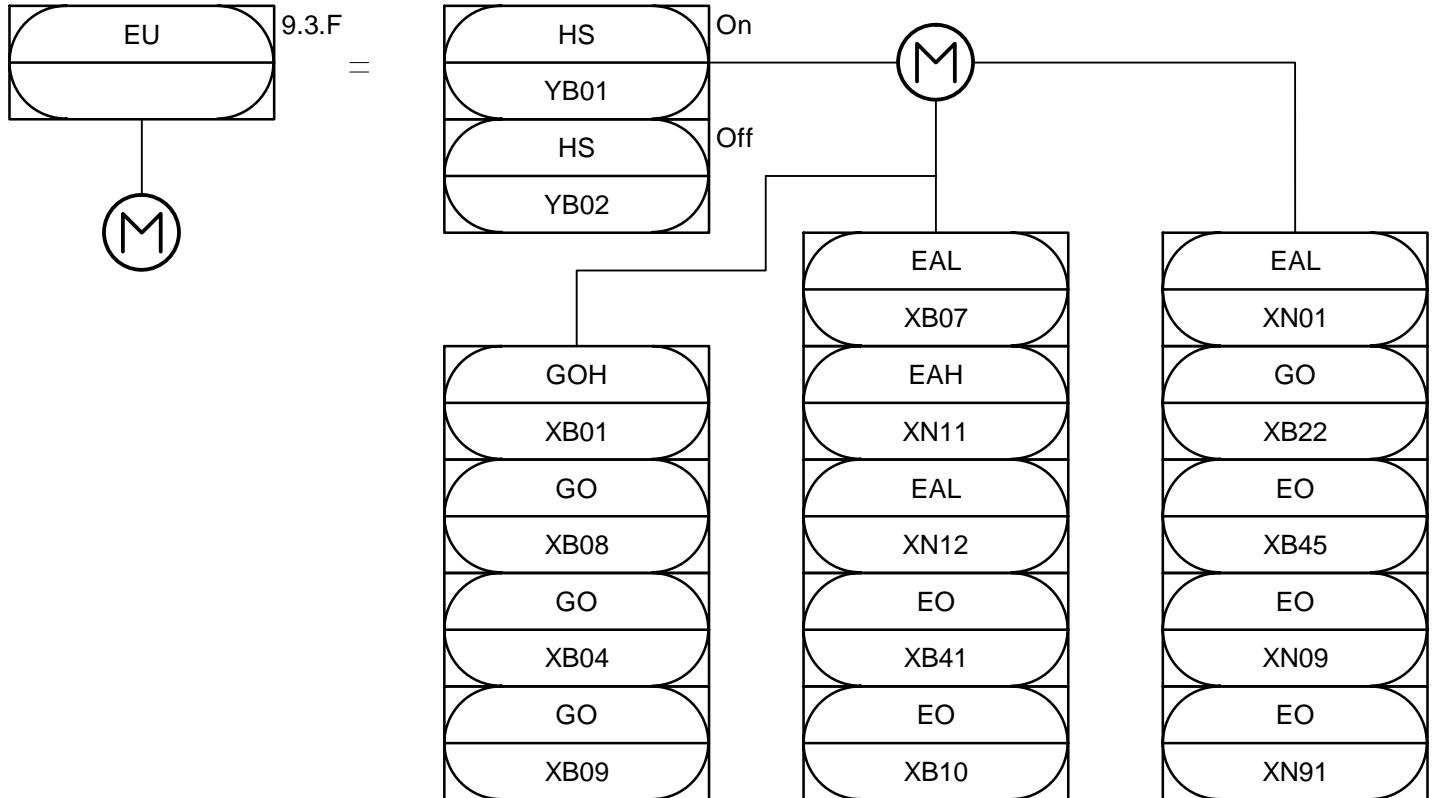
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer EDG Typical EU 9.3.F		
					Drawing No. EU 9.3.F		
					Revision 0.0	Hitachi Zosen INOVA	
						Page 1 / 2	

Signal Table

EU 9.3.F

Low voltage circuit breaker incomer EDG

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB08	CB service position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB04	CB test position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB09	CB disconnect position	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		
EAH	XN11	Incoming overvoltage	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN12	Incoming undervoltage	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB41	Interlock release	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB10	CB ready for close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN01	CB common alarm	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB22	CB remote control	BI	Contact (NC)	LVCB	HW	DCS		
EO	XN09	Incoming voltage available	BI	Contact (NC)	LVCB	HW	DCS		
EO	XN91	Incoming voltage measure circuit OK	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB45	Control voltage on	BI	Contact (NC)	LVCB	HW	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer EDG				
					Typical EU 9.3.F				
					Drawing No. EU 9.3.F				
					Revision 0.0 <div><div></div>Hitachi Zosen INOVA</div>				
					Page 2 / 2				

EU 9.3.G

Low voltage circuit breaker feeder 1

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

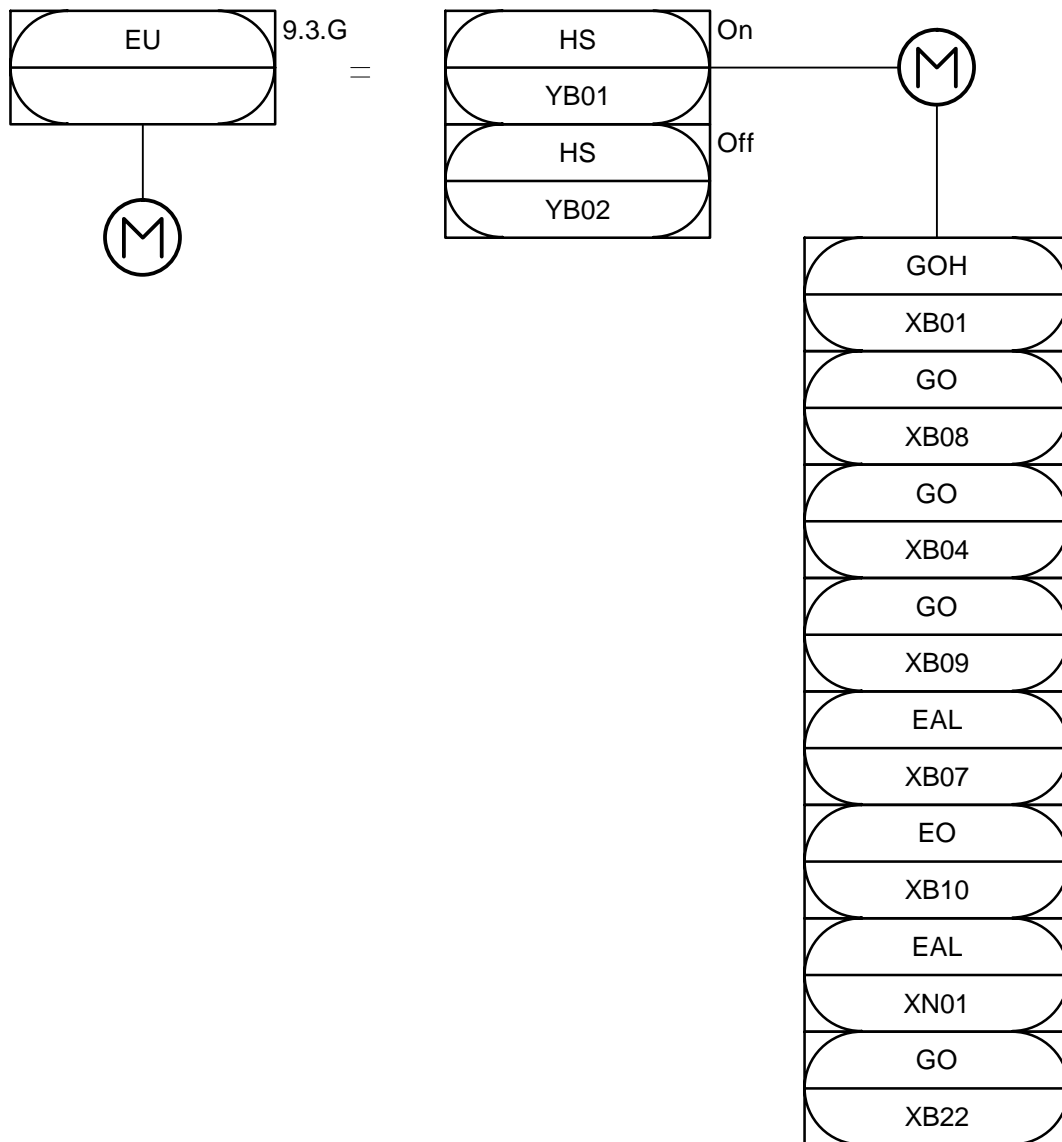
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker feeder 1 Typical EU 9.3.G		
					Drawing No.	EU 9.3.G	
					Revision 0.0	Hitachi Zosen INOVA	Page 1 / 2

Signal Table

EU 9.3.G

Low voltage circuit breaker feeder 1

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB08	CB service position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB04	CB test position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB09	CB disconnect position	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB10	CB ready for close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN01	CB common alarm	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB22	CB remote control	BI	Contact (NC)	LVCB	HW	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker feeder 1				
					Typical EU 9.3.G				
					Drawing No. EU 9.3.G				
					Revision 0.0				Page 2 / 2

EU 9.3.H

Low voltage circuit breaker feeder 2

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

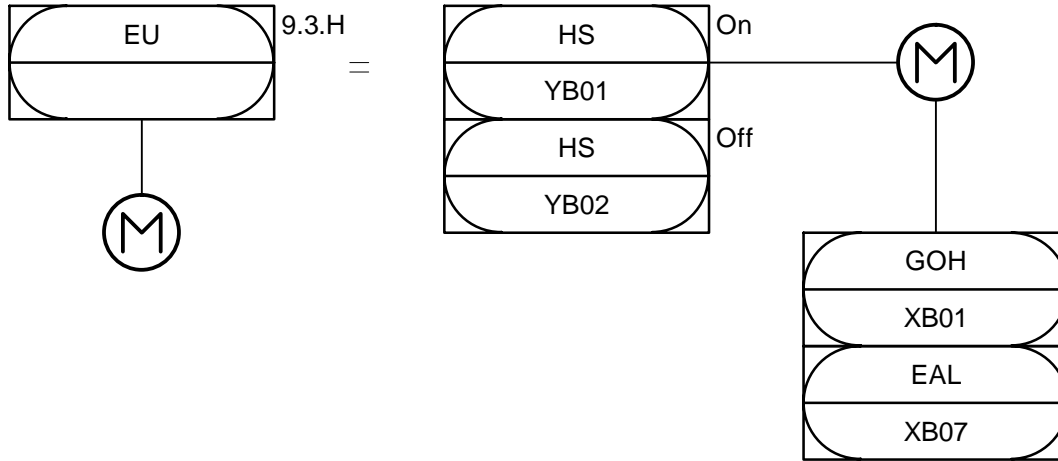
Local Operation:

Control Room


DCS

Open / Close

Local operation at the circuit breaker



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker feeder 2		
					Typical EU 9.3.H		
					Drawing No. EU 9.3.H		
					Revision 0.0		
					Hitachi Zosen INOVA		Page 1 / 2

Signal Table									
EU 9.3.H									
Low voltage circuit breaker feeder 2									
Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		

EU 9.3.J

Low voltage circuit breaker incomer building

Operations / monitoring site:

Standard functions processing location:

Operations functions DCS:

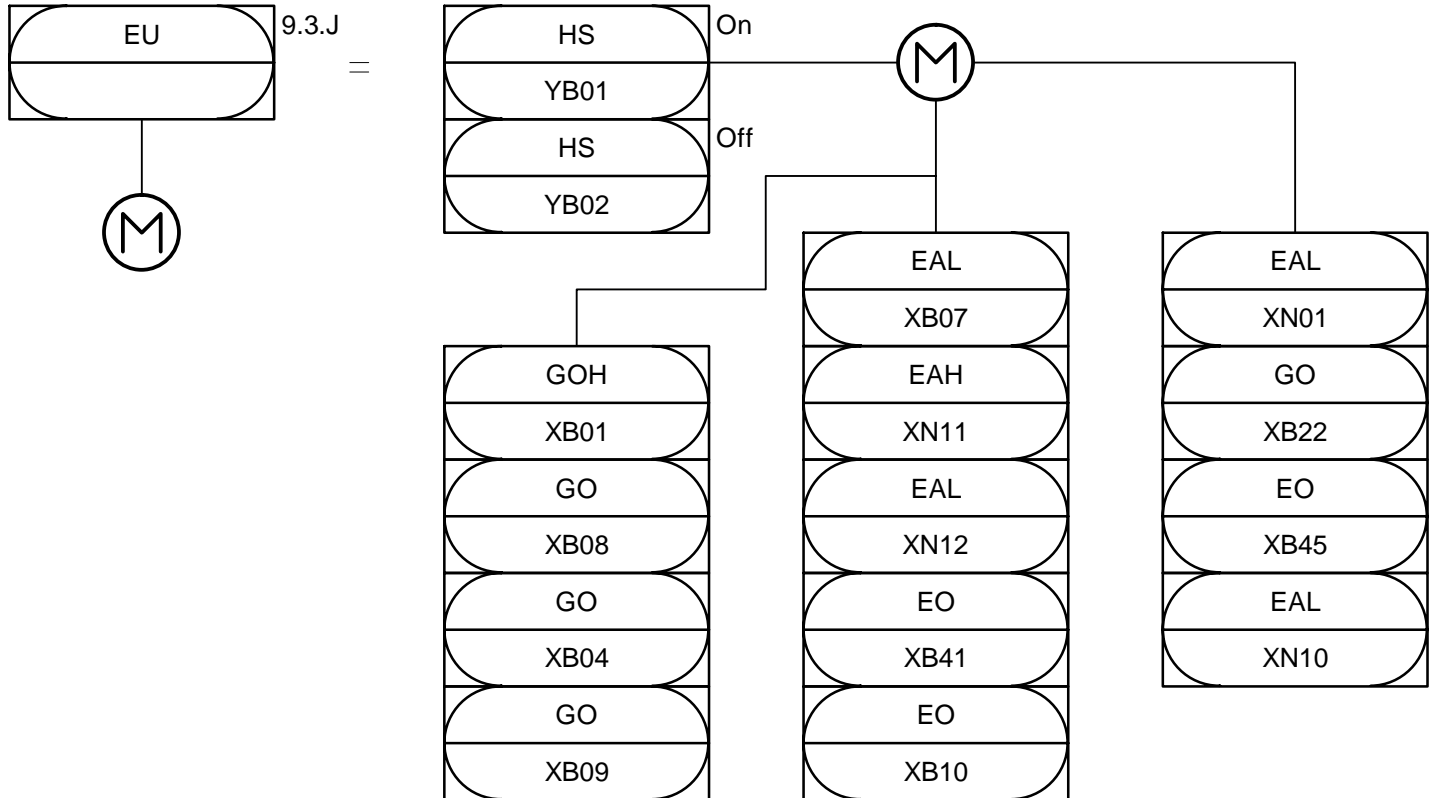
Local Operation:

Control Room

DCS

Open / Close

Local operation at the circuit breaker



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer building Typical EU 9.3.J		
					Drawing No. EU 9.3.J		
					Revision 0.0	Hitachi Zosen INOVA	
						Page 1 / 2	

Signal Table

EU 9.3.J

Low voltage circuit breaker incomer building

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	CB close command	BO	SwOutp	DCS	HW	LVCB		
HS	YB02	CB open command	BO	SwOutp	DCS	HW	LVCB		
GOH	XB01	CB position close	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB08	CB service position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB04	CB test position	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB09	CB disconnect position	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XB07	CB tripped	BI	Contact (NC)	LVCB	HW	DCS		
EAH	XN11	Incoming overvoltage	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN12	Incoming undervoltage	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB41	Interlock release	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB10	CB ready for close	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN01	CB common alarm	BI	Contact (NC)	LVCB	HW	DCS		
GO	XB22	CB remote control	BI	Contact (NC)	LVCB	HW	DCS		
EO	XB45	Control voltage on	BI	Contact (NC)	LVCB	HW	DCS		
EAL	XN10	Bus bar undervoltage	BI	Contact (NC)	LVCB	HW	DCS		

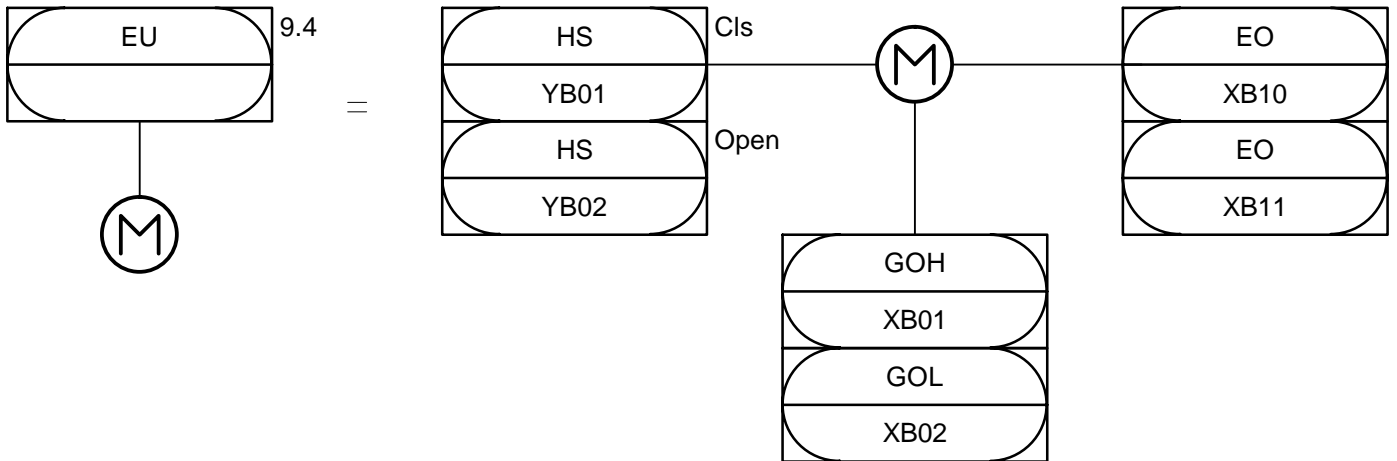
Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Low voltage circuit breaker incomer building Typical EU 9.3.J					
					Drawing No. EU 9.3.J					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

EU 9.4

Earthing Switch

Operations / monitoring site:
 Standard functions processing location:
 Operations functions DCS:
 Local Operation:

Control Room
 DCS
 Open / Close
 Local operation at the circuit breaker





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Earthing Switch Typical EU 9.4		
					Drawing No. EU 9.4		
					Revision 0.0	Hitachi Zosen INOVA	
							Page 1 / 2

Signal Table

EU 9.4

Earthing Switch

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Earthing switch close	BO	Bus	DCS	BUS	ES		
HS	YB02	Earthing switch open	BO	Bus	DCS	BUS	ES		
GOH	XB01	Earthing switch position closed	BI	Bus	ES	BUS	DCS		
GOL	XB02	Earthing switch position opened	BI	Bus	ES	BUS	DCS		
EAL	XB10	Enable closed	BI	Bus	ES	BUS	DCS		
GO	XB11	Enable opened	BI	Bus	ES	BUS	DCS		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Earthing Switch					
					Typical EU 9.4					
					Drawing No. EU 9.4					
					Revision 0.0					Page 2 / 2

Project: Rookery

DocNo 50077485_2.0
:

4.2 UV – Functions

Typical	Description
UV 1.1	Pneumatic actuator, open/close FAIL CLOSED
UV 1.1.FS	Pneumatic actuator, open/close FAILSAFE CLOSED (SIL2)
UV 1.1.3.FS	Pneumatic actuator, open/close FAILSAFE CLOSED (SIL2)
UV 1.2	Pneumatic actuator, open/close FAIL OPEN
UV 1.3	Pneumatic actuator, open/close
UV 2.1	Pneumatic actuator, open/close FAIL CLOSED
UV 2.2	Pneumatic actuator, open/close FAIL OPEN
UV 2.2_BUS	Pneumatic actuator, open/close FAIL OPEN (Bus communication)
UV 3.1	Pneumatic / hydraulic actuator, open/close
UV 4.2	Actuator, control function
UV 4.4	Electro Pneumatic Actuator, with Positioner, with Shut-off Valve
UV 4.4.FS	Electro Pneumatic Actuator, with Positioner FAILSAFE CLOSED
UV 4.5	Actuator, control function QUICK OPEN
UV 4.5.3.FS	Electro Pneumatic Actuator, w. Positioner, QUICK OPEN and FAILSAFE CLOSE
UV 5.1	Solenoid valve, open/close function FAIL CLOSED
UV 5.2	Solenoid valve, open/close FAIL OPEN

UV 1.1

Pneumatic actuator, open/close, FAIL CLOSED

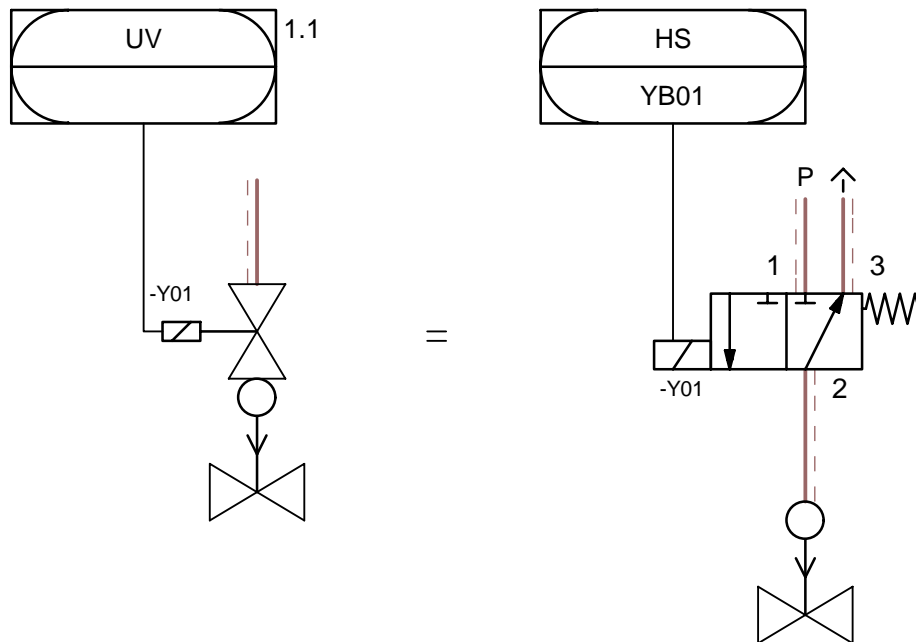
pneumatic actuator, open / close
main valve de-pressurized CLOSED
main valve de-energized CLOSED
(unilaterally pressurized with spring return)

3/2 way pilot valve
(with spring return)

Signal Processing Location:
Operation Modes:

DCS
Auto / Manual
Open / Close
none

Local Operation:



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAIL CLOSED Typical UV 1.1		
					Drawing No. UV 1.1		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAIL CLOSED Typical UV 1.1		
					Drawing No. UV 1.1		
					Revision 0.0		Hitachi Zosen INOVA
							Page 2 / 2

UV 1.1.FS

Pneumatic actuator, open/close, FAILSAFE CLOSED

pneumatic actuator, open / close
main valve de-pressurized CLOSED
main valve de-energized CLOSED
(unilaterally pressurized with spring return)

3/2 way pilot valve
(with spring return)

Signal Processing Location:

SIS

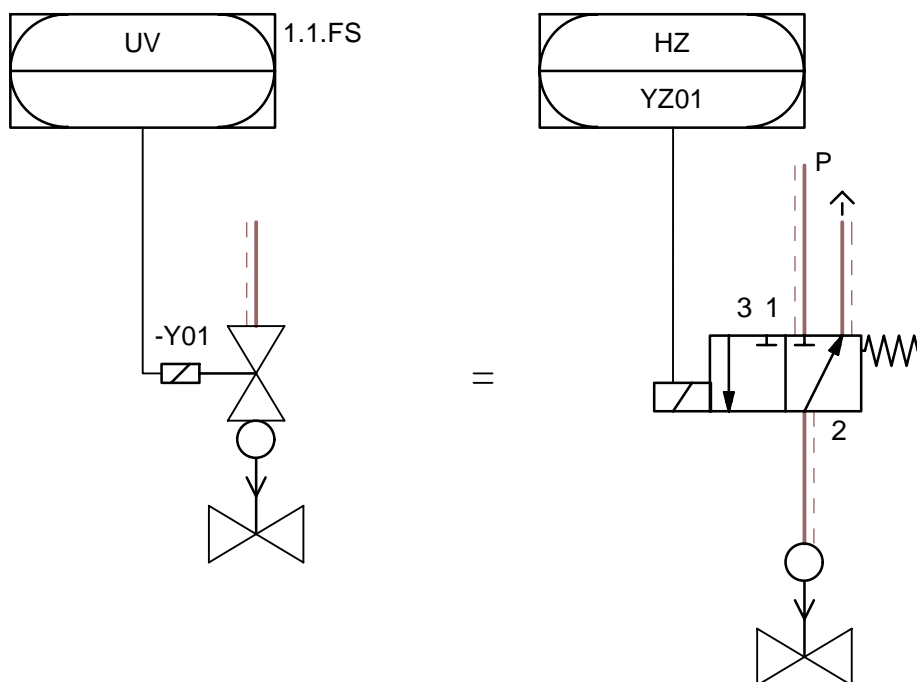
Operation Modes:

Auto / Manual

Open / Close

Local Operation:


none



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAILSAFE CLOSED Typical UV 1.1.FS		
					Drawing No. UV 1.1.FS		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

UV 1.1.FS

Pneumatic actuator, open/close, FAILSAFE CLOSED

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAILSAFE CLOSED Typical UV 1.1.FS		
					Drawing No. UV 1.1.FS		
					Revision 0.0		Page 2 / 2

UV 1.1.3.FS

Pneumatic actuator, open/close FAILSAFE CLOSED

pneumatic actuator, open / close
main valve de-pressurized CLOSED
main valve de-energized CLOSED
(unilaterally pressurized with spring return)

three 3/2 way pilot valves
(with spring return)

Signal Processing Location:

SIS

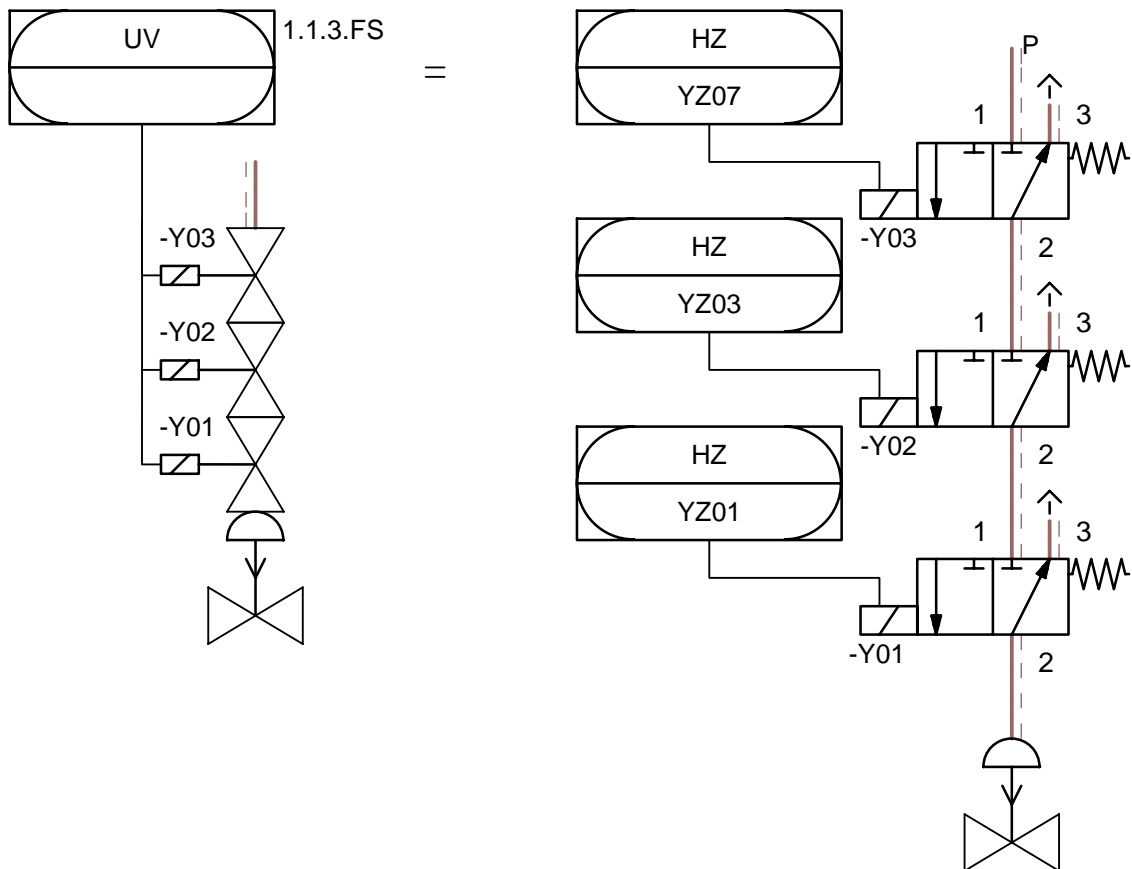
Operation Modes:

Auto / Manual

Open / Close

Local operation:

none



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close FAILSAFE CLOSED Typical UV 1.1.3.FS		
					Drawing No. UV 1.1.3.FS		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

UV 1.1.3.FS

Pneumatic actuator, open/close FAILSAFE CLOSED

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
HZ	YZ01	FAIL SAFE START/OPEN Channel 1	BO		SIS	HW	Local		
HZ	YZ03	FAIL SAFE START/OPEN Channel 2	BO		SIS	HW	Local		
HZ	YZ07	FAIL SAFE START/OPEN Channel 3	BO		SIS	HW	Local		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close FAILSAFE CLOSED Typical UV 1.1.3.FS					
					Drawing No. UV 1.1.3.FS					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

UV 1.2

Pneumatic actuator, open/close, FAIL OPEN

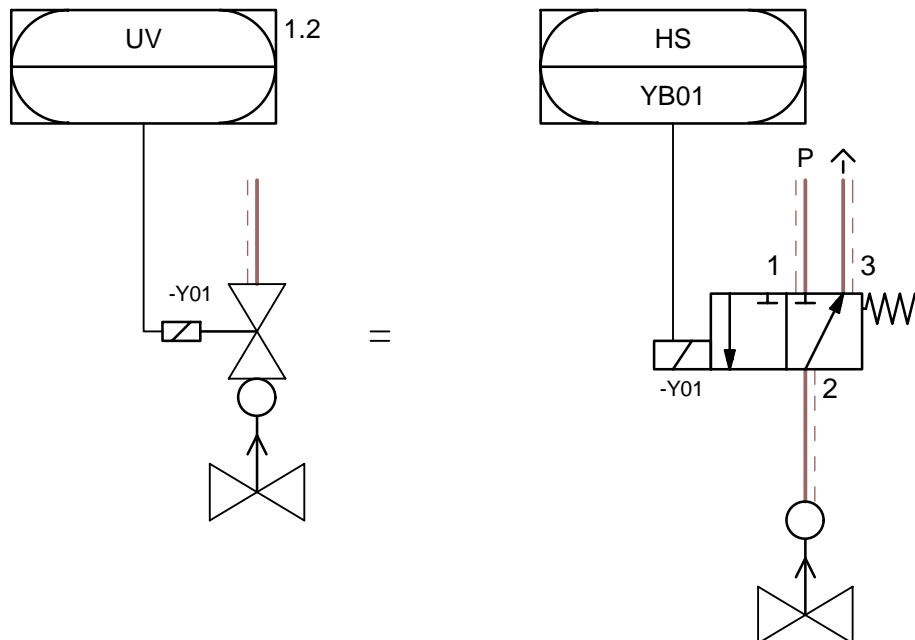
pneumatic actuator, open / close
main valve de-pressurized OPENED
main valve de-energized OPENED
(unilaterally pressurized with spring return)

3/2 way pilot valve
(with spring return)

Signal Processing Location:
Operation Modes:

DCS
Auto / Manual
Open / Close
none

Local Operation:



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAIL OPEN Typical UV 1.2		
					Drawing No. UV 1.2		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAIL OPEN Typical UV 1.2		
					Drawing No. UV 1.2		
					Revision 0.0		Hitachi Zosen INOVA
							Page 2 / 2

UV 1.2.FS

Pneumatic actuator, open/close, FAILSAFE OPEN

pneumatic actuator, open / close
main valve de-pressurized OPENED
main valve de-energized OPENED
(unilaterally pressurized with spring return)

3/2 way pilot valve
(with spring return)

Signal Processing Location:

SIS

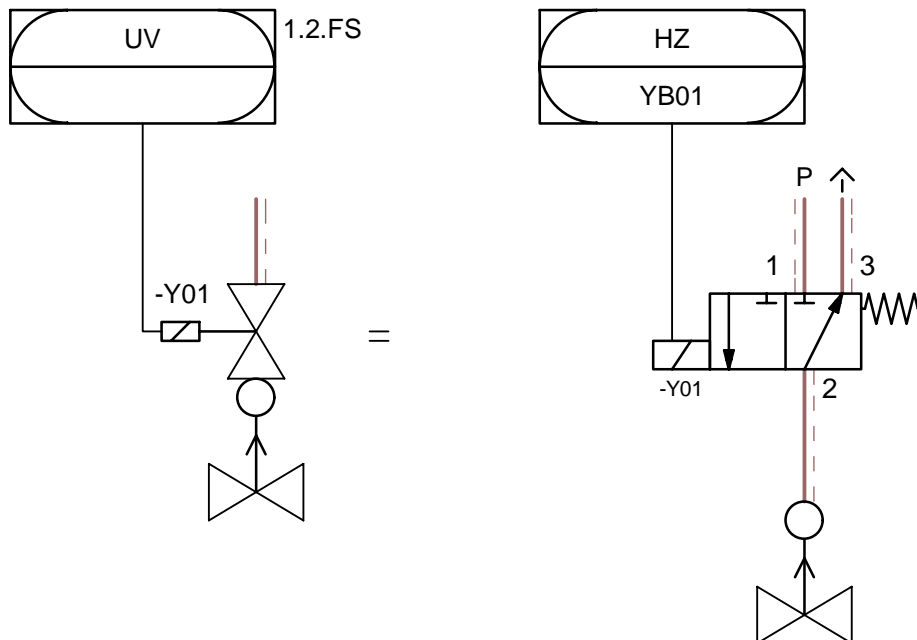
Operation Modes:

Auto / Manual

Open / Close


Local operation:


none



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAILSAFE OPEN Typical UV 1.2.FS		
					Drawing No. UV 1.2.FS		
					Revision 0.0	Hitachi Zosen INOVA	Page 1 / 2

UV 1.2.FS

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YZ01	FAIL SAFE START/OPEN Channel 1	BO		SIS	HW	Local		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, FAILSAFE OPEN Typical UV 1.2.FS Drawing No. UV 1.2.FS		
					Revision 0.0	 Hitachi Zosen INOVA	Page 2 / 2

UV 1.3

Pneumatic actuator, open/close, de-pressurized OPEN/de-energized CLOSED

pneumatic actuator, open / close

main valve de-pressurized OPEN

main valve de-energized CLOSED

(unilaterally pressurized with spring return)

3/2 way pilot valve

(with spring return)

Signal Processing Location:

DCS

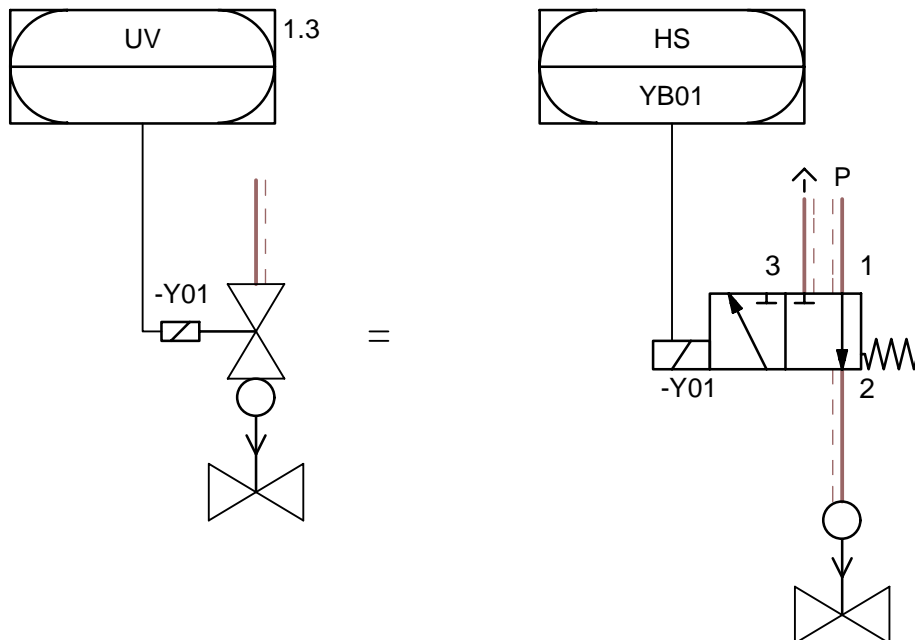
Operation Modes:

Auto / Manual

Open / Close

Local operation:

none




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, de-pressurized OPEN/de-energized CLOSED Typical UV 1.3		
					Drawing No. UV 1.3		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

UV 1.3

Pneumatic actuator, open/close, de-pressurized OPEN/de-enegized CLOSED

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Open / Close	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, de-pressurized OPEN/de-enegized CLOSED Typical UV 1.3				
					Drawing No. UV 1.3				
					Revision 0.0		Hitachi Zosen INOVA		Page 2 / 2

UV 2.1

Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized CLOSED

pneumatic actuator, open / close
main valve de-pressurized PERSISTING
main valve de-energized CLOSED
(bilaterally pressurized without spring return)

4/2 way or 5/2 way pilot valve
(with spring return)

Signal processing location:

DCS

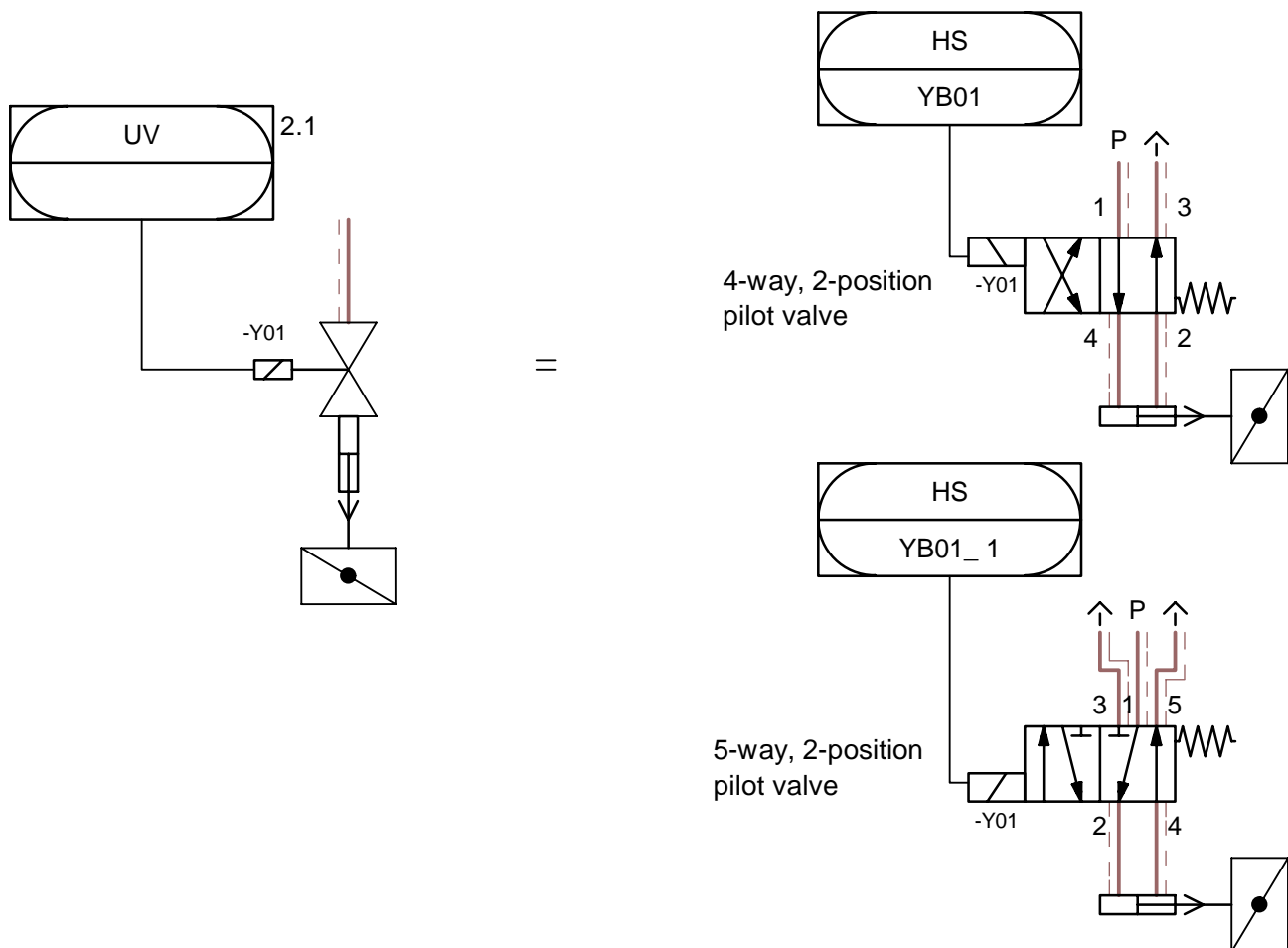
Operation Modes:

Auto / Manual

Open / Close

Local Operation:

none





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized CLOSED Typical UV 2.1		
					Drawing No. UV 2.1		
					Revision 0.0	Hitachi Zosen INOVA	
						Page 1 / 2	

Signal Table

UV 2.1

Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized CLOSED

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Open / Close	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized CLOSED Typical UV 2.1					
					Drawing No. UV 2.1					
					Revision 0.0					Page 2 / 2

UV 2.2

Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN

pneumatic actuator, open / close

main valve de-pressurized PERSISTING

main valve de-energized OPENED

(bilaterally pressurized without spring return)

4/2 way or 5/2 way pilot valve

(with spring return)

Signal Processing Location:

Operation Modes:

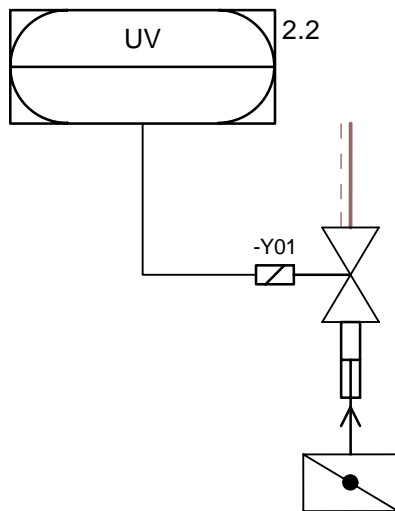
Local Operation:

DCS

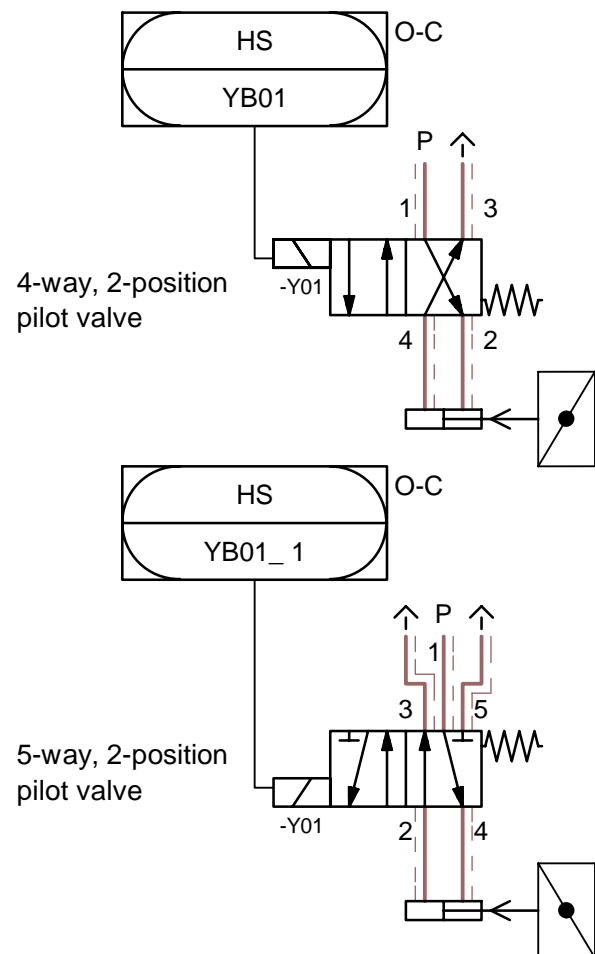
Auto / Manual

Open / Close

none



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Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN Typical UV 2.2		
					Drawing No. UV 2.2		
					Revision 0.0	Hitachi Zosen INOVA	Page 1 / 2

Signal Table

UV 2.2

Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Open / Close	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN Typical UV 2.2					
					Drawing No. UV 2.2					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN


4/2 way or 5/2 way pilot valve
(with spring return)

DCS

Auto / Manual

none





Project No.	Project Name:	
SO_HZI3	Base object	
Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN Typical UV 2.2_BUS		
Drawing No.	UV 2.2_BUS	
Revision 0.0		Page 1 / 2

Signal Table

UV 2.2_BUS

Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Open / Close	BO	Bus	DCS	BUS	BOX	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 01.07.2019	FILU 01.07.2019	STBE 01.07.2019	First Issue	Pneumatic actuator, open/close, de-pressurized PERSISTING/de-energized OPEN Typical UV 2.2_BUS					
					Drawing No. UV 2.2_BUS					
					Revision 0.0					Page 2 / 2

UV 3.1

Pneumatic/hydraulic actuator, open/close, de-press. PERSISTING/de-energ. PERSISTING

pneumatic / hydraulic actuator, open / close
 main valve de-pressurized PERSISTING
 main valve de-energized PERSISTING
 (bilaterally pressurized without spring return)

Signal Processing Location:

Operation Modes:

Local operation:

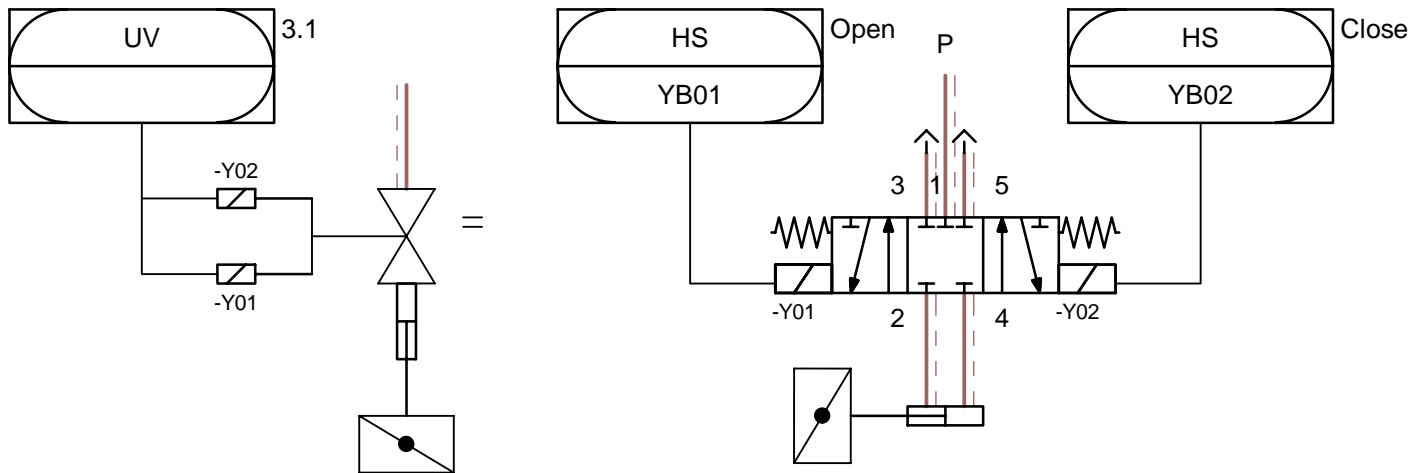
DCS

Auto / Manual

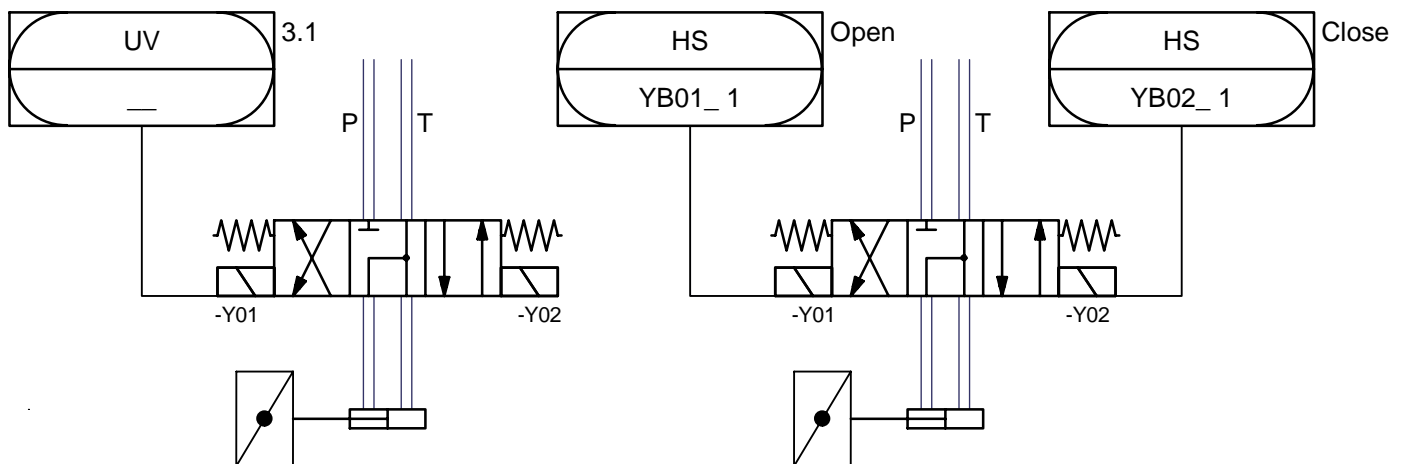
Open / Close

none

pneumatic:



hydraulic:





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic/hydraulic actuator, open/close, de-press. PERSISTING/de-energ. PERSISTING Typical UV 3.1		
					Drawing No. UV 3.1		
					Revision 0.0	Hitachi Zosen INOVA	
						Page 1 / 2	

Signal Table

UV 3.1

Pneumatic/hydraulic actuator, open/close, de-press. PERSISTING/de-energ. PERSISTING

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Open Command	BO	SwOutp	DCS	BUS	RIO	HW	Local
HS	YB02	Close Command	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Pneumatic/hydraulic actuator, open/close, de-press. PERSISTING/de-energ. PERSISTING Typical UV 3.1					
					Drawing No. UV 3.1					
					Revision 0.0					Page 2 / 2

UV 4.2

Electro Pneumatic Actuator, with Positioner

electro-pneumatic actuator, with positioner

de-energized OPEN or CLOSED (defined by the arrow on the actuator)

Signal Processing Location:

DCS

Operation Modes:

Auto / Manual

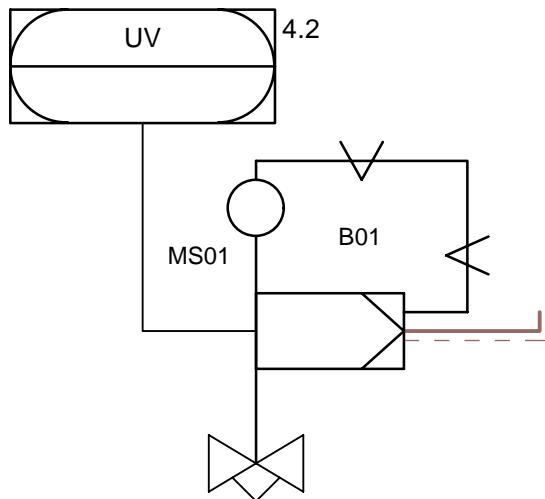
Set point

Power feed:

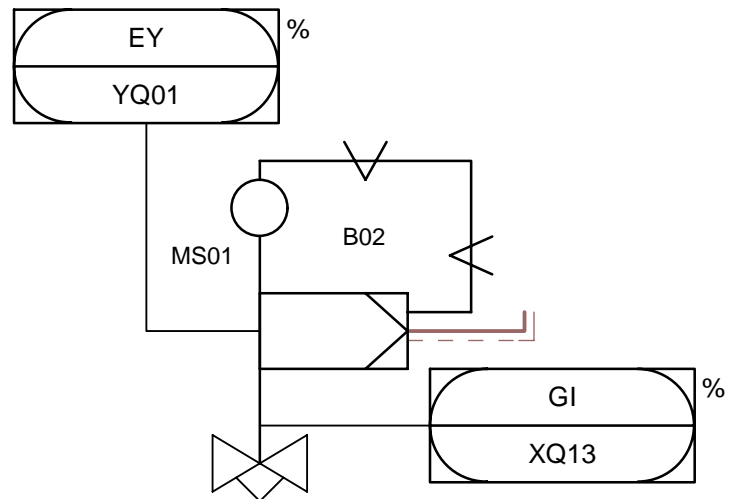
DCS (4 - 20 mA)

Local operation:

none



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Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, with Positioner Typical UV 4.2		
					Drawing No. UV 4.2		
					Revision 0.0		Hitachi Zosen INOVA
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UV 4.4

Electro Pneumatic Actuator, with Positioner, with Shut-off Valve

electro-pneumatic actuator, with positioner

de-energized OPEN or CLOSED (defined by the arrow on the actuator)

Signal Processing Location:

DCS

Operation Modes:

Auto / Manual

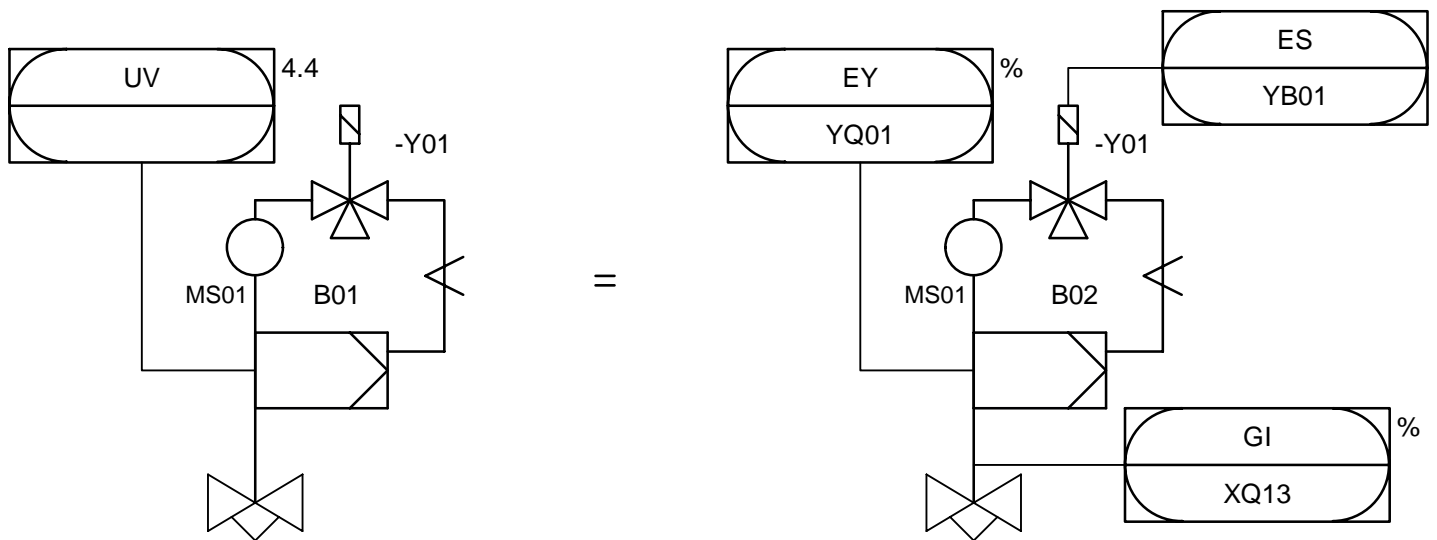
Set point

Power feed:

DCS (4 - 20 mA)

Local operation:

none




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, with Positioner, with Shut-off Valve Typical UV 4.4		
					Drawing No. UV 4.4		
					Revision 0.0		Hitachi Zosen INOVA
							Page 1 / 2

Signal Table

UV 4.4

Electro Pneumatic Actuator, with Positioner, with Shut-off Valve

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
EY	YQ01	Setpoint	AO	4-20 mA	DCS	BUS	RIO	HW	Local
GI	XQ13	Position Indicator	AI	4-20 mA	Local	HW	RIO	BUS	DCS
ES	YB01	Activation positioner	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, with Positioner, with Shut-off Valve Typical UV 4.4				
					Drawing No. UV 4.4				
					Revision 0.0		Hitachi Zosen INOVA		Page 2 / 2

UV 4.4.FS

Electro Pneumatic Actuator, with Positioner FAILSAFE CLOSED

electro-pneumatic actuator, with positioner

de-energized OPEN or CLOSED (defined by the arrow on the actuator)

Signal Processing Location:

SIS

Operation Modes:

Auto / Manual

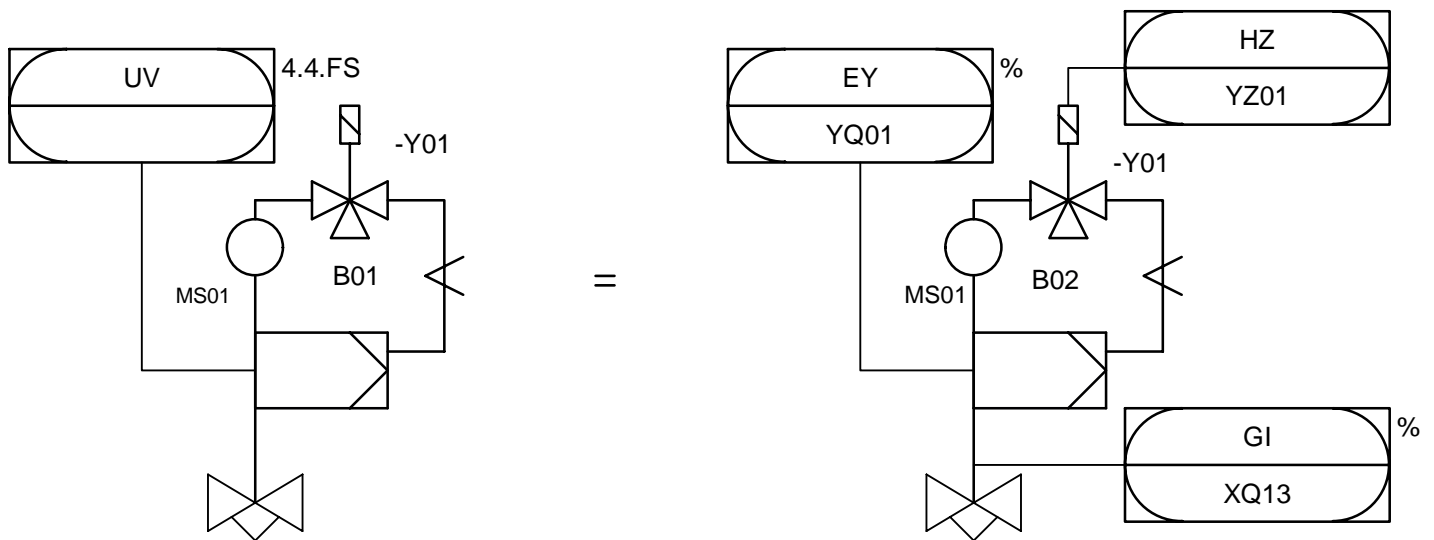
Set point

Power feed:

DCS (4 - 20 mA)

Local operation:

none





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, with Positioner FAILSAFE CLOSED Typical UV 4.4.FS		
					Drawing No. UV 4.4.FS		
					Revision 0.0	Hitachi Zosen INOVA	Page 1 / 2

Signal Table

UV 4.4.FS

Electro Pneumatic Actuator, with Positioner FAILSAFE CLOSED


Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
EY	YQ01	Setpoint	AO	4-20 mA	DCS	BUS	RIO	HW	Local
GI	XQ13	Position Indicator	AI	4-20 mA	Local	HW	RIO	BUS	DCS
HS	YZ01	FAIL SAFE ACTIVATE	BO	SwOutp	SIS	HW	Local		


Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object					
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, with Positioner FAILSAFE CLOSED Typical UV 4.4.FS						
					Drawing No. UV 4.4.FS						
					Revision 0.0					Page 2 / 2	

Signal Table

UV 4.5

Electro Pneumatic Actuator, with Positioner, QUICK OPEN

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
EY	YQ01	Setpoint	AO	4-20 mA	DCS	BUS	RIO	HW	Local
GI	XQ13	Position Indicator	AI	4-20 mA	Local	HW	RIO	BUS	DCS
HS	YB01	Quick OPEN	BO	SwOutp	DCS	BUS	RIO	HW	Local

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, with Positioner, QUICK OPEN Typical UV 4.5					
					Drawing No. UV 4.5					
					Revision 0.0					Page 2 / 2

UV 4.5.3.FS

Electro Pneumatic Actuator, w. Positioner, QUICK OPEN and FAILSAFE CLOSED

electro-pneumatic actuator, with positioner

QUICK OPEN

de-energized OPEN or CLOSED (defined by the arrow on the actuator)

Signal Processing Location:

DCS

Operation Modes:

Auto / Manual

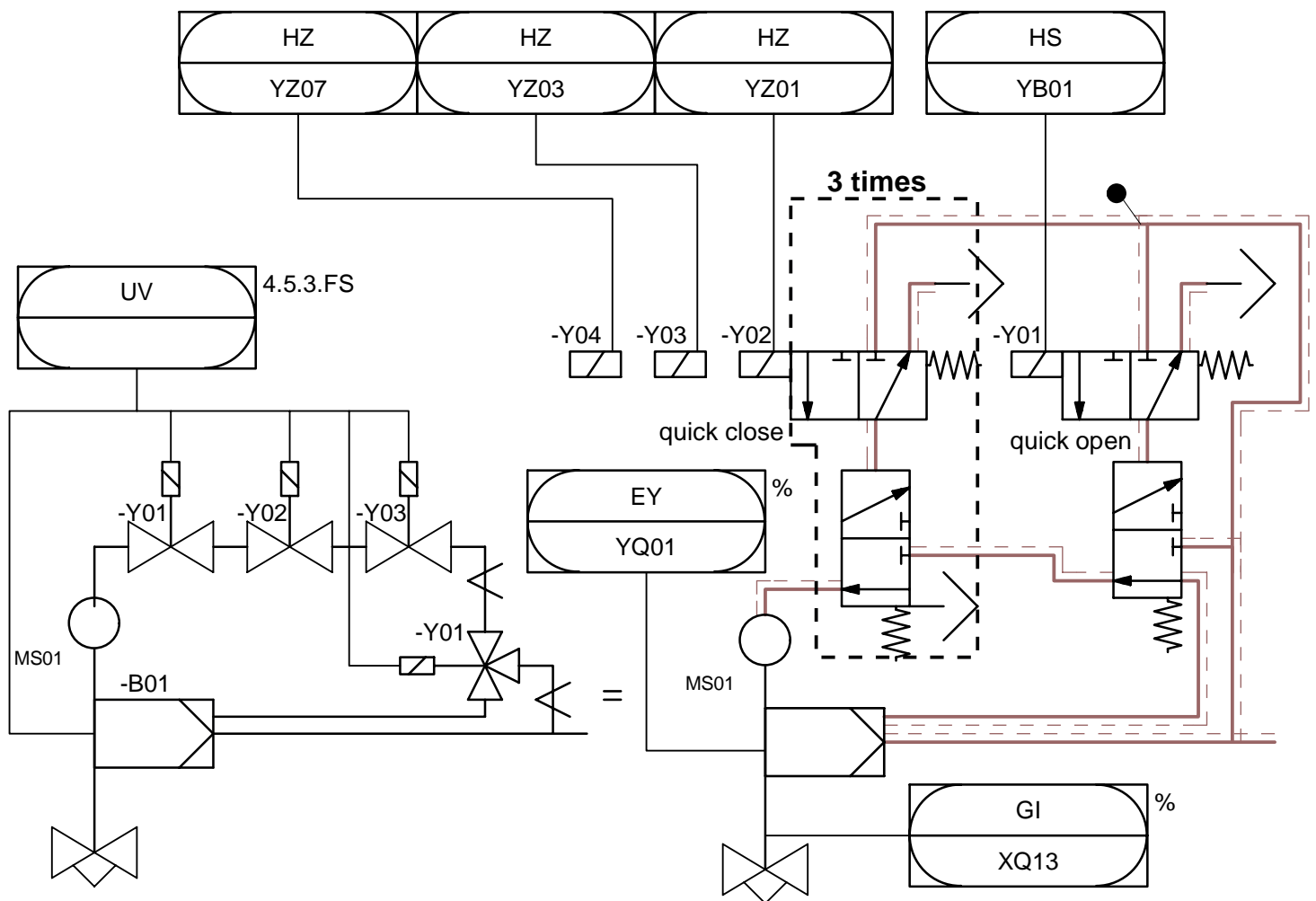
Set point

Power feed:

DCS (4 - 20 mA)

Local operation:

none




Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, w. Positioner, QUICK OPEN and FAILSAFE CLOSED Typical UV 4.5.FS	
					Drawing No.	UV 4.5.3.FS
					Revision 0.0	Hitachi Zosen INOVA
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Signal Table

UV 4.5.3.FS

Electro Pneumatic Actuator, w. Positioner, QUICK OPEN and FAILSAFE CLOSED

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
EY	YQ01	Setpoint	AO	4-20 mA	DCS	BUS	RIO	HW	Local
GI	XQ13	Position Indicator	AI	4-20 mA	Local	HW	RIO	BUS	DCS
HS	YB01	Quick OPEN	BO	SwOutp	DCS	BUS	RIO	HW	Local
HZ	YZ01	FAIL SAFE START/OPEN Channel 1	BO		SIS	HW	Local		
HZ	YZ03	FAIL SAFE START/OPEN Channel 2	BO		SIS	HW	Local		
HZ	YZ07	FAIL SAFE START/OPEN Channel 3	BO		SIS	HW	Local		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Electro Pneumatic Actuator, w. Positioner, QUICK OPEN and FAILSAFE CLOSED Typical UV 4.5.FS					
					Drawing No. UV 4.5.3.FS					
					Revision 0.0			Hitachi Zosen INOVA		Page 2 / 2

UV 5.1

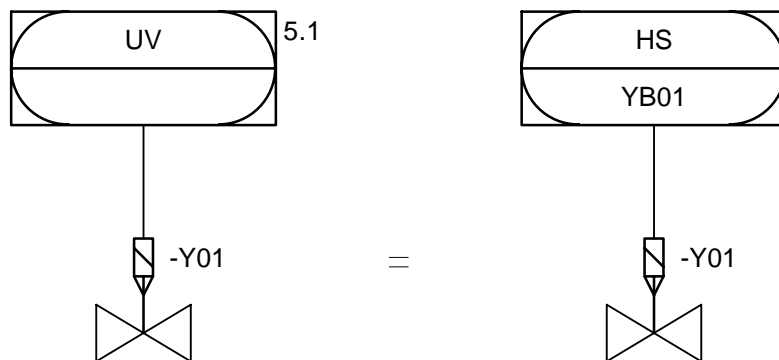
Solenoid valve, open/close, FAIL CLOSED

solenoid valve open / close
valve de-energized CLOSED

Signal Processing Location:
Operation Modes:

DCS
Auto / Manual
Open / Close
none

Local operation:



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Solenoid valve, open/close, FAIL CLOSED		
					Typical UV 5.1		
					Drawing No. UV 5.1		
					Revision 0.0		Hitachi Zosen INOVA
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Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Solenoid valve, open/close, FAIL CLOSED Typical UV 5.1		
					Drawing No. UV 5.1		
					Revision 0.0		Hitachi Zosen INOVA
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UV 5.2

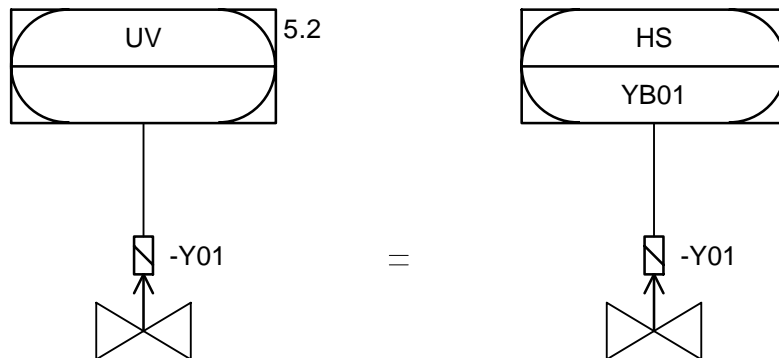
Solenoid valve, open/close, FAIL OPEN

solenoid valve open / close
valve de-energized OPENED

Signal Processing Location:
Operation Modes:

DCS
Auto / Manual
Open / Close
none

Local operation:

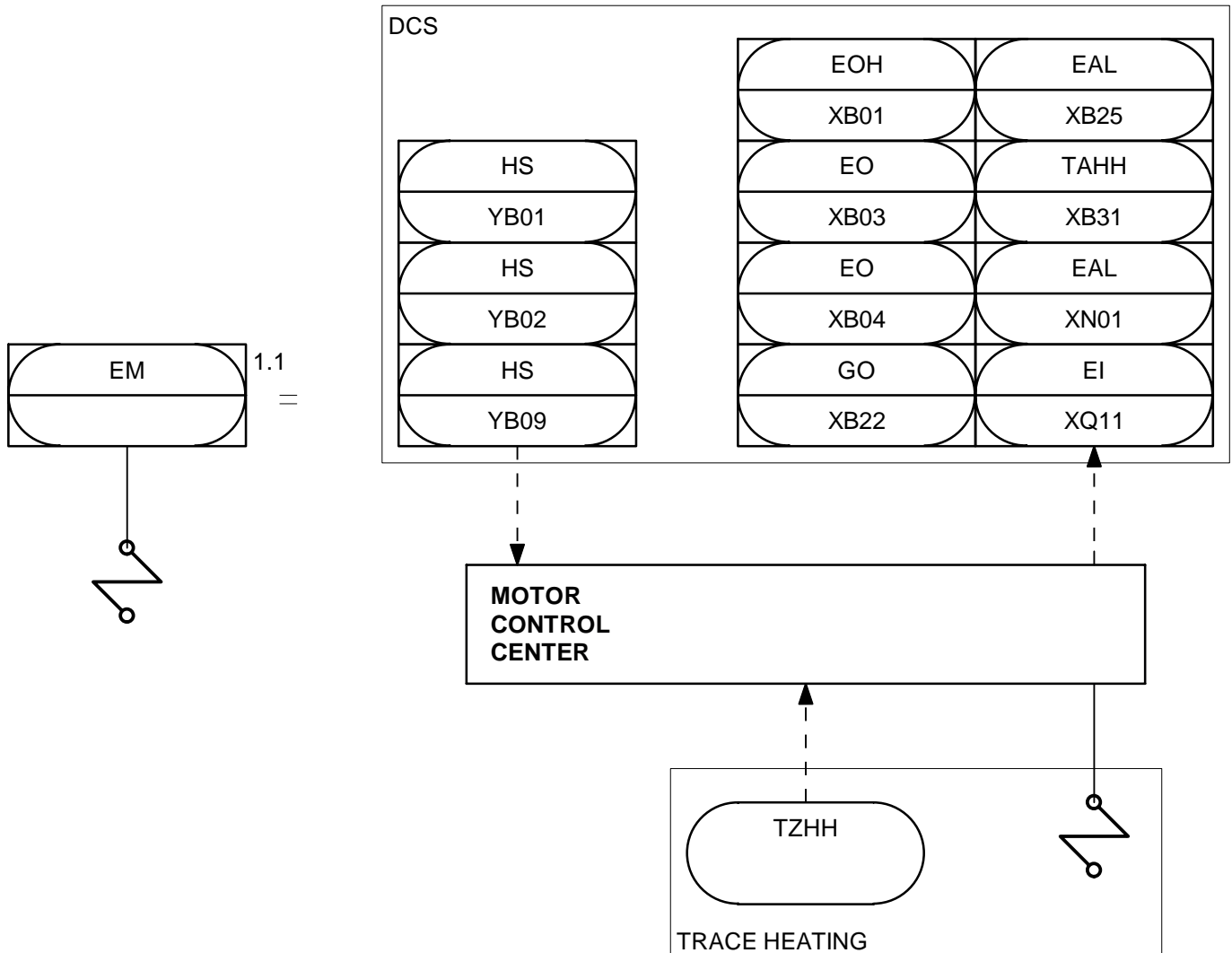


Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Solenoid valve, open/close, FAIL OPEN		
					Typical UV 5.2		
					Drawing No. UV 5.2		
					Revision 0.0		Hitachi Zosen INOVA
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Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Solenoid valve, open/close, FAIL OPEN Typical UV 5.2		
					Drawing No. UV 5.2		
					Revision 0.0		Hitachi Zosen INOVA
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EM 1.1

Trace heating with temperature control in the DCS





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Trace heating with temperature control in the DCS Typical EM 1.1		
					Drawing No. EM 1.1		
					Revision 0.0	Hitachi Zosen INOVA	
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Signal Table

EM 1.1

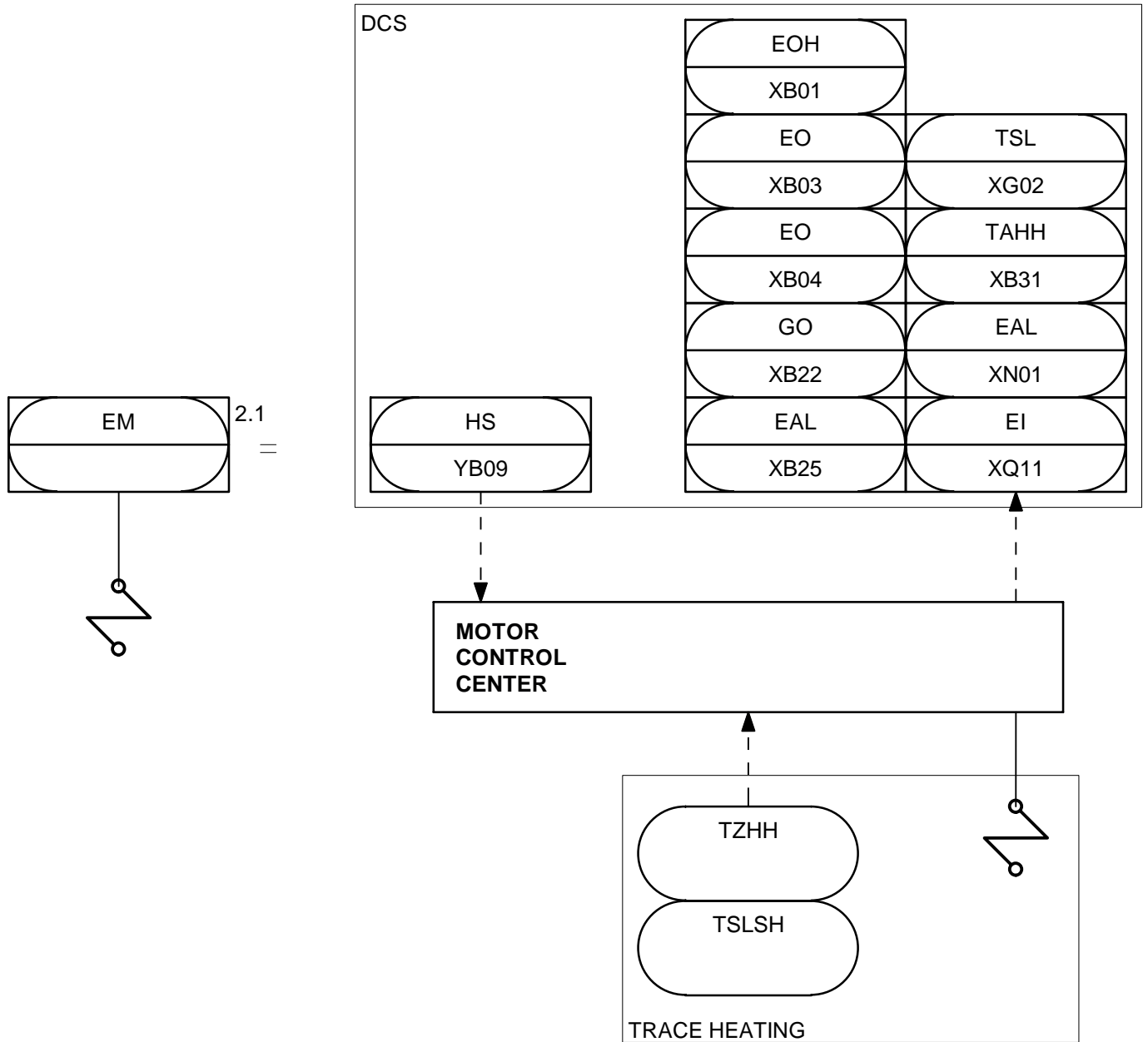
Trace heating with temperature control in the DCS

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
HS	YB01	Operation ON Command	BO	Bus	DCS	BUS	MCC		
HS	YB02	Operation OFF Command	BO	Bus	DCS	BUS	MCC		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
TAHH	XB31	Temperature Trip	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Current	AI	Bus	MCC	BUS	DCS		
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
TZHH	-	Local Temperature Protection	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Trace heating with temperature control in the DCS					
					Typical EM 1.1					
					Drawing No. EM 1.1					
					Revision 0.0					Page 2 / 2

EM 2.1

Trace heating with local control (fixed setpoint)





Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Trace heating with local control (fixed setpoint) Typical EM 2.1		
					Drawing No. EM 2.1		
					Revision 0.0		Hitachi Zosen INOVA
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Signal Table

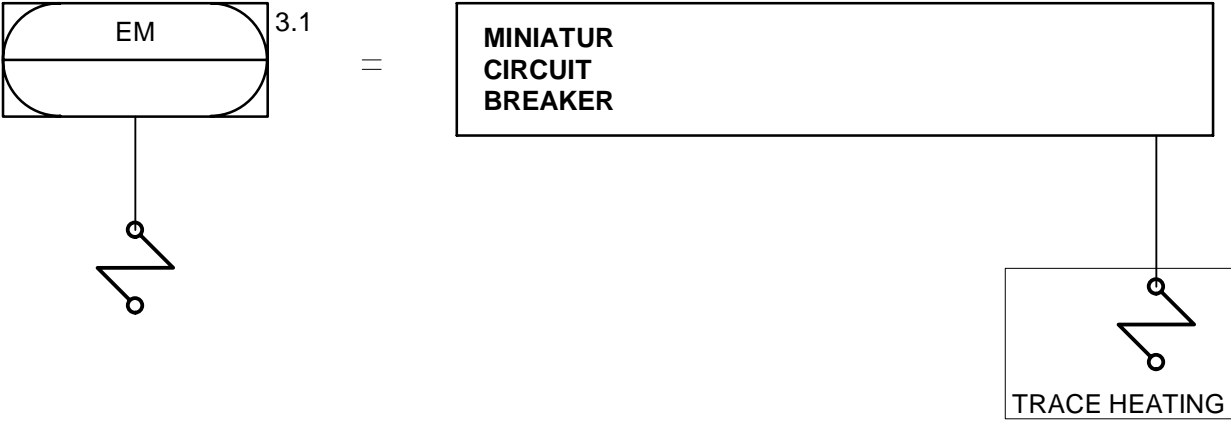
EM 2.1

Trace heating with local control (fixed setpoint)

Instrum. Function	Signal Design.	Description	Signal Type	Signal Kind	Signal Path				
									
GO	XB22	Remote Operation	BI	Bus	MCC	BUS	DCS		
HS	YB09	Remote Reset	BO	Bus	DCS	BUS	MCC		
EOH	XB01	Operation ON Status	BI	Bus	MCC	BUS	DCS		
EO	XB03	Ready	BI	Bus	MCC	BUS	DCS		
EO	XB04	Test Position	BI	Bus	MCC	BUS	DCS		
EAL	XB25	MCC Fault	BI	Bus	MCC	BUS	DCS		
TSL	XG02	Temperature < L	BI	Bus	MCC	BUS	DCS		
TAHH	XB31	Temperature Trip	BI	Bus	MCC	BUS	DCS		
EAL	XN01	General Warning	BI	Bus	MCC	BUS	DCS		
EI	XQ11	Current	AI	Bus	MCC	BUS	DCS		
TZHH	-	Local Temperature Protection	--		Local	HW	MCC		
TSLSH	-	Thermostat	--		Local	HW	MCC		

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object				
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Trace heating with local control (fixed setpoint)					
					Typical EM 2.1					
					Drawing No. EM 2.1					
					Revision 0.0					Page 2 / 2

EM 3.1
Trace heating self-regulating



Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object			
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Trace heating self-regulating Typical EM 3.1				
					Drawing No. EM 3.1				
					Revision 0.0		Hitachi Zosen INOVA		Page 1 / 2

Rev	Created (Initial, Date)	Checked (Initial, Date)	Approved (Initial, Date)	Description of Change	Project No. SO_HZI3	Project Name: Base object	
0.0	TRAN 12.03.2019	FILU 12.03.2019	STBE 12.03.2019	First Issue	Trace heating self-regulating Typical EM 3.1		
					Drawing No. EM 3.1		
					Revision 0.0		Hitachi Zosen INOVA
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